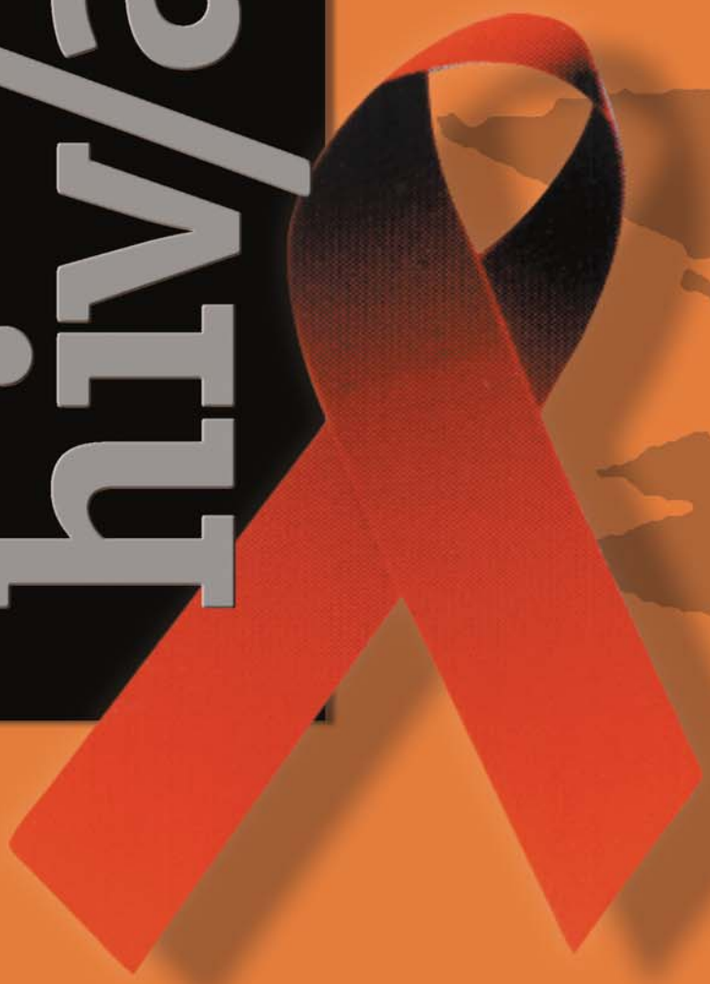
hiv/aids



HIV/AIDS Epidemiology Profile for Community Planning and EPIDEMIOLOGY REPORT

1st HALF `13

WASHINGTON STATE • SEATTLE & KING COUNTY

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

Credits

This 82nd edition of the HIV/AIDS Epidemiology Report includes data available through the end of June 2013. This report is produced jointly by Public Health – Seattle & King County and the Infectious Disease 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 Christy Johnson, Rachel Patrick, Michelle Perry, Ariel VanZandt (disease investigation); Sandy Hitchcock (data entry and quality assurance); Shirley Zhang and Leslie Pringle (data management); Teal Bell, Amy Bennett, Richard Burt, Katelynne Gardner Toren, Jen Reuer and Christina Thibault (epidemiologists); and especially Kristin Whitacre for desktop publishing this report.

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HIV/AIDS Reporting Requirements

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

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

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

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

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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 206-263-2000.

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Executive Summary

This issue of the HIV/AIDS Epidemiology Report is combined with a 2013 Epidemiology Profile for Community Planning for King County. The last King County Community Profile report was published in 2008. Community Profiles characteristically include fact sheets on selected populations, in addition to a comprehensive description of the local HIV epidemic. Also, please note that after this 82nd issue, this Epidemiology report will change from semi-annual to annual publication.

HIV reporting: Reporting requirements for HIV are summarized on page ii. Although HIV case reports may be initiated by laboratories and completed by health department staff, we appreciate medical providers submitting case reports directly. Case report forms are available on-line or by calling (888) 367-5555 (State) or (206) 263-2000 (King County). To ensure correct and timely data, reporting of progressions to AIDS, deaths and diagnoses of potential public health significance (unusual strains) are also appreciated.

HIV & AIDS data: Key points from the tables and figures that summarize HIV/AIDS diagnosed among King County and Washington State residents through 6/30/2013:

- 7,105 King County residents were documented as living with HIV (diagnosed and reported to the health department and not known to have died or relocated), including 55% with AIDS (PLWHA); King County estimates a total of 7,200 – 8,000 PLWHA, see Table 1.
- 11,430 documented PLWHA (56% with AIDS) were residents of Washington State (which has an estimated 11,500 – 12,700 PLWHA, Table 1).
- We added a new table and a figure summarizing sample characteristics and HIV testing history from the past three cycles of the National HIV Behavioral Surveillance Survey.

Annual summary of HIV/AIDS in King County: This annual summary of HIV in King County includes characteristics and trends regarding newly diagnosed individuals, prevalent PLWHA, deaths, perinatal infections, drug resistance, and clinical status.

Monitoring the Goals of the National HIV Strategy and Care cascade : Estimates of King County data suggest about 69% of local PLWHA are virologically suppressed (this compares to fewer than one quarter of U.S. residents from national estimates of virologic suppression). We recently lowered our estimate of individuals not diagnosed with HIV (from 15% to 8%) which impacted the proportion suppressed. Over 95% of individuals diagnosed with HIV in 2011 and 2012 were linked to care within three months, as defined by a CD4+ lymphocyte or plasma viral load test reported to the health department from that time period.

Annual Summary of HIV/AIDS in King County: Trends in new HIV diagnoses, results from the HIV incidence and drug resistance surveillance projects, deaths, and characteristics of individuals living with HIV are described in this article. Key findings include modest declines in new HIV diagnoses overall and increases in the proportion of newly diagnosed individuals who are men who have sex with men (MSM), foreign-born, under 30 years, and over 50 years of age.

Formative Research on the HIV/AIDS Epidemiology Report: To better meet the needs of the community and specifically the readership of this and other HIV-related publications, a graduate student undertook a formative research quality improvement project during the spring and summer of 2013.

A Comparison of African American MSM with Seattle Gay Pride Participants: In 2008, a survey targeting Black MSM was conducted to examine HIV-related risks; from 2009-through 2012 annual surveys at Seattle's Gay Pride festival were conducted for the same purpose. This article compares findings from these projects and findings include lower educational achievement, ages, gay-identification, and income and higher prevalence of HIV among Black MSM relative to a more general group of MSM.

Summary of the 2013 Pride Survey Data: On June 30, 2013, the most recent Gay Pride survey was administered to 366 MSM in Seattle. Key findings include that 11% self-reported HIV-infection, and 15%

reported unprotected anal intercourse with a partner of unknown or different HIV status.

Find your frequency: An extensive evaluation of the "Find Your Frequency" campaign in 2012 and 2013 was conducted. The evaluation included formative research, in-person interviews, and web-based self completed surveys. The evaluation indicates wide coverage and high volumes accessing the campaign web site, but lower volumes of individuals seeking annual or quarterly reminders for HIV testing.

Chronic Health Conditions in HIV: This article uses Washington State Medical Monitoring Project data to describe the impact of cardiovascular disease, mental illness, and substance use among PLWHA.

IDU3 – National HIV Behavioral Surveillance: NHBS is an increasingly useful national surveillance system wherein key populations at risk for HIV are surveyed every three years in the most heavily impacted metropolitan areas. Although injection drug users (IDU) do not comprise a large proportion of local individuals with HIV, it is still important to monitor HIV risk in this group. The subgroup of MSM-IDU and especially amphetamine using MSM-IDU has generally had a higher HIV prevalence than any other sub-population (in this years' survey, 67% were HIV-infected).

HIV Controllers and Antiretroviral Treatment: Some, although very few, individuals seem able to delay or prevent the detrimental impact of HIV without use of antiretrovirals. There is some rationale for treatment none-the-less, to help control inflammation and CD4 declines. This article summarizes the dilemma and introduces a study to determine whether or not HIV "controllers" would benefit from antiretroviral therapy.

University of Washington AIDS Clinical Trials Unit (ACTU) Current Studies: A summary of the enrollment criteria, goals and procedures for all currently enrolling studies is presented here.

HIV/AIDS Data in King County and Washington

Snapshot	King County	Washington
1. Estimated[1] number living with HIV/AIDS	7,200 to 8,000	11,500 to 12,700
2. Estimated new HIV infections 2011	320 to 340	500 to 600
3. Estimated 2011 deaths among people with HIV or AIDS	75	130
4. Proportion with HIV who know their HIV status	80% to 93%	80% to 90%
5. Reported[1] number of people living with HIV/AIDS	7,105	11,430

Table 1: Surveillance of reported[1] HIV/AIDS cases, deaths, and people living with HIV/AIDS – reported as of 06/30/2013 – King County, other Washington counties, and the U.S.

		HIV	AIDS	Total
King County	New cases reported in 1st half 2013	114	36	150
	Cases reported year-to-date	114	36	150
	Cumulative Cases	3,436	8,579	12,015
	Cumulative Deaths	220	4,690	4,910
	Persons Living (prevalent cases)	3,216	3,899	**7,105**
Other Washington State Counties	New cases reported in 1st half 2013	76	27	103
	Cases reported year-to-date	76	27	103
	Cumulative Cases	1,975	5,160	7,135
	Cumulative Deaths	180	2,630	2,810
	Persons Living (prevalent cases)	1,795	2,530	**4,325**
United States[2]	Cases reported as of February 2013			
	Cumulative Cases	Unknown	1,162,584	Unknown
	Cumulative Deaths	Unknown	659,603	Unknown
	Persons Living (prevalent cases)	420,656	502,981	**923,637**

1. The difference between the estimated number (line 1) and the reported number (line 5) above include
   i. A small number of AIDS diagnoses not yet reported (perhaps 5% of total AIDS reports).
   ii. An unknown number of people diagnosed with HIV but not yet reported.
   iii. An unknown number of people (7-20% of the total) infected with HIV but not yet diagnosed or reported.
2. U.S. data include HIV and AIDS data from 50 states plus 6 U.S. dependent areas.

Table 2: Cumulative HIV/AIDS case counts and deaths by resident county at diagnosis – reported as of 06/30/2013 – Washington State

	Cumulative Cases	Deaths		Presumed Living			Total %[2]
		N	%[1]	HIV	AIDS	Total	
Adams	7	1	14%	0	6	6	0.1%
Asotin	26	9	35%	6	11	17	0.1%
Benton	158	45	28%	47	66	113	1.0%
Chelan	72	29	40%	18	25	43	0.4%
Clallam	85	43	51%	17	25	42	0.4%
Clark	748	265	35%	207	276	483	4.2%
Columbia	7	4	57%	0	3	3	<0.1%
Cowlitz	162	69	43%	47	46	93	0.8%
Douglas	9	2	22%	3	4	7	0.1%
Ferry	7	6	86%	0	1	1	<0.1%
Franklin	88	22	25%	25	41	66	0.6%
Garfield	1	0	0%	1	0	1	<0.1%
Grant	59	23	39%	12	24	36	0.3%
Grays Harbor	95	38	40%	17	40	57	0.5%
Island	96	43	45%	25	28	53	0.5%
Jefferson	43	19	44%	10	14	24	0.2%
King	12,015	4,910	41%	3216	3,889	7,105	62.2%
Kitsap	342	141	41%	86	115	201	1.8%
Kittitas	27	10	37%	3	14	17	0.1%
Klickitat	17	8	47%	6	3	9	0.1%
Lewis	63	28	44%	12	23	35	0.3%
Lincoln	4	2	50%	0	2	2	<0.1%
Mason	133	34	26%	39	60	99	0.9%
Okanogan	39	14	36%	6	19	25	0.2%
Pacific	36	13	36%	12	11	23	0.2%
Pend Orielle	10	6	60%	0	4	4	<0.1%
Pierce	1,742	727	42%	476	539	1,015	8.9%
San Juan	30	12	40%	6	12	18	0.2%
Skagit	110	47	43%	27	36	63	0.6%
Skamania	8	7	88%	0	1	1	0.0%
Snohomish	1,140	412	36%	286	442	728	6.4%
Spokane	798	350	44%	179	269	448	3.9%
Stevens	27	18	67%	6	3	9	0.1%
Thurston	300	110	37%	71	119	190	1.7%
Wahkiakum	3	0	0%	1	2	3	<0.1%
Walla Walla	67	34	51%	7	26	33	0.3%
Whatcom	254	103	41%	61	90	151	1.3%
Whitman	23	4	17%	5	14	19	0.2%
Yakima	299	112	37%	71	116	187	1.6%
Total	**19,150**	**7,720**	**40%**	**5,011**	**6,419**	**11,430**	**100%**

1. Percent of county cases who have died (row %).
2. Percent of total presumed living cases in Washington (column %).

Table 3: Demographic characteristics of people presumed living with HIV/AIDS – reported as of 06/30/2013 – King County, other Washington Counties, and all Washington State

	King County		Other Counties		Washington State	
	N	%	N	%	N	%
Sex						
Male	6,341	89%	3,485	81%	9,826	86%
Female	764	11%	840	19%	1,604	14%
Age Group at diagnosis of HIV						
Under 13 years	44	1%	62	1%	106	1%
13-19 years	131	2%	121	3%	252	2%
20-29 years	2,034	29%	1,282	30%	3,316	29%
30-39 years	2,910	41%	1,499	35%	4,409	39%
40-49 years	1,472	21%	936	22%	2,408	21%
50-59 years	426	6%	325	8%	751	7%
60 years and over	88	1%	100	2%	188	2%
Current Age as of 06/30/2013						
Under 13 years	14	<1%	26	1%	40	<1%
13-19 years	22	<1%	27	1%	49	<1%
20-29 years	423	6%	321	7%	744	7%
30-39 years	1,186	17%	763	18%	1,949	17%
40-49 years	2,458	35%	1,408	33%	3,866	34%
50-59 years	2,152	30%	1,238	29%	3,390	30%
60 years and over	850	12%	542	13%	1,392	12%
Race/Ethnicity[1]						
White	4,658	66%	2,893	67%	7,551	66%
Black	1,207	17%	558	13%	1,765	15%
Hispanic	789	11%	562	13%	1,351	12%
Asian & Pacific Islander	258	4%	152	4%	410	4%
Asian	*236*	*3%*	*125*	*3%*	*361*	*3%*
Native Hawaiian & Other PI	*22*	*<1%*	*27*	*1%*	*49*	*<1%*
Native American or Alaskan Native	70	1%	86	2%	156	1%
Multiple Race	123	2%	62	1%	185	2%
Unknown Race	0	0%	12	<1%	12	<1%
HIV Exposure Category						
Male-male sex	4,876	69%	2,189	51%	7,065	62%
Injection drug use (IDU)	315	4%	452	10%	767	7%
IDU & male-male sex	627	9%	369	9%	996	9%
Heterosexual contact[2]	695	10%	754	17%	1,449	13%
Blood product exposure	27	<1%	31	1%	58	1%
Perinatal exposure	36	1%	48	1%	84	1%
Other/Undetermined[3]	529	7%	482	11%	1,011	9%
Total	**7,105**	**100%**	**4,325**	**100%**	**11,430**	**100%**

1. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, and Pacific islanders were grouped due to small cell sizes.
2. 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).
3. Undetermined mode of exposure includes cases with incomplete information, and males with heterosexual contact where the heterosexual partner(s) are not known to be HIV-infected, IDU, or bisexual male. One King/WA case was probably infected through occupational exposure.

Table 4: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – reported as of 06/30/2013 – King County

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Male												
Male-male sex	3,664	79%	409	34%	536	68%	161	62%	29	41%	4,876	69%
Injection drug use (IDU)	107	2%	51	4%	32	4%	7	3%	4	6%	208	3%
IDU & male-male sex	486	10%	43	4%	55	7%	8	3%	14	20%	627	9%
Heterosexual contact	46	1%	107	9%	27	3%	6	2%	0	0%	187	3%
Blood product exposure	13	<1%	3	<1%	0	0%	0	0%	0	0%	16	<1%
Perinatal exposure	1	<1%	9	1%	0	0%	2	1%	1	1%	14	<1%
Undetermined/other	110	2%	182	15%	77	10%	39	15%	2	3%	413	6%
Male Subtotal	**4,427**	**95%**	**804**	**67%**	**727**	**92%**	**223**	**86%**	**50**	**71%**	**6,341**	**89%**
Female												
Injection drug use (IDU)	57	1%	32	3%	5	1%	1	0%	8	11%	107	2%
Heterosexual contact[5]	149	3%	272	23%	45	6%	24	9%	11	16%	508	7%
Blood product exposure	3	<1%	8	1%	0	0%	0	0%	0	0%	11	<1%
Perinatal exposure	3	<1%	15	1%	2	<1%	2	1%	0	0%	22	<1%
Undetermined/other	19	<1%	76	6%	10	1%	8	3%	1	1%	116	2%
Female Subtotal	**231**	**5%**	**403**	**33%**	**62**	**8%**	**35**	**14%**	**20**	**29%**	**764**	**11%**
Total	**4,658**	**100%**	**1,207**	**100%**	**789**	**100%**	**258**	**100%**	**70**	**100%**	**7,105**	**100%**

Table 5: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – reported as of 06/30/2013 – Washington State

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Male												
Male-male sex	5,302	70%	579	33%	786	58%	226	55%	55	35%	7,065	62%
Injection drug use (IDU)	314	4%	85	5%	66	5%	9	2%	13	8%	498	4%
IDU & male-male sex	780	10%	65	4%	89	7%	10	2%	21	13%	996	9%
Heterosexual contact	132	2%	164	9%	70	5%	14	3%	8	5%	392	3%
Blood product exposure	35	<1%	3	<1%	2	<1%	0	0%	0	0%	40	<1%
Perinatal exposure	7	<1%	22	1%	2	<1%	2	<1%	2	1%	37	<1%
Undetermined/other	305	4%	248	14%	167	12%	64	16%	6	4%	798	7%
Male Subtotal	**6,875**	**91%**	**1,166**	**66%**	**1,182**	**87%**	**325**	**79%**	**105**	**67%**	**9,826**	**86%**
Female												
Injection drug use (IDU)	171	2%	55	3%	18	1%	5	1%	14	9%	269	2%
Heterosexual contact[5]	433	6%	395	22%	124	9%	58	14%	32	21%	1,057	9%
Blood product exposure	5	<1%	9	1%	1	<1%	3	1%	0	0%	18	<1%
Perinatal exposure	11	<1%	27	2%	5	<1%	4	1%	0	0%	47	<1%
Undetermined/other	56	1%	113	6%	21	2%	15	4%	5	3%	213	2%
Female Subtotal	**676**	**9%**	**599**	**34%**	**169**	**13%**	**85**	**21%**	**51**	**33%**	**1,604**	**14%**
Total	**7,551**	**100%**	**1,765**	**100%**	**1,351**	**100%**	**410**	**100%**	**156**	**100%**	**11,430**	**100%**

1. And not Hispanic. All race and ethnicity categories are mutually exclusive.
2. Due to small cell sizes, data have been combined for Asians, Native Hawaiians, and other Pacific Islanders.
3. Native American or Alaskan Native.
4. Totals include 123 King County and 185 Washington State persons classified as multiple race, and 12 Washington persons with missing race.
5. Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status and HIV risk behaviors are unknown).

Table 6: People presumed living with HIV/AIDS by gender and age at HIV diagnosis – reported as of 06/30/2013 – King County and Washington State

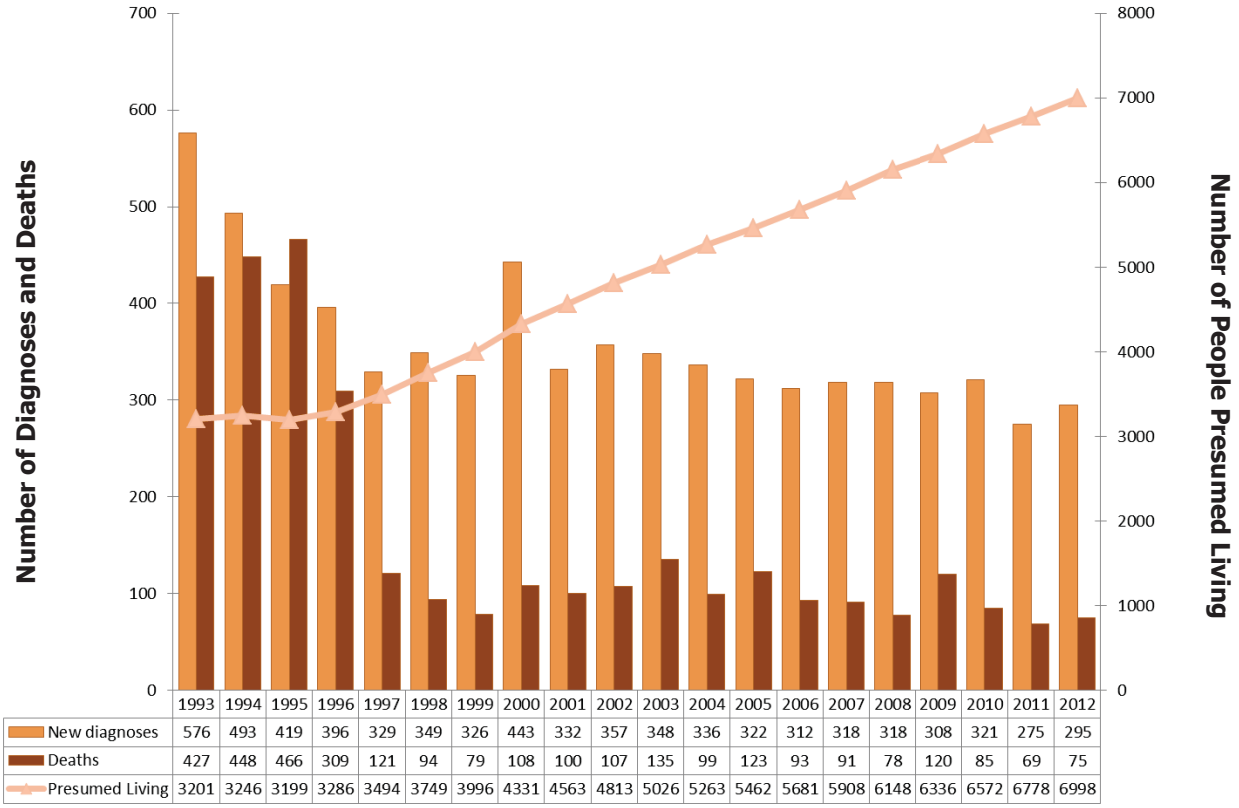
	King County				Washington State			
	Male		Female		Male		Female	
Age at HIV Diagnosis	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Under 13 years	18	<1%	26	3%	46	<1%	60	4%
13-19 years	90	1%	41	5%	168	2%	84	5%
20-24 years	670	11%	90	12%	1,105	11%	222	14%
25-29 years	1,131	18%	143	19%	1,707	17%	282	18%
30-34 years	1,415	22%	144	19%	2,073	21%	274	17%
35-39 years	1,238	20%	113	15%	1,821	19%	241	15%
40-44 years	856	13%	78	10%	1,328	14%	176	11%
45-49 years	489	8%	49	6%	800	8%	104	6%
50-54 years	241	4%	44	6%	413	4%	79	5%
55-59 years	117	2%	24	3%	203	2%	56	3%
60 years and over	76	1%	12	2%	162	2%	26	2%
Total	**6,341**	**100%**	**764**	**100%**	**9,826**	**100%**	**1,604**	**100%**

Table 7: People presumed living with HIV/AIDS by race or ethnicity and place of birth[1] – reported as of 06/30/2013 – King County and Washington State

	King County				Washington State			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
Race / Ethnicity	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
White, non-Hispanic	4,314	78%	147	12%	6,988	78%	192	10%
Black, non-Hispanic	684	12%	498	39%	1,060	12%	652	35%
Male Black, non-Hispanic	*541*		*243*		*817*		*310*	
Female Black, non-Hispanic	*143*		*255*		*243*		*342*	
Hispanic	299	5%	431	34%	465	5%	747	40%
Asian & PI, non-Hispanic	65	1%	174	14%	105	1%	268	14%
Native American, non-Hispanic	63	1%	5	0%	146	2%	5	<1%
Multiple or unknown race, non-Hispanic	107	2%	11	1%	165	2%	18	1%
TOTAL	**5,532**	**81%**	**1,266**	**19%**	**8,929**	**83%**	**1,882**	**17%**

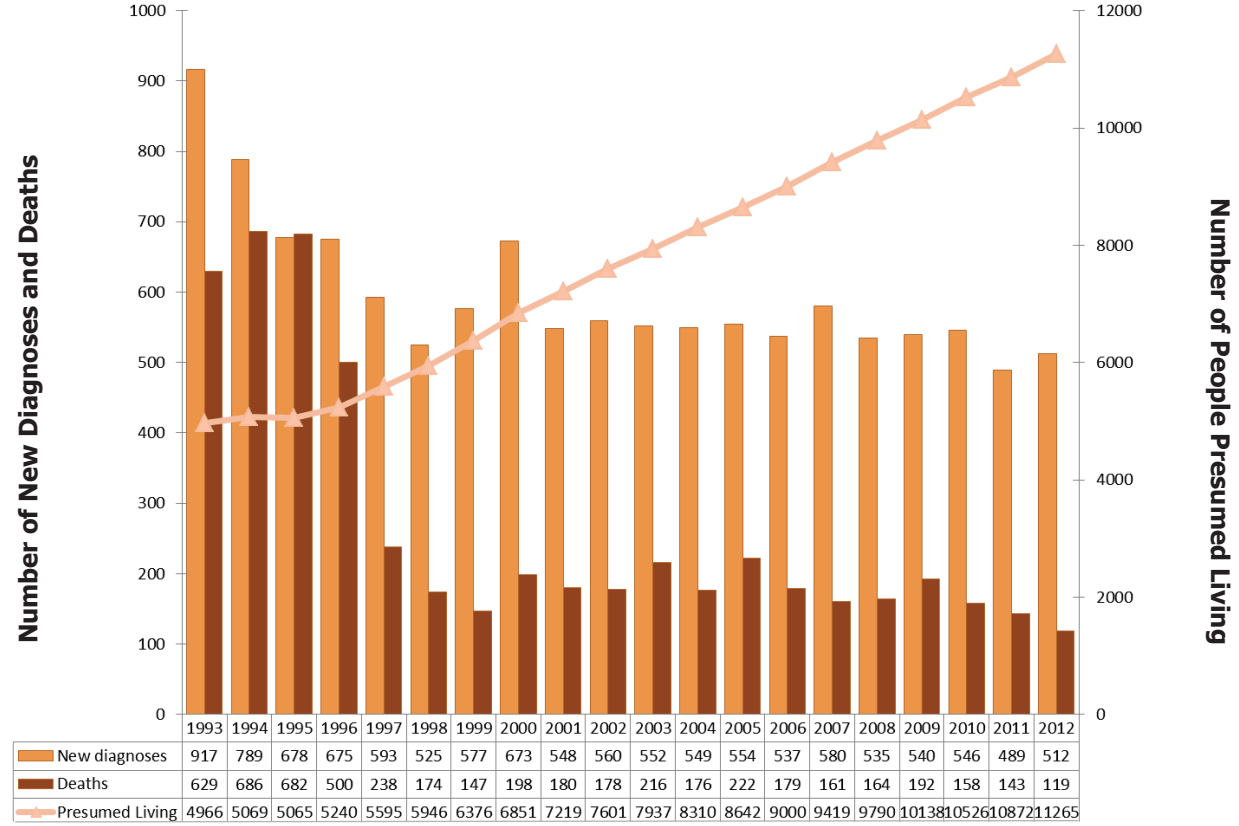
1. Table 7 does not include 307 King County and 619 Washington cases missing place of birth information.

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS (reported as of 6/30/2013) – King County



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
New diagnoses	576	493	419	396	329	349	326	443	332	357	348	336	322	312	318	318	308	321	275	295
Deaths	427	448	466	309	121	94	79	108	100	107	135	99	123	93	91	78	120	85	69	75
Presumed Living	3201	3246	3199	3286	3494	3749	3996	4331	4563	4813	5026	5263	5462	5681	5908	6148	6336	6572	6778	6998

Figure 2: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS (reported as of 6/30/2013) – Washington State



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
New diagnoses	917	789	678	675	593	525	577	673	548	560	552	549	554	537	580	535	540	546	489	512
Deaths	629	686	682	500	238	174	147	198	180	178	216	176	222	179	161	164	192	158	143	119
Presumed Living	4966	5069	5065	5240	5595	5946	6376	6851	7219	7601	7937	8310	8642	9000	9419	9790	10138	10526	10872	11265

Table 8: Demographic characteristics of King County residents diagnosed 1982-2012 and reported through 06/30/2013, by date of HIV diagnosis

	1982-2003		2004-2006		2007-2009		2010-2012[1]		Trend[2]
	N	%	N	%	N	%	N	%	2004-2012
TOTAL	**9,085**	**100%**	**970**	**100%**	**944**	**100%**	**891**	**100%**	
HIV Exposure Category									
Men having sex with men (MSM)	6,623	75%	598	70%	596	74%	580	76%	up
Injection drug use (IDU)	524	6%	54	6%	32	4%	37	5%	
MSM-IDU	937	11%	92	11%	69	9%	78	10%	
Heterosexual contact[3]	571	7%	114	13%	104	13%	62	8%	down
Blood product exposure	97	1%	1	<1%	1	<1%	0	0%	
Perinatal exposure	28	<1%	1	<1%	8	1%	7	1%	up
SUBTOTAL- known risk	*8,780*		*860*		*810*		*764*		
Undetermined/other[4]	305	3%	110	11%	134	14%	127	14%	
Sex & Race/Ethnicity[5]									
Male	*8,437*	*93%*	*860*	*89%*	*822*	*87%*	*773*	*87%*	
White Male	6,602	73%	530	55%	495	52%	488	55%	
Black Male	874	10%	143	15%	121	13%	96	11%	down
Hispanic Male	609	7%	114	12%	129	14%	119	13%	
Other Male	352	4%	73	8%	77	8%	70	8%	
Female	*648*	*7%*	*110*	*11%*	*122*	*13%*	*118*	*13%*	
White Female	279	3%	30	3%	28	3%	30	3%	
Black Female	257	3%	60	6%	74	8%	63	7%	
Hispanic Female	47	1%	8	1%	11	1%	9	1%	
Other Female	65	1%	12	1%	9	1%	16	2%	
Race/Ethnicity[5]									
White	6,881	76%	560	58%	523	55%	518	58%	
Black	1,131	12%	203	21%	195	21%	159	18%	
Hispanic	656	7%	122	13%	140	15%	128	14%	
Asian & Pacific Islander	169	2%	48	5%	53	6%	57	6%	
Native American or Alaskan Native	111	1%	8	1%	7	1%	5	1%	
Multiple Race	137	2%	29	3%	26	3%	24	3%	
Place of Birth									
Born in U.S. or Territories	8,044	91%	710	77%	668	73%	621	73%	down
Born outside U.S.	826	9%	212	23%	252	27%	231	27%	up
SUBTOTAL- known birthplace	8,870	*100%*	922	*100%*	920	*100%*	852	*100%*	
Birthplace Unknown	215	2%	48	5%	24	3%	39	4%	
Age at diagnosis of HIV									
0-19 years	153	2%	10	1%	30	3%	22	2%	up
20-29 years	2,327	26%	220	23%	255	27%	254	29%	up
30-39 years	4,090	45%	388	40%	276	29%	280	31%	down
40-49 years	1,891	21%	263	27%	238	25%	197	22%	down
50-59 years	511	6%	73	8%	107	11%	110	12%	up
60+ years	113	1%	16	2%	38	4%	28	3%	up
Residence									
Seattle residence	7,723	85%	718	74%	660	70%	651	73%	
King Co. residence outside Seattle	1,362	15%	252	26%	284	30%	240	27%	

1. Due to delays in reporting, data from recent years are incomplete.
2. Chi-square statistical trends in proportions ($p<.05$) were calculated for cases with known characteristics for the periods 2004-06, 2007-09, and 2010-12.
3. Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
4. 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.
5. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, & other Pacific Islanders were grouped due to small cell sizes.

Table 9: Demographic characteristics of Washington State residents diagnosed 1982-2012 and reported through 06/30/2013, by date of HIV diagnosis

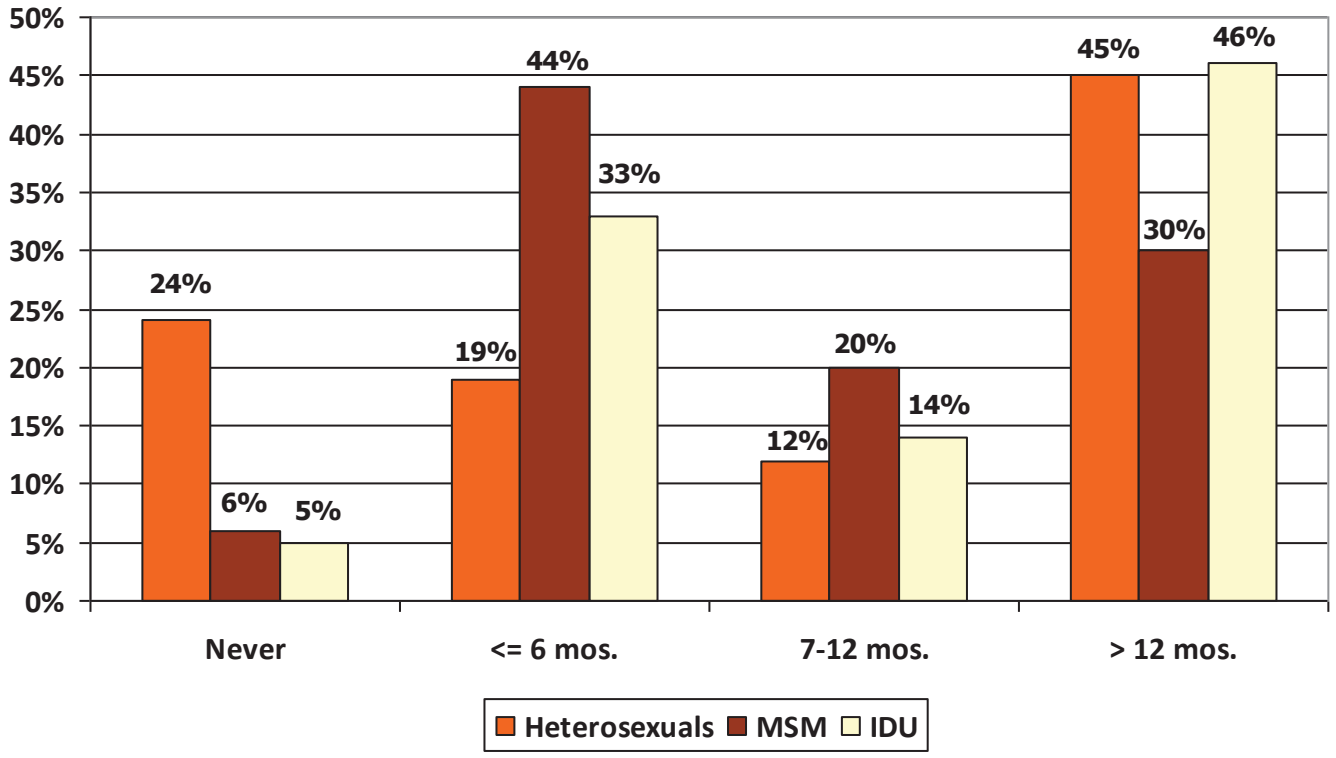
	1982-2003		2004-2006		2007-2009		2010-2012[1]		Trend[2]
	N	%	N	%	N	%	N	%	2004-2012
TOTAL	**14,120**	**100%**	**1,640**	**100%**	**1,655**	**100%**	**1,547**	**100%**	
HIV Exposure Category									
Men having sex with men (MSM)	9,301	69%	911	63%	947	68%	904	72%	up
Injection drug use (IDU)	1,272	9%	131	9%	80	6%	84	7%	down
MSM-IDU	1,436	11%	148	10%	120	9%	112	9%	
Heterosexual contact[3]	1,215	9%	248	17%	236	17%	145	11%	down
Blood product exposure	217	2%	4	<1%	2	<1%	0	0%	
Perinatal exposure	62	<1%	3	<1%	17	1%	19	2%	up
SUBTOTAL- known risk	*13,503*	*100%*	*1,445*	*100%*	*1,402*	*100%*	*1,264*	*100%*	
Undetermined/other[4]	617	4%	195	12%	253	15%	283	18%	
Sex & Race/Ethnicity[5]									
Male	*12,690*	*90%*	*1,390*	*85%*	*1,381*	*83%*	*1,323*	*86%*	
White Male	9,969	71%	919	56%	841	51%	793	51%	down
Black Male	1,214	9%	199	12%	184	11%	174	11%	
Hispanic Male	962	7%	168	10%	229	14%	223	14%	up
Other Male	545	4%	104	6%	127	8%	133	9%	
Female	*1,430*	*10%*	*250*	*15%*	*274*	*17%*	*224*	*14%*	
White Female	753	5%	97	6%	101	6%	79	5%	
Black Female	404	3%	91	6%	110	7%	96	6%	
Hispanic Female	126	1%	30	2%	37	2%	18	1%	
Other Female	147	1%	32	2%	26	2%	31	2%	
Race/Ethnicity[5]									
White	10,722	76%	1,016	62%	942	57%	872	56%	down
Black	1,618	11%	290	18%	294	18%	270	17%	
Hispanic	1,088	8%	198	12%	266	16%	241	16%	up
Asian & Pacific Islander	255	2%	69	4%	81	5%	99	6%	up
Native American or Alaskan Native	207	1%	27	2%	25	2%	19	1%	
Multiple Race	217	2%	40	2%	47	3%	46	3%	
SUBTOTAL- known race/ethnicity	14,107	100%	1,640	100%	1,655	100%	1,547	100%	
Unknown Race	13	<1%	0	0%	0	0%	0	0%	
Place of Birth									
Born in U.S. or Territories	12,546	91%	1,258	81%	1,183	76%	1,037	74%	down
Born outside U.S.	1,204	9%	303	19%	376	24%	363	26%	up
SUBTOTAL- known birthplace	*13,750*	*100%*	*1,561*	*100%*	*1,559*	*100%*	*1,400*	*100%*	
Birthplace Unknown	370	3%	79	5%	96	6%	147	10%	
Age at diagnosis of HIV									
0-19 years	304	2%	22	1%	65	4%	56	4%	up
20-29 years	3,716	26%	386	24%	442	27%	414	27%	up
30-39 years	6,084	43%	562	34%	477	29%	469	30%	down
40-49 years	2,930	21%	472	29%	403	24%	342	22%	down
50-59 years	838	6%	163	10%	191	12%	198	13%	up
60+ years	248	2%	35	2%	77	5%	68	4%	up

1. Due to delays in reporting, data from recent years are incomplete.
2. Chi-square statistical trends in proportions ($p<.05$) were calculated for cases with known characteristics for the periods 2004-06, 2007-09, and 2010-12.
3. Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
4. Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up), patients still under investigation, patients whose only risk was heterosexual contact and where the risk of the sexual partner(s) was (were) undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.
5. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

Table 10: Characteristics and HIV prevalence among participants in Seattle area National HIV Behavioral Surveys, 2010-2012

	2010 Heterosexuals		2011 Men who have Sex with Men (MSM)		2012 Injection Drug Users (IDU)	
Total N	460		360		688	
HIV Seropositive	1% (5/455)		19% (66/343)		8% (57/686)	
MSM/IDU HIV Positive			45% (9/20)		39% (25/65)	
HIV Positive—Unaware of Status	60% (3/5)		18% (12/66)		11% (6/57)	
	Total %	**% HIV +**	**Total %**	**% HIV +**	**Total %**	**% HIV +**
Age (years)						
18-29	44%	1%	38%	9%	15%	3%
30-39	18%	1%	27%	18%	25%	9%
40-49	26%	1%	22%	31%	27%	12%
50+	12%	4%	13%	34%	33%	7%
Gender						
Male	48%	1%	100%	19%	64%	9%
Female	52%	2%	-	-	36%	6%
Race/Ethnicity						
White, non-Hispanic	7%	0%	62%	19%	57%	7%
Black, non-Hispanic	65%	1%	10%	36%	17%	9%
Hispanic	6%	0%	13%	13%	9%	6%
Other Race	6%	4%	6%	9%	4%	18%
Multiracial	17%	1%	8%	13%	12%	13%
Previous 12 Months						
Number of Sex Partners						
0	-	-	-	-	16%	7%
1	27%	2%	22%	19%	36%	4%
2-4	45%	1%	29%	17%	30%	11%
5-9	14%	0%	23%	18%	8%	7%
10+	13%	2%	27%	23%	9%	16%
Male-Male Sex	-	-	100%	19%	10%	39%
STD Diagnosis	8%	0%	11%	32%	5%	25%
Popper Use	1%	0%	30%	32%	-	-
Amphetamine Use (non-injection)	5%	0%	16%	39%	45%	10%
Amphetamine Injection (any)	-	-	5%	50%	43%	15%
Injection Drug Use	-	-	6%	45%	100%	8%
Drug Most Frequently Injected			**Among MSM-IDU**			
Heroin	-	-	10%	50%	85%	5%
Speedballs	-	-	0%	0%	5%	3%
Cocaine	-	-	0%	0%	1%	22%
Amphetamine	-	-	90%	56%	9%	41%
Receptive Needle Sharing	-	-	4%	100%	33%	5%

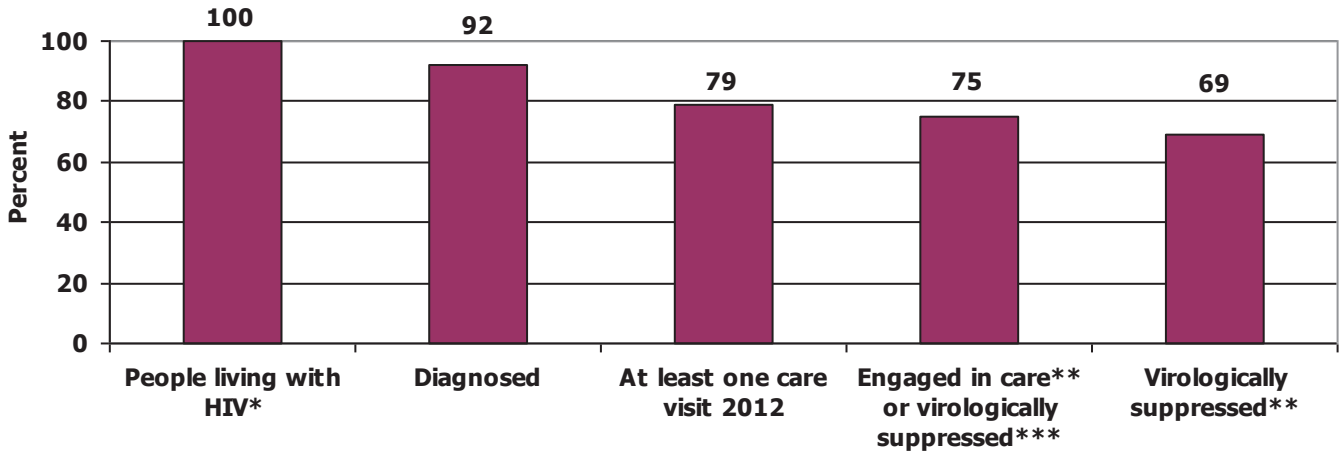
Figure 3: HIV testing history (time since last HIV test) among heterosexuals, men who have sex with men (MSM), and injection drug users (IDU) in Seattle-area National HIV Behavioral Surveys, 2010-2012



Monitoring the goals of the National Strategy for HIV/AIDS and the HIV Care Cascade

This edition of the HIV/AIDS Surveillance Report includes a newly revised section designed to present local data relevant to the U.S. National HIV/AIDS Strategy (NHAS), which was first released in July 2010[1]. The NHAS defines three primary objectives: 1) to reduce new HIV infections; 2) increase access to care and improve health outcomes; and 3) reduce HIV-related disparities. In this section, we address each of these outcomes, with a particular focus on the HIV Care Cascade, the sequential steps from HIV diagnosis to linkage to care, sustained engagement with care, and viral suppression.

Figure 1: HIV Care Cascade for King County as of June 30, 2013



	Estimated people living with HIV/ AIDS	Diagnosed	At Least One Care Visit in Past Year	Engaged in Care or Virologically Suppressed	Virologically Suppressed
Number of people	6997	6437	5544	5253	4797
% of prior category	-	92%	86%	95%	91%

* Percent undiagnosed was calculated as 6% among MSM; prior estimate of 15% was used for non-MSM resulting in an estimate of 7.3% overall, rounded up to 8%.
** Engaged in care indicates two or more reported laboratory results in 2012.
*** Virologically suppressed is defined as the most recent viral load (2012+) less than 200 copies.

Figure 1 presents the HIV care cascade for King County, WA. Public Health estimates that 69% of all people living with HIV (PLWHA) in the county – including 75% of all persons with diagnosed HIV infection – are virologically suppressed (virologically suppressed is defined here to mean a viral load of <200 copies/mL). The Centers for Disease Control and Prevention estimates that only 25% of PLWHA in the U.S., 30% of persons with diagnosed HIV infection, are virologically suppressed[2].

HIV infection and diagnosis: reducing HIV by increasing HIV testing and earlier diagnoses and treatment for individuals at highest risk of HIV

Figure 2a: Publicly funded HIV testing in King County

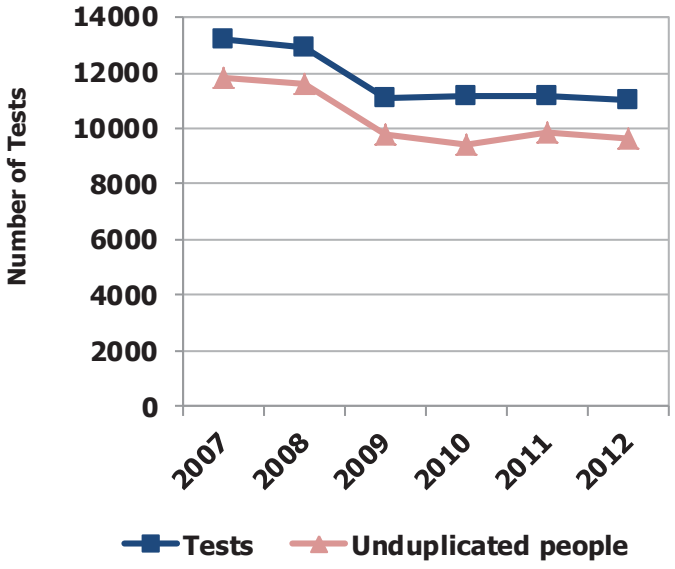
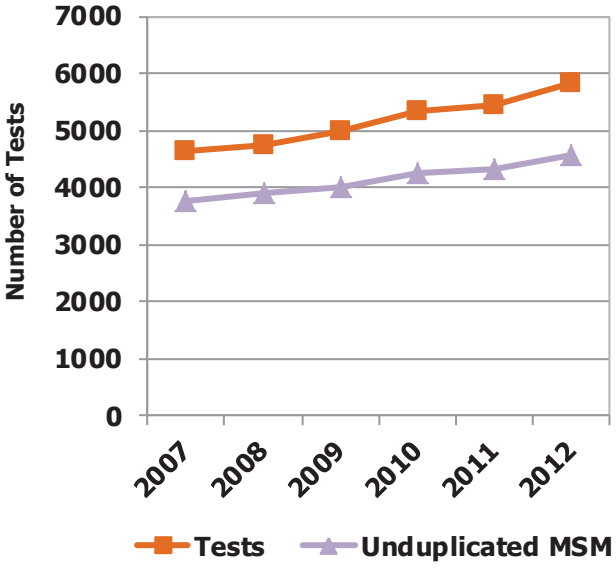


Figure 2b: Publicly funded HIV testing in King County among men who have sex with men (MSM)



Figures 2a and 2b show trends in the number of HIV tests performed and numbers of persons tested using Public Health funds between 2007 and 2012. Over a six year period, the total number of tests performed declined 16%, from 13,185 to 11,046. During this same period, the number of tests performed among men who have sex with men (MSM) increased 26%. This change reflects a concerted effort by Public Health – Seattle & King County to focus HIV testing resources on the population at greatest risk for HIV infection.

Figure 3a: Percent of individuals testing HIV positive among all publicly funded HIV tests in King County EXCLUDING men who have sex with men

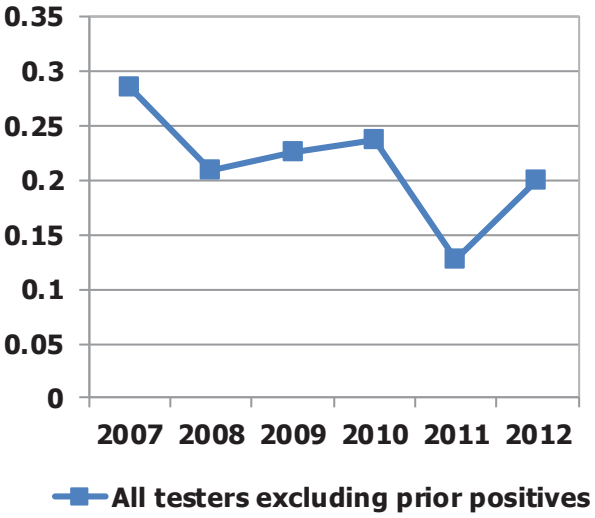


Figure 3b: Percent of men who have sex with men (MSM) testing HIV positive among all publicly funded HIV tests in King County

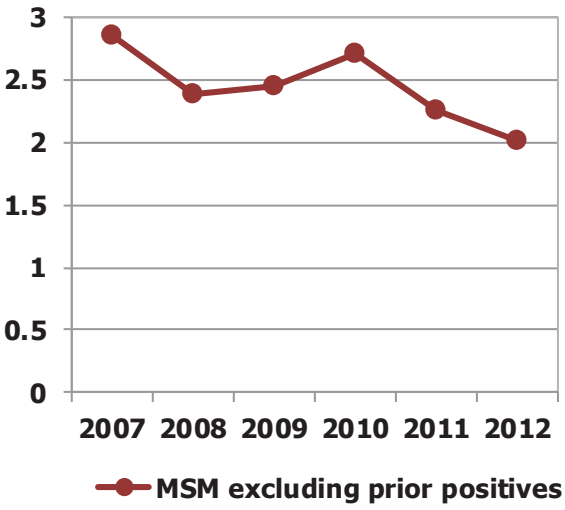


Figure 3c: Median and inter-quartile ranges (IQR) of inter-test intervals (time from last negative test to first positive test) in months for men who have sex with men (MSM); King County

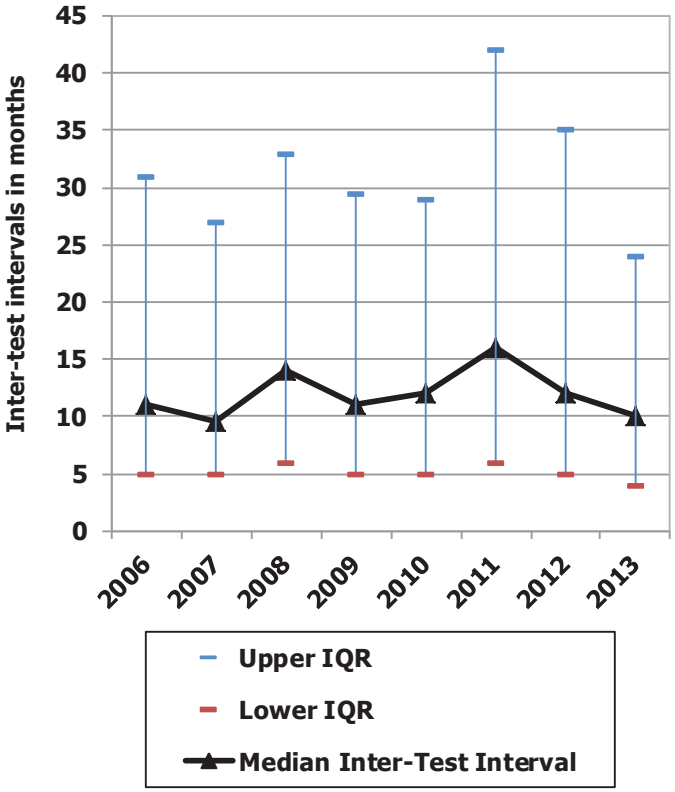
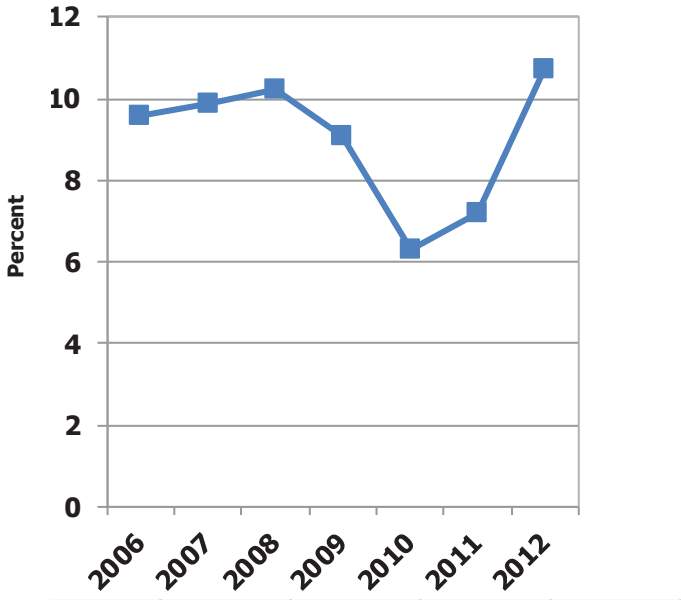
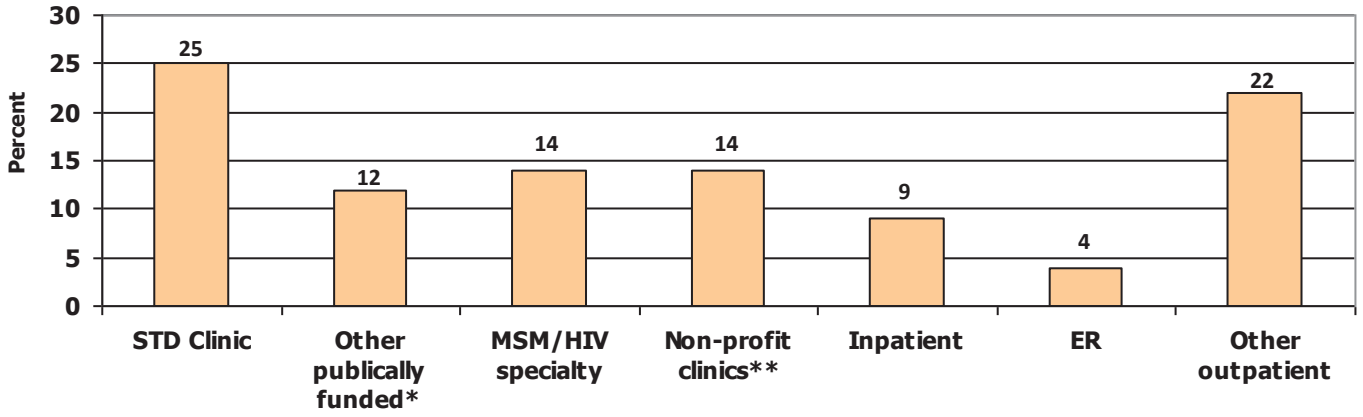


Figure 3d: Percent of newly diagnosed men who have sex with men (MSM) who never tested for HIV before an initial positive test; King County



Figures 3a-3d summarize HIV testing history. Figure 3a shows the percentage of all persons excluding MSM and all Figure 3b shows the percent of MSM testing positive for HIV infection through publically funded testing sites. Between 2007 and 2012, the percentage of MSM testing HIV positive at these sites declined from 2.9% to 2.0%. The median inter-test interval (time from last negative to first positive HIV test) among MSM remained stable from 2006 to 2013, with a median of 12 months (Figure 3c). Throughout this period, approximately 10% of MSM with newly diagnosed HIV infection reported never having previously tested for HIV (3d).

Figure 4. Percent of new HIV diagnoses by type of testing site, King County 2011-2012



* Other publically funded sites exclude the Harborview Medical Center STD clinic and include sites that receive federal or local funds for HIV testing

** E.g. community clinics, other non-profits, and University-affiliated clinics

Figure 4 presents information on where persons with newly diagnosed HIV infection were diagnosed. The PHSKC STD clinic was the largest single diagnosing site for HIV infection, diagnosing 25% of all new infections in 2011-12. A total of 37% of all cases, including 44% of cases in MSM, were diagnosed through publically funded HIV testing.

Figure 5: Rate of new HIV diagnoses, overall and for men and women per 100,000 population per year, 2003 through 2012

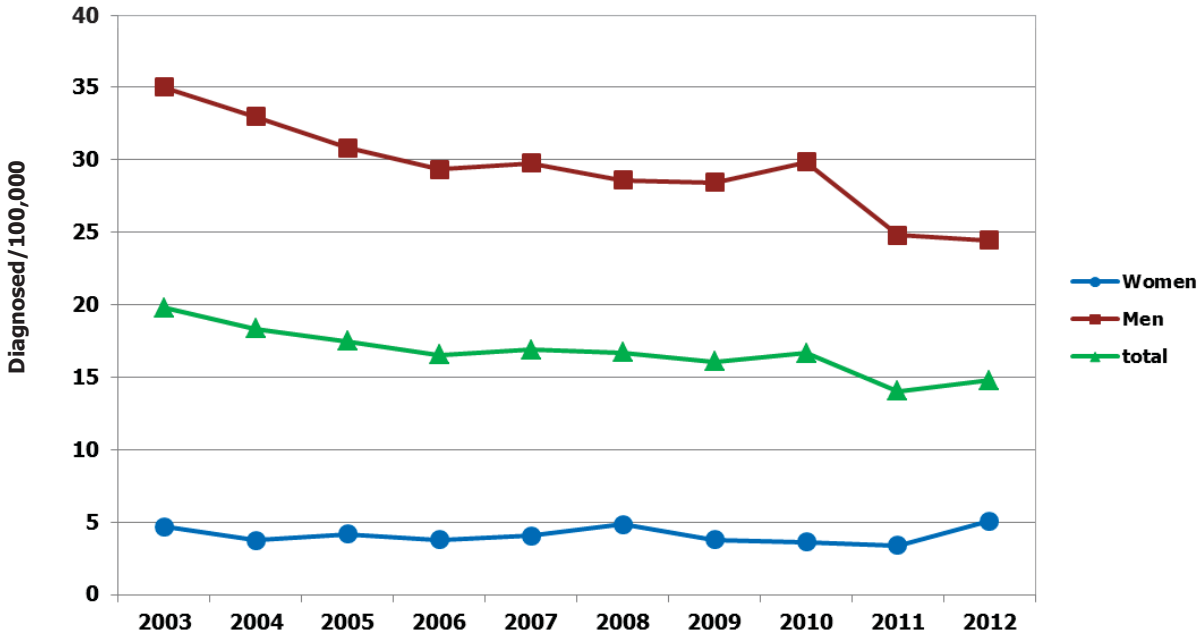


Figure 5 shows the rate of new HIV diagnoses in King County, 2003-2012. Over the ten year period, the rates of HIV diagnosis declined by 23%. This decline was evident both overall and for men, but not among women, who comprise a relatively small proportion of cases.

Figure 6: AIDS diagnosis within one year of HIV diagnosis, King County

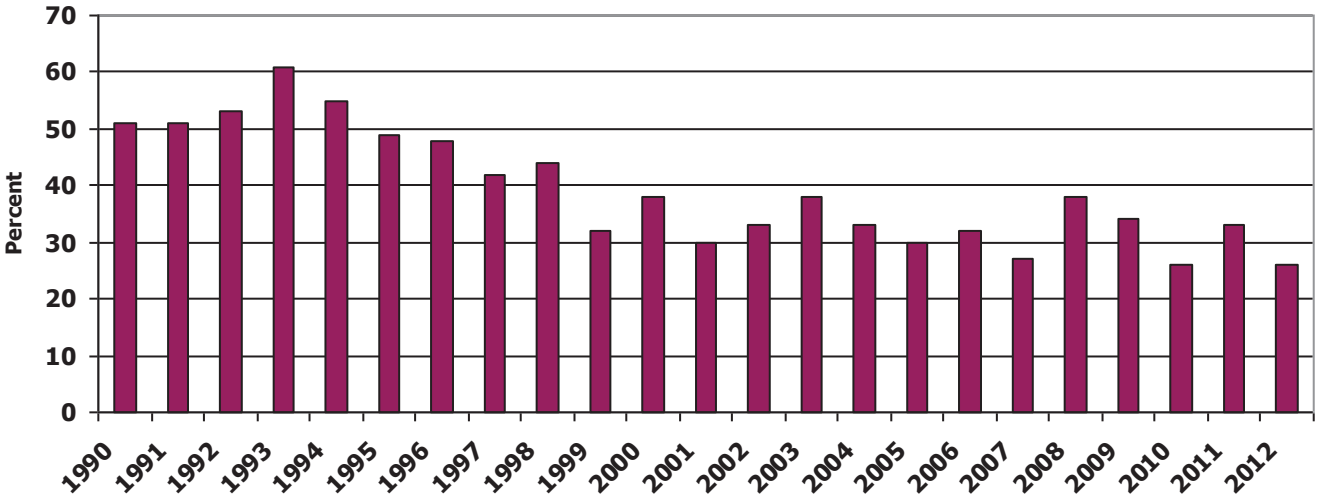
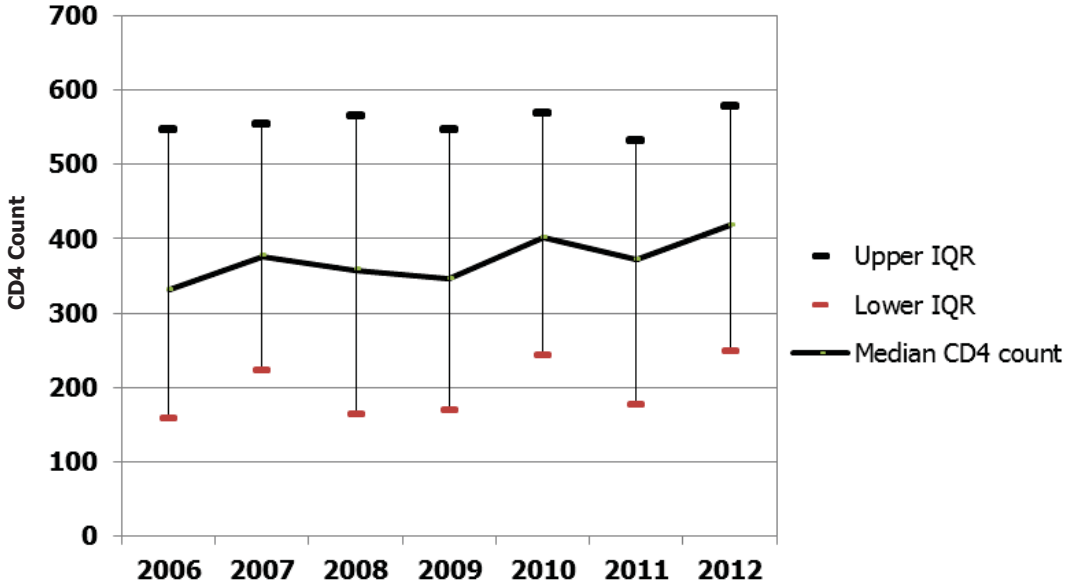


Figure 7: Trends in initial CD4+ T-lymphocyte count and inter-quartile range (IQR)



As shown in Figure 6, the percentage of individuals with newly diagnosed HIV infection diagnosed with AIDS within 12 months of first testing HIV positive has been roughly stable for over a decade. In 2011, 32% of all persons diagnosed with HIV infection, including 27% of MSM, 29% of IDU and 44% of heterosexuals were diagnosed with AIDS within 1 year of HIV diagnosis. In contrast (Figure 7), the median CD4 count at time of HIV diagnosis has gone up, from 331 in 2006-7 to 418 in 2011-12.

Increase access to care and improve health outcomes for all people living with HIV

Figure 8: Timely linkage to care (CD4 or viral load testing within 3 months of diagnosis), King County

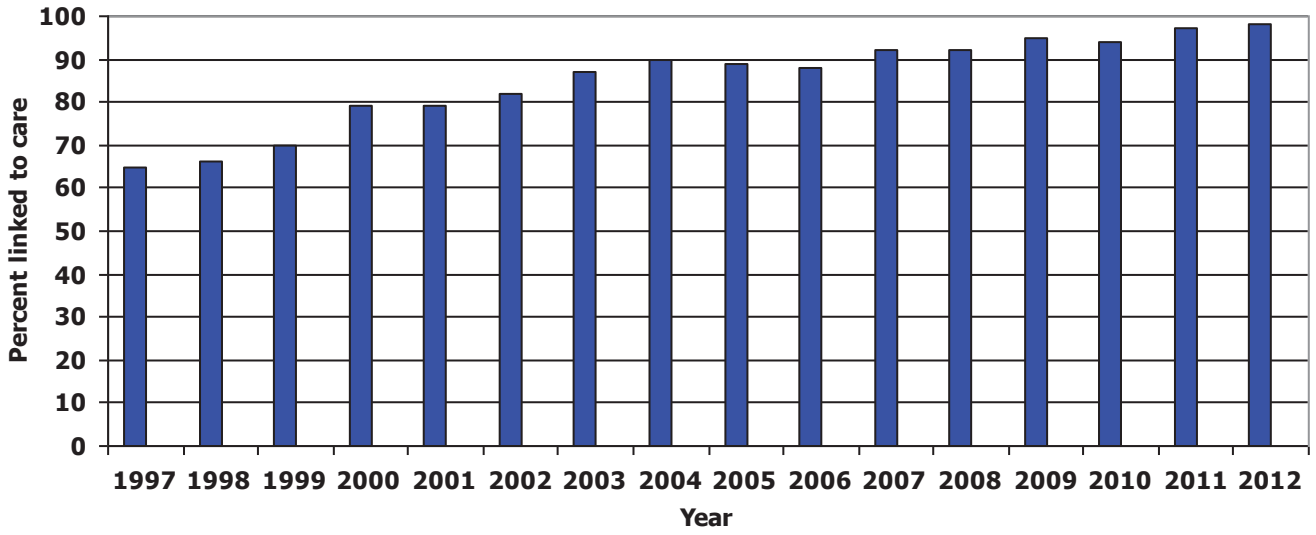


Figure 9a: Most recent CD4+ T-lymphocyte counts 2011-2012, King County, WA (based on 6,480 CD4 tests)

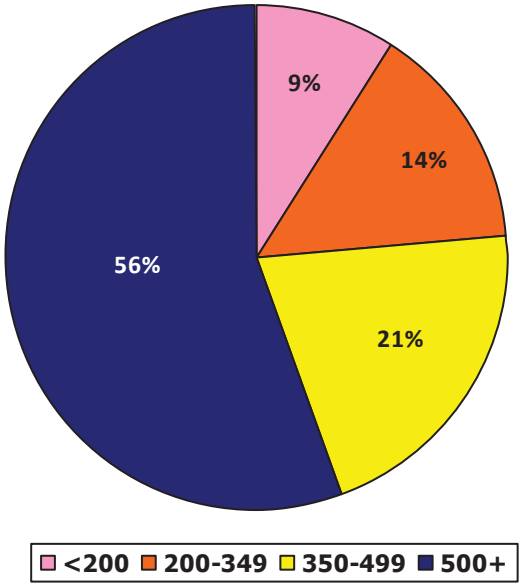


Figure 9b: Most recent plasma viral load 2011-2012, King County, WA (based on 5,740 viral load tests)

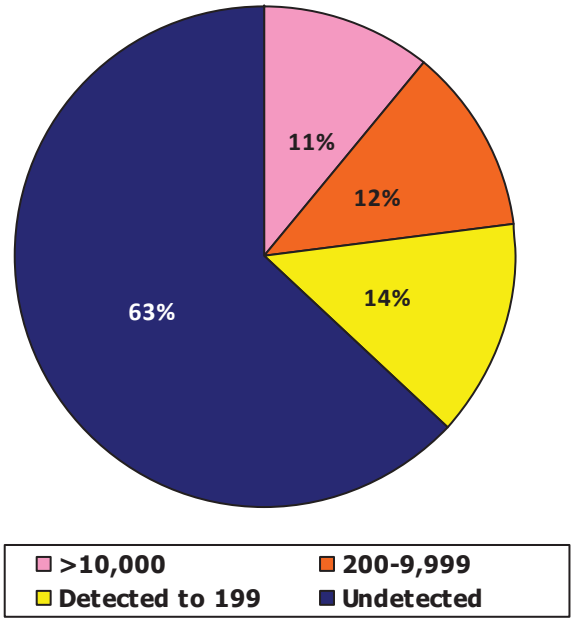


Figure 9c: Proportions with any reported labs in past year and undetectable viral load by current age

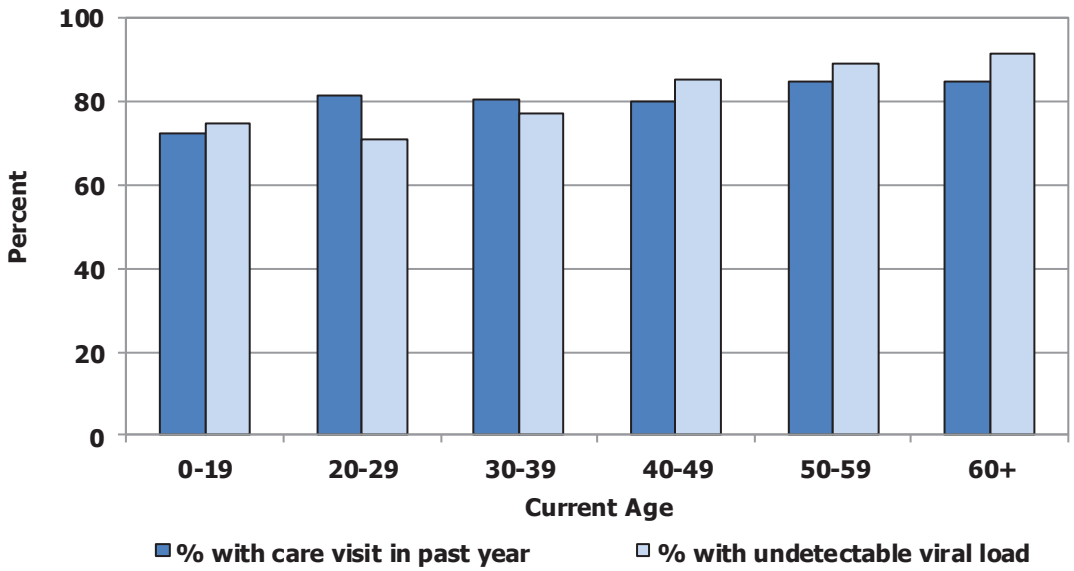
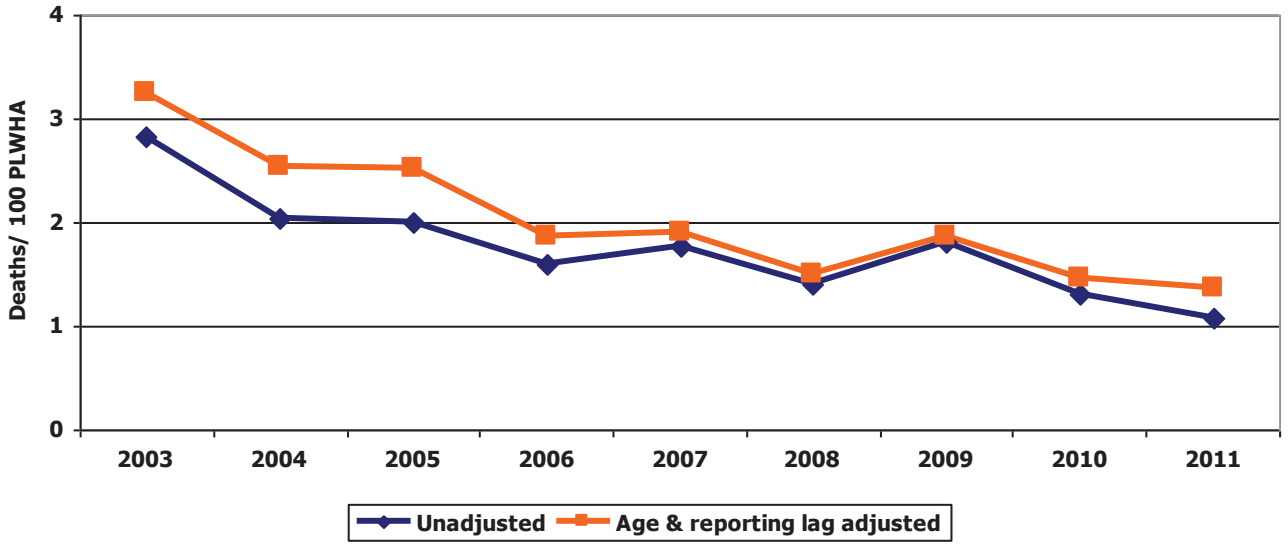


Figure 8 shows trends in linkage to care over time, as monitored by reported CD4 and viral load tests, with more than 95% of recently diagnosed cases receiving a CD4 or viral load monitoring test within three months of HIV diagnosis. The CD4 lymphocyte count is a measure indicating the strength of a patient's immune system. A normal CD4 count is about 1,000 cells/mm^3 (range 500-1,500 cells/mm^3), and persons with a CD4 count under 200 are defined as having AIDS. In 2011-12, 56% of PLWHA for whom laboratory data were available had a CD4 count over 500 cells/mm^3, and only 9% had a CD4 count under 200 cells/mm^3 (Figure 9a). During this same period, 63% of persons for whom laboratory data were available had an undetectable viral load, and an additional 14% had a detectable viral load under 200 copies (Figure 9b). Engagement with care and viral suppression were higher among older PLWHA (Figure 9c).

Figure 10: Unadjusted and adjusted (by reporting lag and age) death rates per 100 people living with HIV/AIDS in 2003 through 2011



Mortality rates among PLWHA have plummeted over the last decade. As shown in Figure 10, age adjusted mortality among PLWHA in King County has declined 58% over the last decade.

Reduce health disparities

Figure 11: HIV diagnosis prevalence among men who have sex with men (MSM) by race/ethnicity, and among non-MSM, non injection drug* users by race/ethnicity (Blacks/African Americans are stratified by U.S. or foreign birthplace)

Figure 11a: Prevalence of HIV diagnosis among MSM by race—MSM are estimated at 5.5% of men age 15 years and greater

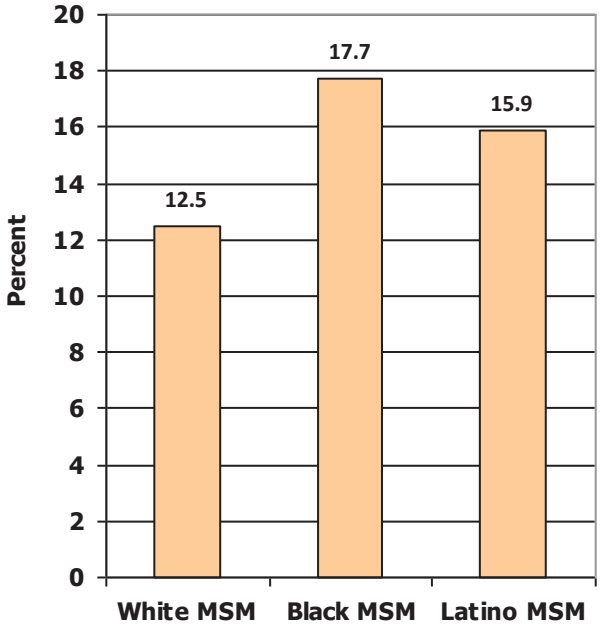
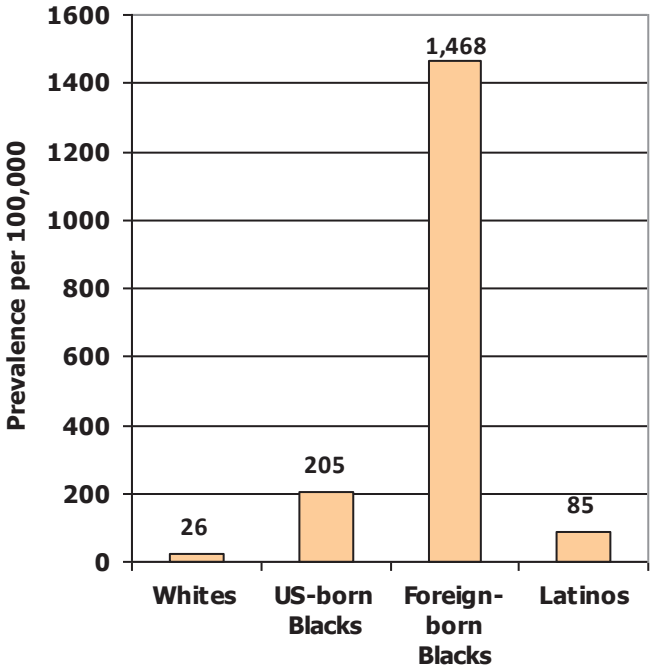


Figure 11b: Prevalence of non-MSM, non-IDU HIV diagnoses per 100,000 people at risk



* HIV diagnosis prevalence among injection drug users is estimated at 2-4%

In King County, HIV infection remains relatively rare among women and heterosexual men without a history of injection drug use, with fewer than 1 in 1,000 persons having diagnosed HIV infection. However, this prevalence varies markedly by race/ethnicity. Excluding cases occurring in MSM and persons with a history of injection drug use, the prevalence of diagnosed HIV infection is 8 times higher among African Americans (0.20%), and over 3 times higher among Hispanics (0.085%) than among Whites (0.026%). An estimated 1.5% of foreign-born Blacks living in King County have diagnosed HIV infection; in 2011-12, 12% of all new HIV diagnoses in King County occurred in foreign-born Blacks.

Figure 12a: HIV Care Cascade by gender for King County as of December 31, 2012

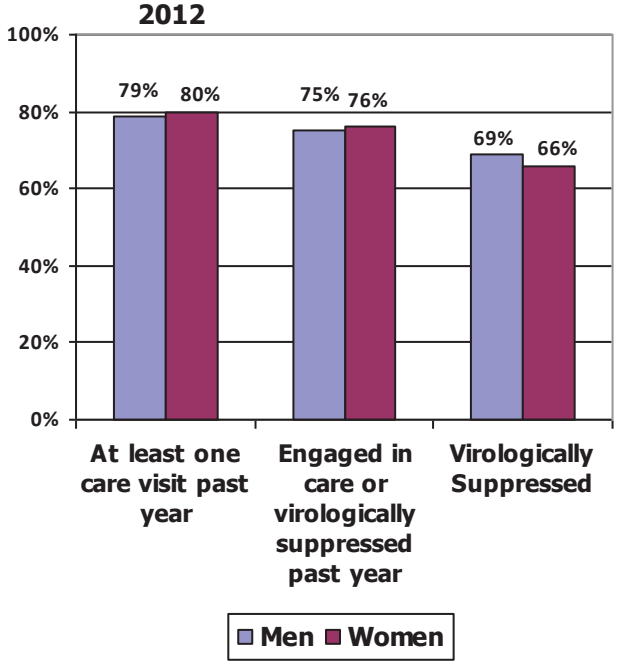


Figure 12b: HIV Care Cascade by race/ethnicity for King County as of December 31, 2012

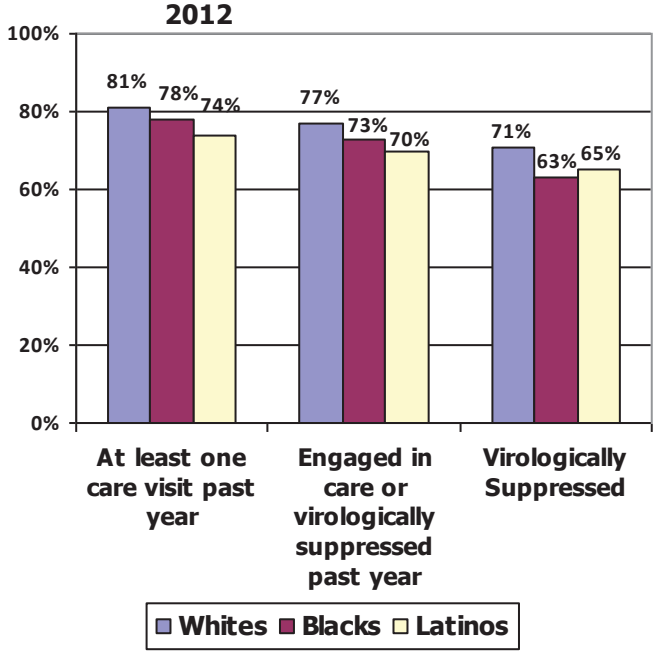


Figure 12c: HIV Care Cascade by birthplace for King County as of December 31, 2012

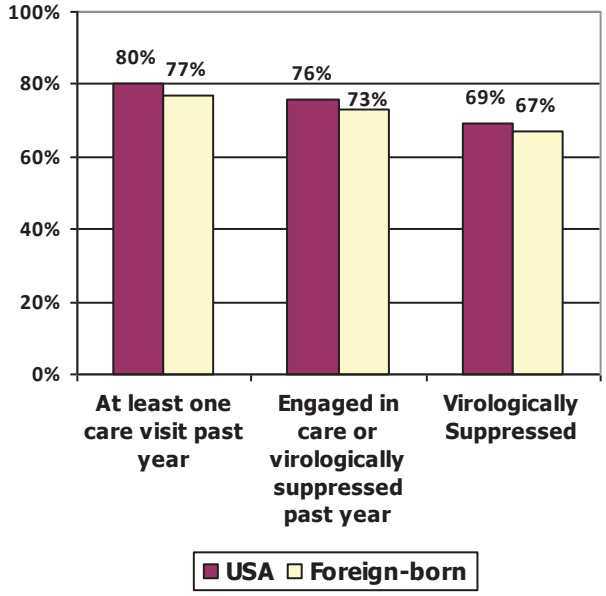
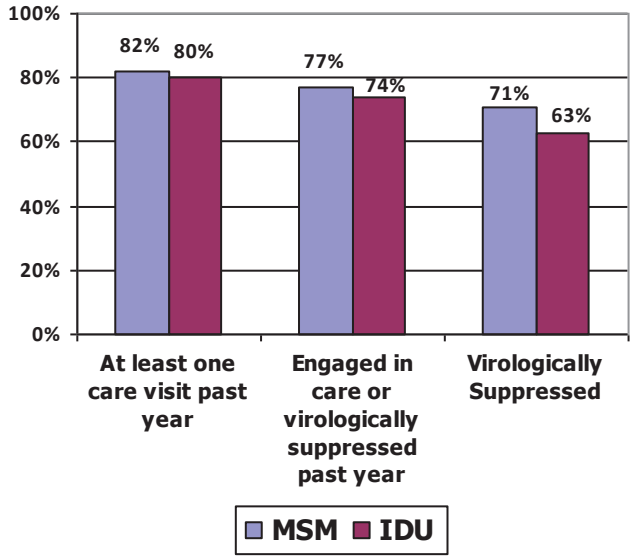


Figure 12d: HIV Care Cascade by HIV risk-men who have sex with men (MSM) and injection drug users (IDU) - for King County as of December 31, 2013



Figures 12a-d present data on the HIV care cascade stratified by gender, race/ethnicity, nativity and among MSM and IDU. Virologic suppression is approximately 11% lower among Blacks than among Whites and is 11% lower among IDU than among MSM. These disparities merit concerted efforts to ensure that all PLWHA receive the medical care they need. At the same time, it is worth noting that levels of viral suppression for all subgroups examined in King County are very much higher than for the U.S. as a whole[2].

Contributed by Matthew Golden and Susan Buskin

1. Millett GA et al. A way forward: the National HIV/AIDS Strategy and reducing HIV incidence in the United States. J Acquir Immune Defic Syndr. 2010 Dec;55 Suppl 2:S144-7
2. Hall, H.I., et al., *Differences in human immunodeficiency virus care and treatment among subpopulations in the United States.* JAMA Intern Med, 2013. **173**(14): p. 1337-44.

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

This article summarizes the status of the HIV and AIDS epidemics in King County, Washington through June 30, 2013, based upon reports of people living with AIDS or HIV infection.

Global and National Perspective

According to the World Health Organization, 35.3 million people worldwide were living with HIV or AIDS at the end of 2012, including 3.3 million children under 15 years of age.[1] On average, 0.8% of adults worldwide age 15-49 are infected with HIV. In 2012, an estimated 2.3 million persons acquired HIV infection, and 1.6 million deaths occurred.

At the end of 2010 there were an estimated 1.1 million HIV-infected people in the United States, including 16% who remain undiagnosed and unaware of their status.[2] CDC calculates approximately 47,500 new infections occurred in the US in 2010, with 21,278 deaths estimated in 2010.[2]

In 2011, the Seattle Metropolitan Statistical Area including King, Snohomish and Pierce counties, ranked 70th nationally for HIV cases with an annual estimated rate of 14.1 diagnosed cases per 100,000 population. The highest metropolitan rates in the country were in Miami, FL (54.0), New Orleans, LA (51.4), Baton Rouge, LA (50.5), and Jackson, MS (45.0).[3]

Trends in Diagnosis of HIV Infection

The number of new HIV diagnoses in King County has dropped to 309 per year (2005-2012) after being level at 350-400 new diagnoses 1997-2004 (see Figure 1 on page 9). In 2012 only 295 new diagnoses were reported; it remains unclear whether this decline is due to fewer new infections, delayed testing, or other factors. Because there are many fewer HIV-related deaths (<100) than diagnoses each year, the number of King County residents living with HIV/AIDS is increasing. For example, at the end of 2002 we estimated about 5,000 people living with HIV/AIDS (PLWHA) resided in King County and at the end of 2012, there were about 7,000 PLWHA living with HIV in King County.

Based upon data reported through June 2013, we compared the characteristics of persons diagnosed with HIV infection during 2004-2006, 2007-2009, and 2010-2012. 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 (**Table 1**).

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 three-year periods 2004 through 2012 a statistically significant increase in the proportion of cases occurred among men who have sex with men (up from 70% to 76% of the total) while declining among heterosexuals (13% to 8%). There was a decrease observed in Black males (from 15% to 11%) and an increase in the proportion of cases among persons born outside of the US (from 22% to 27%).

There was a statistically significant decrease in the proportion of King County residents age 30-49 years at diagnosis (from 67% to 54%), shifting toward increases among persons aged 0-29 years (24% to 31%), and those aged 50 and over (9% to 15%). 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+. As of the end of June 2013, this median age was 48.

The residence at diagnosis of HIV for King County residents has stabilized in the period 2004-12, the proportion of cases diagnosed among Seattle residents hovers around 73%, while South King County residents now make up 18% of new cases, and East/North King County residents continue to make up 9% of new cases. See **Figure 1** for a density map of King County residence (by zip code) for individuals diagnosed with HIV in King County 2010 through 2012. This map displays the largest number of diagnoses in the Downtown, Eastlake, and Capitol Hill neighborhoods of Seattle.

Injection drug use and methamphetamine use both contribute substantially to the local HIV epidemic (See figures 2a-2c). Methamphetamine use was reported by 16% of newly HIV diagnosed MSM in King County. Among non-MSM, 36% have a drug use history, including 33% reporting injection drug use and 11% methamphetamine use.

The overall perinatal transmission rate in King County and in Washington state is very low because of widespread maternal screening and effective anti-

retroviral 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 not diagnosed with HIV infection at the time of delivery. Several additional recent perinatal infections were among children born outside of the United States 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 monitor the prevalence of transmitted antiretroviral drug resistance and non-B subtypes among people newly diagnosed with HIV. About two-thirds of newly diagnosed cases are included in these projects. The data reveal several characteristics regarding the infection status of newly diagnosed individuals and of the types HIV of virus circulating within the local population:

- Approximately 44% of new HIV diagnoses are among persons likely infected within the preceding six months, based on data 2010-2012.
- About 14% of newly-diagnosed, treatment-naïve people have high-level resistance to one or more class of anti-retroviral drugs; this proportion has increased from 11% in 2007 to 18% in 2012. There has been an increase in non-nucleoside reverse transcriptase inhibitor (NNRTI) resistance over the past six years – from 9% in 2007 to 17% in 2012. About 1% of newly diagnosed individuals are resistant to two or more classes of drugs.
- About 11% of people recently diagnosed with HIV are infected with a non-B subtype of HIV-1. This proportion has increased from 10% in 2007 to 16% in 2012. Most of these non-B infections were among persons born in other countries.

Deaths among people with HIV

As of June 30, 2013 more than 4,900 King County residents with HIV infection have died. The total number of deaths among HIV-infected King County residents fluctuated between 70 and 140 annually from 1998 through 2012. Similar to the decrease in new diagnoses, 2010 through 2012 data portend a decrease in the numbers of deaths in recent years, although the decreases in deaths may become smaller in the future due to delays in the reporting of deaths.

Some deaths are a direct result of HIV, including some people who learn their HIV status late in the course of disease, and some who experience treatment failures. Recently, however, an increasing proportion of deaths are unrelated to HIV infection, or partially-related.[6,7]

Number of People Living with HIV in King County

The Washington State Department of Health has estimated that 11,500 to 12,700 state residents, including 7,200 to 8,000 residents of King County are living with HIV or AIDS.[5] As described in the HIV Statistics Tables 3-7 of this Epidemiology Report, as of June 30, 2013, there were 7,105 reported cases of people who lived here at the time of diagnosis and are presumed to be living. Approximately another 500-1,200 have not been diagnosed and do not know their HIV status.

However, after adjusting for substantial in-migration and out-migration based on investigation of current residence and medical care utilization, as of June 30, 2013, there are 6,395 people currently living with diagnosed HIV infection in King County. These cases are further described below.

Characteristics of People Living with HIV or AIDS

Table 2 presents the 6,395 reported cases currently residing in King County (diagnosed HIV prevalence), and an HIV prevalence rate based on 2010 (most current) population. The true HIV prevalence rates are about eight to 15% higher when including people who have not yet been diagnosed. The HIV prevalence rates vary widely between population groups but are highest among men who have sex with men (MSM – 11%), injection drug users (IDU – 2%), MSM who also inject drugs (MSM/IDU – 17%), and foreign-born Blacks (1.5%). These four groups combined account for about 89% of diagnosed infections in King County and are emphasized in HIV testing and prevention programs.

Eighty-nine percent of people living with HIV or AIDS in King County are male. Most, 64%, are White, 18% are Black, 11% Hispanic, 4% Asian/Pacific Islander (API), and 1% Native American & Alaska Natives (NA/AN). Compared with non-Hispanic Whites, the

prevalence rates are five times higher among foreign-born Blacks, twice as high among US-born Blacks, and 1.5 times higher among Hispanics.

Eight percent of cases do not have a reported behavioral exposure to HIV (using the standard CDC-defined categories plus re-assignment of women who deny injection drug use as heterosexuals, also called presumed heterosexual risk). 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 (including presumed heterosexuals), 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 71-83% of cases, and for 50-61% among Black or NA/AN men. MSM-IDU is the second most common exposure among White men (10%), Hispanic men (8%), and NA/AN men (28%). Foreign-born Blacks make up 28% 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 (17% of cases) or have a heterosexual partner who is IDU, bisexual, or is HIV-infected (78% of cases—including presumed heterosexuals). Heterosexual exposures account for approximately three-quarters or more of HIV cases in women regardless of race.

The place of birth for the 6,395 King County residents living with HIV was:

- 77% United States
- 9% Non-US North America, including Mexico and Canada
- 7% Africa or Middle East
- 3% Asia or Australia
- 3% South America, Central America, and the Caribbean
- 1% Europe

Due to a high HIV prevalence among foreign-born Blacks, King County has a number of special prevention interventions targeting foreign-born Blacks. Their risk profiles, language, cultural, and educational needs differ from those of their US-born counterparts. The majority of reported cases among foreign-born Blacks are due to heterosexual transmission (48%), or have no reported risk (38%), relative to 62% of US-born Blacks reporting MSM or MSM-IDU risk, and 12% reporting IDU.

Sixty-two percent of King County residents living with HIV are currently age 35-54 years, and 22% are at least age 55 years of age. Another 13% are age 25-34, and just 2% are age 20-24. Seventy-seven percent of HIV-infected individuals reside in Seattle, 9% on the Eastside or north of Seattle and Lake Washington, and 15% in South King County (**Figure 3**).

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, and to compare local metrics against the National HIV Strategy goals. As of June 30, 2013, we documented that 86% (5,461 of 6,395) of residents with HIV have received a recent (2012-13) CD4 or viral load laboratory result indicating they are accessing HIV medical care (Please see the preceding section of this issue). Among the 934 cases with no labs reported to Public Health in the past year, 39% had a lab reported in 2010-11, 38% before 2010, and 12% never had a lab reported. It is likely that many of those without labs since 2010 no longer live here but our information is outdated.

Among King County residents with recent lab results, the most recent reported CD4 result showed 9% had severe immune deficiency (CD4 under 200 cells), 35% had moderate immune deficiency (14% with 200-349 CD4 cells and 21% with 350-499 CD4 cells per microliter), and 56% had negligible or no immune deficiency (CD4 500 or over). The most recent reported viral load test result showed that 77% had no detectable viral load or a suppressed viral load of 200 or lower, and 23% had a detectable viral load.

Conclusions

King County has over 6,000 residents diagnosed with HIV infection, including people who moved here after diagnosis in another county or state, and excluding those we believe have moved away. Over 4,750 HIV-infected persons have died since 1982. The number of new HIV infections has declined to about 300 each year since 2005, of which about one-quarter were not diagnosed with HIV until they had already developed

AIDS. About 75-100 deaths 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. Nearly 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/or reside in Seattle. The proportion of cases is increasing among men who have sex with men, Hispanic males, and people under age 30 or over 50 years of age.

Contributed by Amy Bennett

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2. Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 Dependent Areas – 2011. *HIV Surveillance Supplemental Report 2013*; 18(No.5). Available at http://www.cdc.gov/hiv/library/reports/surveillance/. Published October 2013.
3. Centers for Disease Control and Prevention. Diagnosed HIV infection among adults and adolescents in metropolitan statistical areas—United States and Puerto Rico, 2011. *HIV Surveillance Supplemental Report* 2013;18(No. 8). http://www.cdc.gov/hiv/library/reports/surveillance/. Published October 2013.
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Table 1: Nine year trends in the characteristics of new HIV diagnoses, King County, WA 2004-2012

Characteristics	2004-2012 N = 2805	
	Statistical Trend*	%
HIV Exposure Category		
Men who have sex with men (MSM)	Increasing	70-76%
Injection drug user (IDU)	No change	5%
MSM-IDU	No change	10%
Heterosexual contact	Decreasing	13-8%
Sex & Race/Ethnicity		
Male	No change	87%
White Male	No change	55%
Black Male	Decreasing	15-11%
Hispanic Male	No change	13%
Female	No change	13%
White Female	No change	3%
Black Female	No change	7%
Hispanic Female	No change	1%
Race/Ethnicity		
White, non Hispanic	No change	58%
Black, non Hispanic	No change	18%
Hispanic	No change	14%
Asian or Pacific Islander	No change	6%
American Indian/ Alaska Native	No change	1%
Age at diagnosis of HIV		
0-19 years	Increasing	1-2%
20-29 years	Increasing	23-29%
30-39 years	Decreasing	40-31%
40-49 years	Decreasing	27-24%
50-59 years	Increasing	8-12%
60 + years	Increasing	2-3%
Residence		
Seattle	No change	73%
North and East King County	No change	10%
South King County	No change	18%
Place of birth, race, and exposure		
Born outside the US	Increasing	22-27%
Foreign-born Blacks	*No Change*	*9%*
Foreign-born who are not Black	*Increasing*	*12-18%*
Born in the US	Decreasing	78-73%
Native-born Blacks	*No change*	*9%*
Native-born who are not Black	*No change*	*64%*

* These trends are based on statistical Table 8 (page 9), for cases residing in King County and reported as of 6/30/2012

Table 2: Characteristics of King County, WA residents living with HIV or AIDS as of 6/30/2013

	Actual Reports		Diagnosed HIV Prevalence	
	Number Reported	Percent	2010[1] Population	Estimated Rate Per 100[2]
Total	6,395	100%	1,931,249	0.3%
Race/Ethnicity				
White, not Hispanic	4,054	64%	1,294,630	0.3%
Black, not Hispanic	1,176	18%	133,423	0.9%
Foreign-born Blacks	*493*	*8%*	*32,297*	*1.5%*
U.S.-born Blacks	*656*	*10%*	*101,126*	*0.6%*
Hispanic	715	11%	172,378	0.4%
Asian & Pacific Islander	254	4%	314,435	<0.1%
Native American or Alaska Native	52	1%	16,383	0.3%
Multiple Race	140	2%	N/A	N/A
Unknown Race	1	<1%	N/A	N/A
Sex & Race/Ethnicity				
Male	5,668	89%	962,090	0.6%
White Male	3,838	60%	644,928	0.6%
Black Male	781	12%	68,247	1.1%
Hispanic Male	664	10%	91,252	0.7%
Asian or Pacific Islander Male	220	3%	149,641	0.1%
Native American or Alaska Native Male	36	<1%	8,022	0.4%
Multiple or Unknown Race	127	2%	N/A	N/A
Female	727	11%	969,159	<0.1%
White Female	216	3%	649,702	<0.1%
Black Female	395	6%	65,176	0.6%
Hispanic Female	51	1%	81,126	<0.1%
Asian or Pacific Islander Female	34	<1%	164,794	<0.1%
Native American or Alaska Native Female	16	<1%	8,361	0.2%
Multiple or Unknown Race	14	<1%	N/A	N/A
HIV Exposure Category				
Men who have sex w/men (MSM)	4,357	74%	39,000	11.1%
Injection drug user (IDU)	280	5%	15,000	1.9%
MSM-IDU	550	9%	3,150	17.4%
Blood product exposure	20	<1%	Unknown	Unknown
Heterosexual contact[3]	656	11%	1,300,000	<0.1%
Perinatal exposure	41	<1%	Unknown	Unknown
Subtotal- known exposure	5,904	100%	1,909,297	0.3%
Undetermined/ other	*491*	*8%*	*N/A*	*N/A*
Current Age as of 6/30/2013				
0-19 years	40	1%	461,892	<0.1%
20-24 years	123	2%	129,822	<0.1%
25-34 years	849	13%	312,717	0.3%
35-44 years	1,599	25%	296,790	0.5%
45-54 years	2,347	37%	291,132	0.8%
55-64 years	1,156	18%	228,217	0.5%
65 years and over	279	4%	210,679	0.1%
Place of Birth				
U.S-born	4,904	77%	1,538,344	0.3%
Foreign-born	1,208	19%	392,905	0.3%
Unknown birthplace	283	4%	N/A	N/A

1. 2010 bridged-race populations are from U.S. Census Bureau as of 3/7/2012, except estimates of overall foreign-born and foreign-born Blacks are from U.S. Census Bureau 2005-2009 American Community Survey.
2. The HIV diagnosis rate is the total number of reported diagnoses divided by the population, and is presented as a percent. The true number infected including people who are not yet diagnosed, is estimated to be about 15% higher than this rate.
3. Includes presumed heterosexual cases (women who do not inject drugs but have had sex with men of unknown HIV status).

Figure 1: Map of recent HIV diagnoses (2010 through 2012) in King County

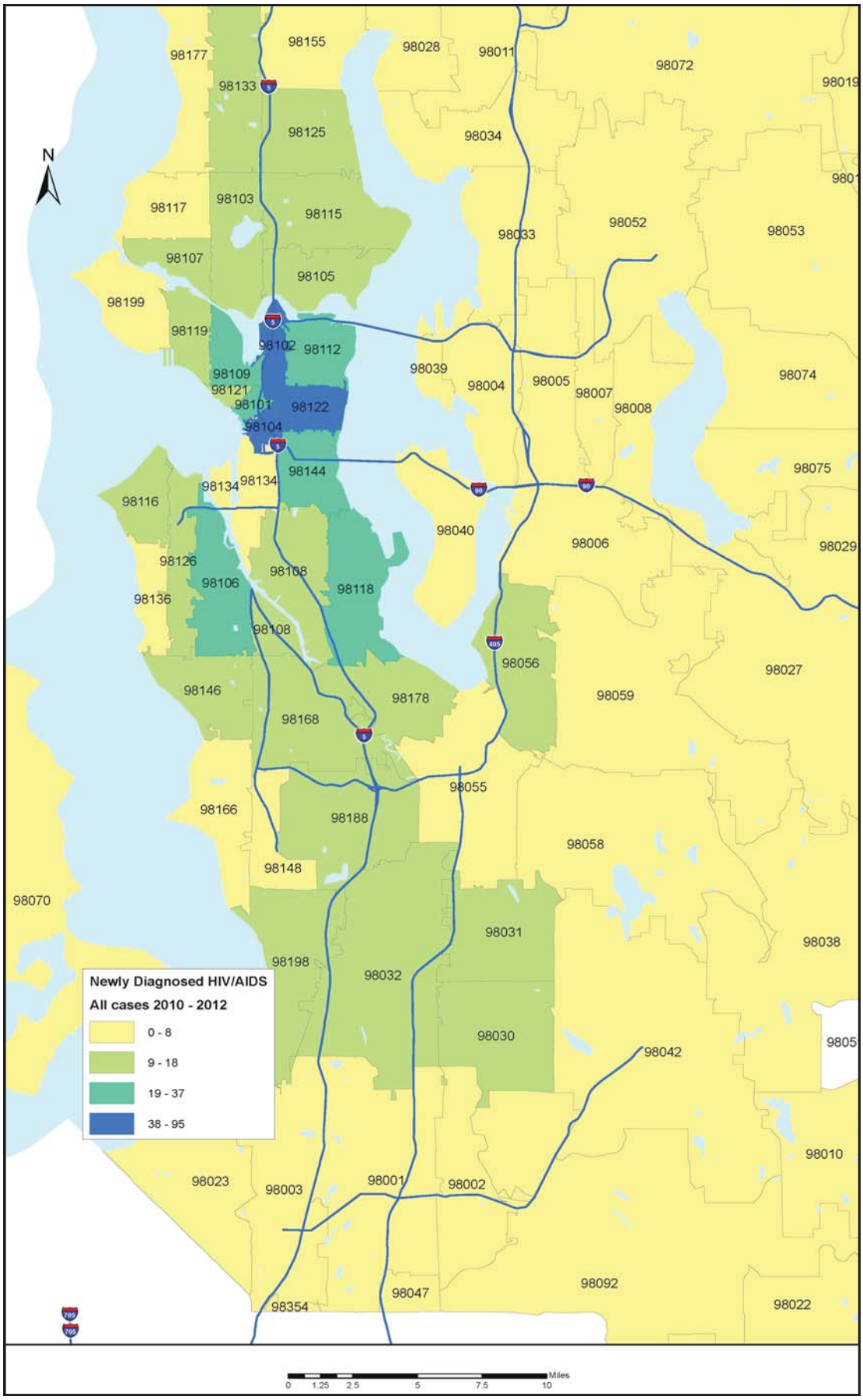


Figure 2a: Percent of newly diagnosed HIV cases with injection drug history (IDU) or recent methamphetamine (meth) use, King County, 2010-2012 (N=785)

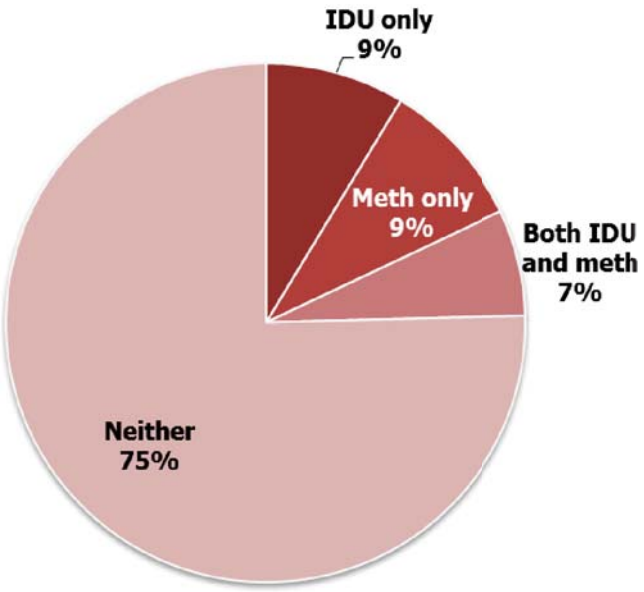


Figure 2b: Percent of newly diagnosed MSM cases with injection drug history (IDU) or recent methamphetamine (meth) use, King County, 2010-2012 (N=667)

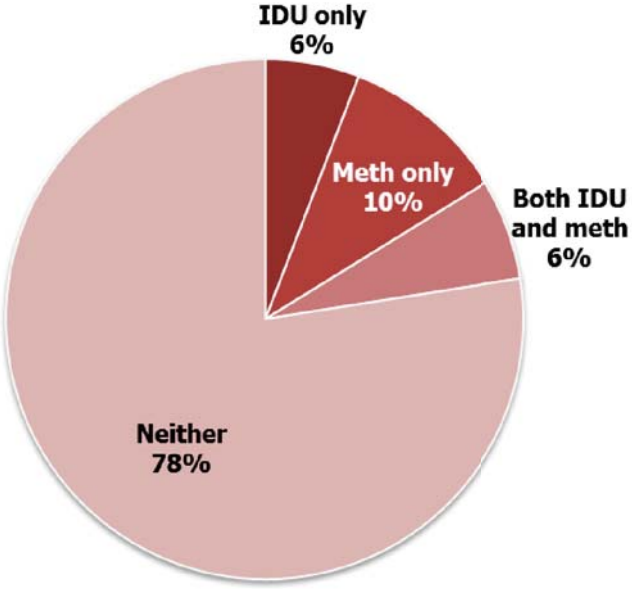


Figure 2c: Percent of newly diagnosed non-MSM cases with injection drug history (IDU) or recent methamphetamine use, King County, 2010-2012 (N=118)

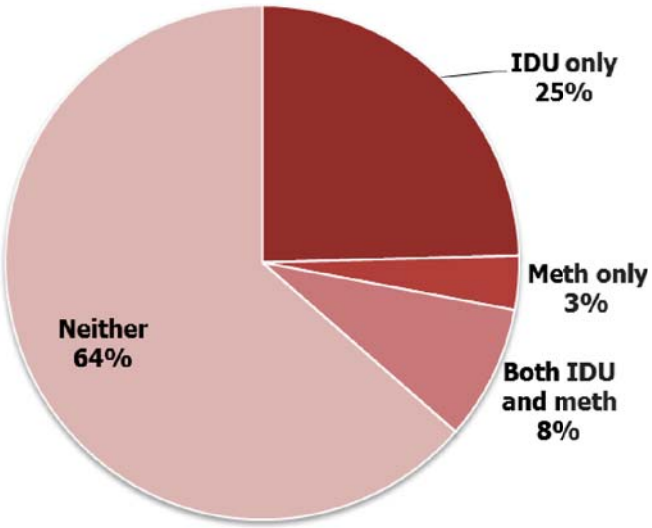
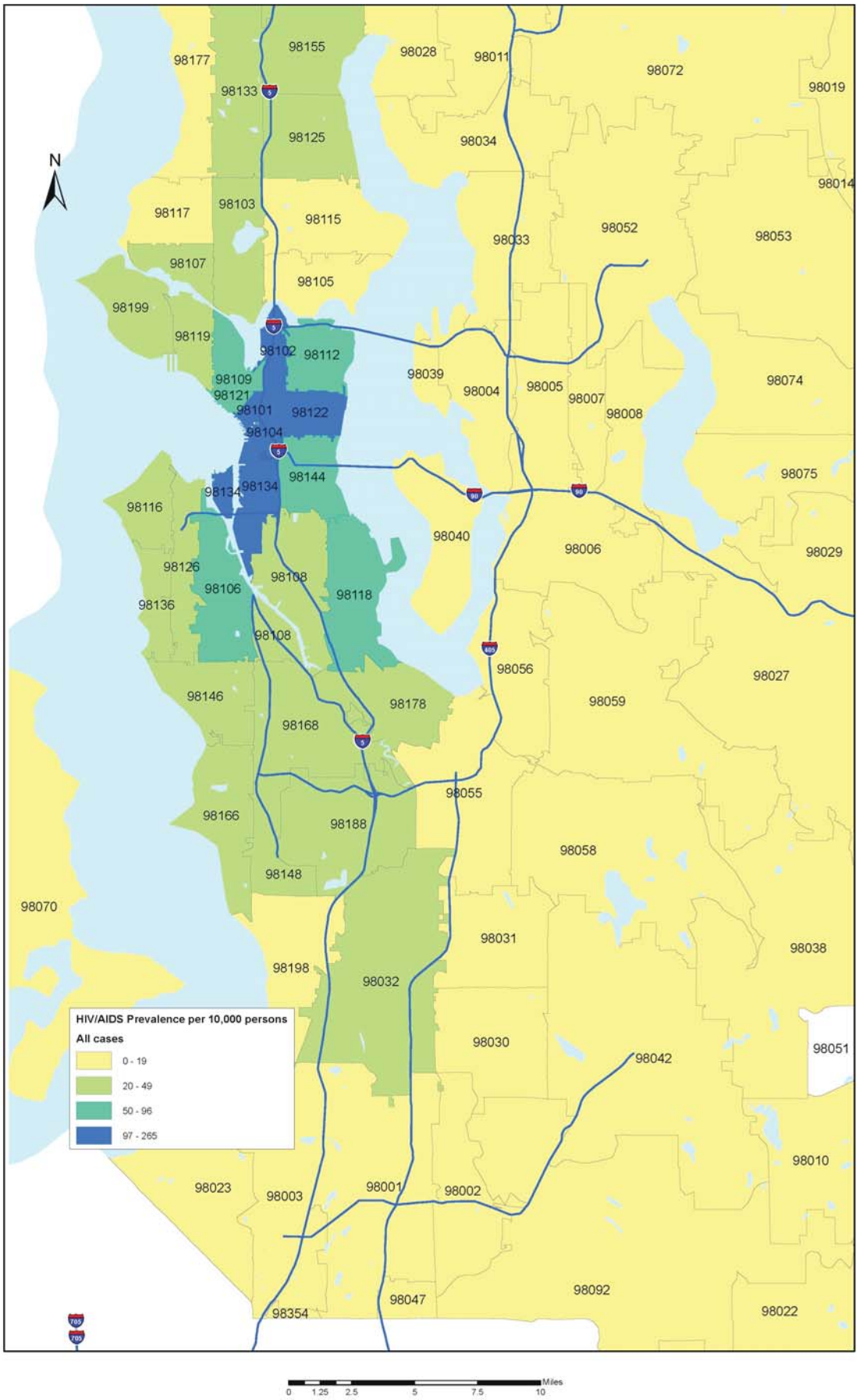


Figure 3: Map of individuals living with HIV/AIDS in King County as of June 2013



Formative Research on the HIV/AIDS Epidemiology Report

To help ensure our publications remain useful to our audience, in May 2013, sixteen individuals representing HIV/AIDS programs at Public Health – Seattle & King County (PHSKC), the Washington State Department of Health (DOH), and community organizations were interviewed to review key PHSKC HIV publications. Publications reviewed included the most recent semi-annual HIV/AIDS Epidemiology report jointly produced by PHSKC and DOH and the 2008 HIV/AIDS Epidemiology Profile for Community Planning. The purpose of the interviews was to elicit potential changes that could be implemented to improve the quality and usefulness of these reports. Interviewees included individuals from the HIV/AIDS Planning Council, the PHSKC HIV Prevention team, the DOH Infectious Disease Assessment Unit, health department disease intervention and research specialists, the Seattle Needle Exchange, Lifelong AIDS Alliance, and others.

Regarding content, interviewees suggested that the report include more information about demographics of newly diagnosed cases, HIV testing practices in the community, HIV-infected individuals not currently in care, methamphetamine use as a risk factor for HIV infection, and common comorbid health issues such as depression, smoking, and hepatitis C infection. Other suggestions were to represent more data as rates (numbers of cases per given population), to include more map displays of data, and to add age-adjusted mortality rates in order to accurately compare HIV-related mortality rates in King County to those in other geographic areas. In addition, those involved in HIV prevention requested data on "The Oval," an area that encompasses King, Snohomish, and Pierce counties; these three counties contain over 75% of people living with HIV in Washington State. However, the HIV/AIDS Planning Council, which allocates Ryan White funding for care services, works within a different geographical area – the Seattle Transitional Grant Area (TGA). The TGA includes King, Snohomish, and Island counties; representatives from the council asked that data specific to the TGA be presented in the report.

Based on this formative research, the following additions will be found in this issue of the HIV/AIDS Epidemiology report: (1) a summary of the past three cycles of the National HIV Behavioral Surveillance looking at characteristics of local individuals with HIV and at risk of HIV (men who have sex with men, injection drug users, and higher-risk heterosexuals), and especially their HIV testing histories; (2) in the HIV care cascade and annual summary sections, additions include information about HIV testing (publicly funded and provider characteristics of newly diagnosed cases), drug use history of newly diagnosed individuals, death rates, at-risk population sizes, and HIV prevalence rates for major HIV risk groups.

Finally, interviewees were asked to select several populations at risk for HIV to be featured in an upcoming community profile. The most-selected populations were men who have sex with men (MSM), people of color, and young people aged 15 through 29 years. Rather than creating a community profile which is a separate publication, we have included the 2013 fact sheets describing these three populations in this report, creating a joint Community Profile and Epidemiology Report. The MSM fact sheet includes HIV incidence rates for MSM compared to males overall; the proportion of recently diagnosed cases that are MSM or MSM who also inject drugs (MSM/IDU); race and age breakdowns for recently diagnosed cases; an HIV Care Cascade for MSM; risk behaviors and HIV testing practices among MSM; other STDs among MSM; and a map of new diagnoses among MSM by zip code. The People of Color fact sheet includes HIV diagnosis rates for different races; the proportion of new diagnoses in recent years that are people of color; exposure categories by race; racial disparities in the HIV Care Cascade; prevalence of HIV among different racial groups; and a map of new diagnoses among people of color by zip code. The Young People profile includes the number and percent of recent HIV diagnoses among young people; age group comparisons of gender, race, and exposure risk categories; rates of new HIV diagnoses among young people; HIV prevalence among young people; and a map of new diagnoses among young people by zip code.

Contributed by Rachael Lazar

A Comparison of African American Men who have Sex with Men (MSM) with a More General Group of MSM—Seattle Gay Pride Participants

Background

The racial disparity for HIV infection risk among Blacks in the United States is well documented. In 2010, Blacks represented roughly 13% of the U.S. population and 44% of all new HIV infections.[1,2,3] In 2009, the estimated HIV incidence rate for Blacks was 7.7 times higher than the rate for Whites.[4] The risk of HIV infection is highest for young Black men who have sex with men (MSM). This group represented over half of the estimated new infections in 2010.[5] A recent meta-analysis of these disparities found that Black MSM reported similar or less risky behavior relative to other MSM (e.g., greater condom use, fewer sexual partners, less drug use before sex, less unprotected anal intercourse [UAI] and recent HIV testing), but were nevertheless more than six times as likely to have undiagnosed HIV; eight times as likely to have a diagnosis of herpes simplex virus, syphilis, or gonorrhea; and three times as likely to test positive for HIV.[6] The same meta-analysis reported that HIV positive Black MSM in the U.S. were less likely to access and use highly active antiretroviral therapy (HAART) and achieve a suppressed viral load; and they were more likely to have a late HIV diagnosis and a CD4 count <200 cells per µL.

Similar racial disparities are apparent in King County. In 2010, Blacks represented 6.2% of the total population of King County, but made up 17% of those living with HIV/AIDS.[7,8] Average annual rates of new HIV diagnoses reported from 2005 to 2007 in King County were higher among Black residents (61.8 per 100,000) compared to White residents (14.5 per 100,000).[9]

The context underlying these disparate rates warrants greater attention. This report compares data on demographics, reported risk behaviors, and uptake of health services from two surveys: one that sampled Black MSM and one that sampled MSM of all races. The purpose of this analysis was to expand and develop local understanding of racial disparities pertaining to HIV in King County, thereby informing prevention planning, community outreach, and delivery of health services.

Methods

Data Collection

The Steam and Pride surveys utilized convenience sampling to recruit MSM to complete a brief questionnaire that asked about sexual health, risk behaviors, demographic characteristics, disclosure of HIV status, HIV-related stigma, health status and social factors that may influence access to healthcare. Both surveys were created and conducted by Public Health – Seattle & King County including the HIV/AIDS Planning Council.

The eligibility criteria for the Steam survey included identifying as Black, being male or transgender, and ever having sex with men. Eligible participants were asked to do a 25 minute, anonymous, interviewer-administered survey in person or by phone. Trained interviewers recruited and interviewed participants between September and November 2008 at a variety of public venues in King County, including parks, bars, social clubs, health clinics and community based organizations. Participants were paid $25 for their time.

The Seattle Pride Parade is an annual one-day event. The Pride Survey was first conducted in 2009, and has since been conducted annually at the Seattle Pride Parade. Parade spectators and participants who identified as a 'man who has sex with men' were eligible to complete the survey. Before and during the parade, trained interviewers approached and screened participants, conducted a five to ten minute interview, and provided a $5 coffee card incentive and health promotion materials. Interviews for Pride are self or interviewer-administered.

Analysis

Pride data from June 2009 to June 2012 were combined. For each survey, basic frequencies were calculated for demographic, sexual risk behaviors, HIV testing, HIV status, female sexual partners and stimulant use variables. The data were stratified by HIV status to compare behaviors among HIV negative and positive participants.

Results

Participant Characteristics

Table 1 compares the demographic characteristics of all Steam (n=368) and Pride 2009 – 2012 participants (n=1,173). More Steam participants were in the oldest age group (over age 50) compared to Pride (20% vs. 14%). A larger proportion of Pride participants were in the youngest age group (age 15 to 29) relative to Steam participants (38% vs. 28%). As expected – given the inclusion criteria – 98% of Steam participants reported being Black, African American, or multi-racial. The majority of Pride respondents identified as White (70%). A higher proportion of Steam participants reported a multiracial identity compared to Pride (8% vs. 4%). Fewer Steam participants indicated they were Latino/Hispanic than Pride (2% vs. 11%). The majority of Steam participants (71%) reported an annual income of <$30,000; the majority of Pride participants (60%) reported incomes exceeding $30,000. Pride participants reported higher education levels with one-fifth (20%) having more than a college degree, compared to 6% in Steam. One half of Pride participants and one-fifth of Steam completed college. The proportion of Steam participants having less than a high school education was almost three times the proportion of Pride (4% vs. 11%).

A smaller proportion of Steam relative to Pride participants identified as gay (57% vs. 85%). Proportionately, over three times as many Steam participants (30%) identified as bisexual compared to their Pride (8%) counterparts. Seven percent of Steam participants and 4% of Pride participants identified as straight. Roughly one-quarter of Steam participants (26%) were HIV positive compared to 12% in Pride.

Reported Sexual Behavior, Drug Use, and HIV Test-Seeking Behavior in the Past Year

Overall

A considerably larger proportion of Steam participants, relative to Pride participants, reported having sex with a female in the past 12 months (33% vs. 8%). Though a larger proportion of Steam respondents reported two or more anal sex partners (51% vs. 43%), the proportion of respondents reporting two or more unprotected anal intercourse (UAI) partners was comparable across surveys (18-19%). Proportionately more Steam respondents than Pride respondents reported using cocaine (17% vs. 10%), crack (25% vs. 2%), and methamphetamines (11% vs. 6%).

Among HIV-Negative Respondents

Sex with a woman was more commonly reported by Steam respondents (37% vs. 9%). A minority of respondents in both surveys (8%) reported ten or more sex partners in the previous year. A larger proportion of Pride respondents reported unprotected anal intercourse (UAI) with at least one partner (58% vs. 36%), though a slightly smaller proportion of Pride respondents reported 2 or more UAI partners (15% vs. 18%). UAI with a partner of unknown HIV status was more commonly reported by Steam (16%) relative to Pride (7%) respondents (**Table 2**).

Analyses of drug use found that 14% of Steam respondents used cocaine versus 10% in Pride; crack use among Steam was 9 times higher than the proportion reported by Pride survey participants (19% vs. 2%). Seven percent of Steam and 4% of Pride respondents who reported their HIV status as negative used methamphetamine.

Roughly two-thirds in both Steam (67%) and Pride (69%) had an HIV test in the previous 12 months.

Among HIV-Positive Respondents

Twenty-three percent of Steam and 2% of Pride positives reported sex with a female in the past 12 months. HIV-positive Pride participants reported, on average, a larger number of anal sex and UAI partners than their counterparts in the Steam survey: anal sex with 10 or more partners was reported by 11% of Steam and 27% of Pride respondents; UAI with 10 or more partners was reported by 7% of Steam and 18% of Pride respondents. Approximately 18% of MSM in both samples reported UAI with a partner with an unknown HIV status. One-fifth (20%) of Pride respondents indicated that they had UAI with an HIV-negative partner in the last 12 months; this variable was not measured in the Steam Survey. HIV-positive Steam participants reported higher usage of cocaine (24% vs. 12%) and crack (40% vs. 5%) and the same proportion of methamphetamine use (21-22%), compared to Pride.

Discussion

Comparisons of these data suggest considerable differences may exist between Black MSM and MSM as a whole in King County. Compared to Pride, Steam respondents had lower levels of educational attainment, lower incomes, and were more likely to report stimulant use. Over one-quarter of all Steam participants reported they were HIV-positive compared

to one-eighth of MSM participating in Pride. The majority of respondents across all of the studies had been tested for HIV.

In Steam, almost one-quarter of positives and over one-third of negatives reported sex with a female in the past 12 months. Over three times as many Steam participants identified as bisexual compared to Pride. These data may provide context to the disparate HIV rates observed in heterosexual women across racial groups.

Steam participants reported more stimulant use compared to Pride participants, a finding that is inconsistent with data presented in the meta-analyses conducted by Millett et al.[6] In both samples, serosorting was common. In addition, HIV-negative men in Steam reported higher proportions of UAI with partners of unknown status when contrasted with Pride.

There are many limitations with respect to the interpretation of these data. These samples were convenience samples and thus may not be representative of their respective larger populations. Pride takes place on one day, in one geographical location. Temporal trends rather than survey differences could have been responsible for some of the differences found. Steam data collection occurred throughout King County over a two month period at bars, parks, and social clubs using in-person and phone interviews. Steam data were all collected by interviewers – relative to some Pride data also being self-completed – leading to potential differences in response biases. In addition to the limitations of the data collection methodology, differences in sample size, interview length, and incentive levels in Steam and Pride should frame any interpretation of these data.

More robust local data are needed on MSM, with a particular focus on young Black MSM, who are the population at greatest risk for HIV. Education and income differentials among Steam and Pride participants suggest structural problems that will require enhanced coordination across programs and institutions as recommended by the National HIV/AIDS Strategy to address financial barriers to testing, diagnosis and treatment. National data clearly document a contradictory relationship of increased risk of acquiring HIV despite reporting similar or fewer risk behaviors for Black relative to other MSM. For women, the intersection of Black MSM who reported UAI with either positive or unknown status male partners and who identify as bisexual is both a potential HIV transmission risk and prevention focus. In summary, more rigorous study is needed regarding HIV risk behaviors and their implications for HIV transmission and health outcomes for Black MSM, their female sexual partners, and those with HIV.

Contributed by Winnie Alston and Julia Hood

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Table 1: Comparison of Steam and Pride participant characteristics[1]

	Steam 2008 n=368		Pride 2009 - 2012 n=1,173	
	No.	%	No.	%
Total	368	100%	1,173	100%
Sex				
Male	355	96%	1,158	99%
Transgender	13	4%	10	1%
Age				
15-29	103	28%	443	38%
30-39	92	25%	309	26%
40-49	98	27%	256	22%
>50	75	20%	162	14%
Race/Ethnicity[2]				
White	0	0%	822	70%
Black	332	90%	62	5%
Hispanic	8	2%	134	11%
Asian & Pacific Islander	0	0%	62	5%
Native American/Alaskan Native	0	0%	16	1%
Multiple Race	28	8%	48	4%
Education				
< High school	39	11%	47	4%
High school graduate	100	27%	160	14%
Some college/AA degree	155	42%	373	32%
College graduate	51	14%	351	30%
More than 4-year degree	22	6%	237	20%
Income				
Less than or equal to $30,000	263	71%	450	38%
Greater than $30,000	102	28%	698	60%
Sexual identity				
Straight	27	7%	43	4%
Gay	209	57%	1,002	85%
Bisexual	111	30%	88	8%
Other	21	6%	27	2%
HIV Status				
Positive	96	26%	129	12%
Negative	248	67%	938	87%
Don't know	24	7%	4	0%

1. Percentages may not sum to 100% due to missing data
2. All racial and ethnic categories are mutually exclusive.

Table 2: Reported sexual behavior, drug use, and HIV-testing seeking behavior in the past year among Steam and Pride respondents

	HIV-Negative Respondents				HIV-Positive Respondents			
	Steam Respondents (N=248)		Pride Respondents (N=938)		Steam Respondents (n=96)		Pride Respondents (n=129)	
	N	%	N	%	N	%	N	%
Sex with a Female Partner	92	37%	82	9%	21	23%	2	2%
Number of Male Anal Sex Partners								
0	35	14%	181	20%	32	34%	13	10%
1	77	31%	361	40%	22	24%	37	30%
2-4	94	38%	225	25%	25	27%	31	25%
5-9	21	9%	72	8%	7	8%	9	7%
10+	19	8%	71	8%	10	11%	34	27%
Number of Male UAI Partners								
0	159	64%	346	42%	59	61%	39	33%
1	45	18%	359	43%	14	15%	31	26%
2-4	34	14%	89	11%	14	15%	17	15%
5-9	6	2%	18	2%	2	2%	9	8%
10+	4	2%	20	2%	7	7%	21	18%
Serodiscordant UAI								
No	223	90%	796	94%	N/A	N/A	85	72%
Yes	7	3%	33	4%	N/A	N/A	26	20%
Don't know	18	7%	18	2%	N/A	N/A	7	5%
UAI with Unknown HIV Status Partner								
No	200	81%	765	91%	79	82%	99	81%
Yes	39	16%	67	8%	14	15%	22	18%
Don't know	9	4%	13	2%	3	3%	1	1%
Reported Drug Use								
Cocaine	34	14%	92	10%	23	24%	15	12%
Crack	47	19%	17	2%	38	40%	6	5%
Methamphetamines	17	7%	40	4%	20	21%	27	22%
Last Reported HIV Test								
>12 months ago	83	33%	285	31%	N/A	N/A	N/A	N/A

Abbreviations: UAI = Unprotected Anal Intercourse; N/A = Not Available

Summary of the 2013 Pride Survey Data

Background

Men who have sex with men (MSM) comprise 78% of persons living with HIV (PLWH) in King County. To inform prevention initiatives that target this key population, Public Health – Seattle & King County (PHSKC) conducts an annual survey at the Seattle PRIDE parade, an event that draws thousands of participants and spectators, many of whom are MSM. Though this survey relies upon convenience sampling, it provides insight into the current profile of MSM in King County. To describe HIV risk-related behaviors among MSM in King County, we summarize data collected at the 2013 PRIDE parade.

Methods

Data were collected 6/30 before, during, and after the Seattle Pride parade. Nineteen trained interviewers, disbursed along the parade route, approached parade participants and spectators, briefly explained the purpose of the survey and the $5 coffee card incentive, and asked whether the person "*identified as a man who has sex with men.*" Persons who expressed interest in participating and answered "*YES*" to the screening question were offered the questionnaire, which could be interviewer- or self-administered. The 5 -10 minute survey asked questions pertaining to demographics, risk behaviors, knowledge and perceptions, and health service utilization. HIV-negative respondents were asked additional questions on HIV testing and pre-exposure prophylaxis (PrEP); HIV-positive respondents were asked questions pertaining to their health status and health care usage. In this report, we present tallies and proportions of a wide variety of survey items.

Results

Three hundred and sixty-six MSM participated in the 2013 Pride Survey. Approximately half (51%, n=178) of the surveys were interviewer-administered.

Respondent Characteristics

The mean age was 34 (range 15 to 73). Two percent of respondents reported they were transgender. All respondents had completed high school and 44% of respondents had attained at least a 4-year college degree. Whites, followed by Hispanics, comprised the largest racial/ethnic groups (73% and 11%, respectively). A quarter of respondents earned less than $15,000 in 2012. The majority of respondents (82%) identified as gay and 12% identified as bisexual. A small proportion (7%) reported that they were married to a man and an additional 21% stated they were in a committed relationship. Half of the sample were current- or ex-smokers. A quarter of the sample did not have health insurance; a similar proportion did not have a regular health provider. Of those who knew their HIV status, 11% were HIV-positive.

Reported Drug Use and Sexual Behavior in the Previous Year

Twenty percent of respondents reported injecting drugs and/or using one of the following: methamphetamines, cocaine, crack, heroin, or poppers. Poppers were the most commonly used drug, with 13% of all respondents reporting that they used poppers in the past year. Roughly the same proportion of respondents – 5% – reported injecting drugs, using methamphetamines, or using cocaine.

The majority of respondents (81%) reported having one or more male sex partner in the past 12 months; 9% reported having male and female sex partners. Of respondents who reported new sex partners in the past 12 months, 61% reported meeting partners through the Internet, 54% reported meeting partners through friends and family, 38% met partners through a smart phone application, 30% met partners at bars and clubs, 13% met partners at a bathhouse, and 8% met partners at sex parties. Roughly half of the respondents reported two or more male anal sex partners in the prior 12 months.

Unprotected anal intercourse (UAI) was reported by 63% of respondents, with 26% of respondents reporting two or more male UAI partners. Data on serodiscordant UAI was missing in 15% of the surveys. Excluding missing data, the proportion of HIV-negative respondents who reported UAI with a partner of unknown or positive HIV status was 7% and 5%, respectively. Nearly half of HIV-positive respondents (48%) reported having UAI with a partner who was HIV-negative; nearly one third of HIV-positive respondents (32%) reported UAI with a partner of unknown status. Of respondents who had a new sex partner in the prior 12 months, 13% reporting never or

sometimes disclosing their HIV status to new partners. Seventy-three percent of respondents indicated that they always made decisions about condoms and 31% indicated that they always made decisions about having oral sex (only) based upon the HIV status of their partners.

STD and HIV Testing

Just over half of respondents reported having sought a gonorrhea, chlamydia, and/or syphilis test in the past 12 months. Of those who had sought STD testing, 19% reported a positive test result. Only 12% of respondents indicated that they had *never* been tested for HIV. Among HIV-negative respondents, less than one-quarter (23%) reported no HIV tests in the prior two years. In contrast, 40% of respondents reported three or more tests in the prior two years. A large proportion of HIV-negative respondents (30%) reported having sought an HIV test in the prior three months. The most common reasons given for seeking one's last test was "routine testing" and "considered oneself at risk for HIV," reported by 55% and 30% of respondents, respectively. Just over half of respondents indicated that their last HIV test occurred in a clinic or hospital setting. The other half sought testing at a community organization (15%), Gay City Wellness Center (11%), the STD clinic at Harborview Medical Center (9%), or some other venue (13%). Ten percent of respondents reported that they had ever sought HIV testing because they experienced symptoms of acute HIV infection. Seven percent of respondents reported ever using a home HIV test.

Knowledge and Perceptions

The majority of respondents (83%) thought it was easy to get free condoms. Only one-third of respondents correctly answered the following question, *"Do you think people on HIV medicines are less likely to give HIV to their sex partners? [Answer=Yes]."*

HIV-negative respondents were asked a series of questions pertaining to HIV testing and pre-exposure prophylaxis (PrEP). When asked *'when do you think you should test for HIV?," 81*% of respondents answered *"on a regular schedule*." Regarding the ideal frequency of testing, 36% and 38% of respondents thought they should test every 3 months and 6 months, respectively. Only one-quarter of respondents had heard of the *Find Your Frequency* campaign.

Seventeen percent of respondents currently receive text or email reminders about HIV/STD testing; 20% of respondents would like to receive text or email reminders about HIV/STD testing. Almost one-third of respondents (32%) had heard of PrEP; only 4% had actually taken PrEP. Regarding willingness to take PrEP, 28% of respondents indicated that they were willing, 41% were 'possibly' willing, and 31% were unwilling to take PrEP.

Health-Related Measures among PLWH

All respondents living with HIV had seen their HIV care provider within the past year; 42% had seen their HIV care provider within the past 3 months. The majority of respondents (91%) reported being on antiretroviral treatment. Nearly two-thirds of PLWH reported CD4 counts over 500 cells/µL; 84% reported that they had an undetectable viral load; and 44% reported that they had UAI because they had an undetectable viral load.

Discussion

Pride survey data provides local prevention planners with annual information to monitor the profile of MSM in King County. However, there are a number of limitations associated with these data. The survey relies upon convenience sampling, thus limiting the sample's representativeness of the MSM population in Seattle and King County. Secondly, data quality might have been detrimentally affected by the challenges posed by completing the survey in a community setting; data quality may have systematically varied according to whether the survey was self- or interviewer- administered. Third, many of the variables assessed may suffer from social desirability and/or recall biases.

In spite of these limitations, analysis of Pride Survey data informs program managers on how to better tailor programs and services for MSM; it also provides data for health researchers on emerging issues that need additional assessment. More in-depth analyses of Pride 2013 data will be included in future editions of the *Washington State & King County HIV/AIDS Epidemiology Report*.

Contributed by Julia Hood

1. 2012 Epi Report, 2nd Half, p. 4

Table 1: Characteristics of 2013 Pride Survey respondents, Seattle, WA (2-366)

	n (%)
Age (N=364)	
15-24	105 (29)
25-34	109 (30)
35-44	67 (18)
45-54	56 (15)
≥55	27 (7)
Sex (N=346)	
Male	339 (98)
Transgender	7 (2)
Educational Attainment (N=352)	
HS Graduate/GED	58 (17)
Some college/vocational school	92 (26)
2-year college degree	46 (13)
4-year college degree	97 (28)
More than a 4-year college degree	59 (17)
Race/Ethnicity (N=359)	
White	264 (73)
Hispanic	40 (11)
Asian	19 (5)
Black	12 (3)
Other race	8 (2)
Mixed race	20 (6)
Gross income in 2012 (N=359)	
Less than $15,000	93 (26)
$15,000 - $30,000	80 (22)
$30,001 - $50,000	78 (22)
$50,001 - $100,000	80 (22)
More than $100,000	28 (8)
Sexual Identity (N=359)	
Gay	298 (82)
Bisexual	45 (12)
Queer	10 (3)
Other	9 (3)
Currently married to a man (N=361)	
Yes	24 (7)
No, but in a committed relationship	77 (21)
No	260 (72)
Smoking status (N=356)	
Never-smoker	180 (51)
Ex-smoker	75 (21)
Current smoker	101 (28)
Currently has health insurance (N=359)	272 (76)
Has a regular health care provider (N=359)	265 (74)
HIV Status (N=344)	
Positive	37 (11)
Negative	307 (89)

Abbreviations: N=Number of respondents who answered question; n=Number of responses for each category

Table 2: Reported drug use and sexual behavior in the prior 12 months among 2013 Seattle Pride survey (n=366)

	n (%)
Reported any drug use* (N=363)	
No	289 (80)
Yes	74 (20)
Reported use of:	
Poppers	46 (13)
Viagra/Cialis/Levitra	37 (11)
Methamphetamines	19 (5)
Injection drugs	19 (5)
Cocaine	16 (5)
Heroin	11 (3)
Crack	6 (2)
Gender of recent sex partners in the past 12 months (N=359)	
Women only	13 (4)
Men only	285 (81)
Both	33 (9)
Neither	20 (6)
Respondents who met a new male sex partner in past 12 months reported meeting partner(s) through (N=239):	
Internet	145 (61)
Friends and family	129 (54)
Smart phone application	91 (38)
Bars/clubs	72 (30)
Bathhouse	32 (13)
Sex parties	20 (8)
Reported number of male anal sex partners in the past 12 months (N=335)	
0	53 (16)
1	120 (36)
2-4	88 (26)
5-9	39 (12)
10+	35 (11)
Reported number of male partners with whom one had unprotected anal intercourse (UAI) in the past 12 months (N=332)	
0	123 (37)
1	123 (37)
2-4	55 (17)
5-9	15 (5)
10+	16 (5)

*Any drugs use = reported use of injection drugs, methamphetamines, cocaine, crack, heroin, or poppers

Table 3: Reported behaviors related to serosorting in the last 12 months, 2013 Seattle Pride Survey (n=366)

	n (%)
ΔHIV-negative respondents reported having UAI with partner(s) of the following HIV status (n=260):	
Negative	149 (57)
Unknown	18 (7)
Positive	12 (5)
N/A – no UAI in past 12 months	105 (41)
ΔHIV-positive respondents reported having UAI with partner(s) of the following HIV status (n=31):	
Negative	15 (48)
Unknown	10 (32)
Positive	21 (68)
N/A – no UAI in past 12 months	9 (29)
Among respondents with a new partner in the past 12 months, disclosure of one's HIV status with a new sex partner occurred (n=276):	
Never	22 (8)
Sometimes	15 (5)
Always	239 (87)
Decisions regarding condom use were based upon partner's HIV status (N=315)	
Never	68 (22)
Sometimes	18 (6)
Always	229 (73)
Decisions regarding having oral sex (only) were based upon partner's HIV status (N=324)	
Never	164 (51)
Sometimes	61 (19)
Always	99 (31)

Δ Percentages do not sum to 100%, as the categories are not mutually exclusive; respondents with more than one UAI partner could report multiple statuses for UAI partners. Note: 15% of surveys were missing data on serostatus of UAI partners.

Table 4: Reported STD and HIV testing, 2013 Seattle Pride Survey (n=366)

	n (%)
STD test* in the prior 12 months (N=354)	181 (51)
STD diagnosis, among respondents who sought testing in the prior 12 months (N=179)	34 (19)
Never been tested for HIV (N=359)	42 (12)
Number of HIV tests in the past 2 years, among HIV-negative respondents (N=318)	
0	73 (23)
1	58 (18)
2	62 (20)
3-4	66 (21)
≥5	59 (19)
Months since last HIV test, among HIV-negative respondents (N=306)	
<3	91 (30)
3-5	20 (7)
6-11	90 (29)
12+	63 (21)
Never tested	42 (14)
Reason(s) for seeking last HIV test (N=292)	
Routine testing	161 (55)
Considered oneself at risk	89 (30)
Provider recommended testing	27 (9)
Someone else recommended testing	10 (3)
For a study	8 (3)
Had STD symptoms	8 (3)
New partner	6 (2)
Had symptoms of acute HIV	3 (1)
Venue of last HIV test (N=230)	
Clinic/hospital	118 (51)
Community organization	35 (15)
Gay City Wellness Center	26 (11)
HMC STD Clinic	21 (9)
Health department	10 (4)
Other	7 (3)
Bathhouse	5 (2)
Home testing	5 (2)
School Health Center	3 (1)
Ever tested because had symptoms of acute HIV (N=353)	35 (10)
Ever used a home HIV test (N=353)	24 (7)

*STD tests include chlamydia, gonorrhea, or syphilis test

Table 5: Knowledge and perceptions regarding HIV-related services/programs, 2013 Seattle Pride Survey (n=366)

	n (%)
Easy to get condoms (N=353)	
Yes	292 (83)
No/Don't know	61 (17)
"Do you think people on HIV medicines are less likely to give HIV to their sex partners?" (N=353)	
Yes	118 (33)
No	179 (50)
Don't Know	61 (17)
Among HIV-Negative or HIV-Status Unknown Respondents (n=329):	
When should go for testing (N=323)	
On a regular schedule	261 (81)
Between new partners	111 (34)
Have HIV symptoms	48 (15)
After high risk exposure	70 (22)
How often should you get tested? (N=321)	
Every 1-2 months	3 (1)
Every 3 months	116 (36)
Every 6 months	123 (38)
Every 12 months	59 (18)
Every 24 months	3 (1)
'It depends'	17 (5)
Have you heard of the *Find Your Frequency* campaign? (N=317)	
No	241 (76)
Yes	76 (24)
Have been on website	32/76 (42)
Have not been on website	28/76 (37)
Skipped website question	16/76 (21)
Currently receives email/text message reminders about HIV/STD testing (N=318)	55/318 (17)
Would like to receive email/text message reminders about HIV/STD testing (N=317)	62 (20)
Has heard of PrEP (N=326)	105 (32)
Has taken PrEP (N=315)	13 (4)
Would be willing to take PrEP (N=323)	
No	101 (31)
Yes	90 (28)
Possibly	132 (41)

Table 6: Health-related measures, 2013 Seattle Pride Survey (n=37)

	n (%)
Months since respondent's last HIV care visit (N=33)	
<3	14 (42)
3-5	11 (33)
6-8	5 (15)
9-12	3 (9)
CD4 Count (N=28)	
<200 cells/μL	1 (4)
200-499 cells/μL	9 (32)
≥500 cells/μL	18 (64)
Currently on HIV treatment (N=32)	
No	3 (9)
Yes	29 (91)
Last viral load test was undetectable (N=32)	
No	3 (9)
Yes	27 (84)
Don't know	2 (6)
UAI because VL was undetectable (last 12 months) (N=32)	
No	18 (56)
Yes	14 (44)

Seattle and King County Quarterly STD Report

STD Case Counts

Table 1: King County STD morbidity

	2012		2013	
	2012 Q2	YTD	2013 Q2	YTD
Gonorrhea (GC)	332	672	386	866
GC: MSM*	180	374	206	503
Urethral GC	69	123	75	176
Rectal GC	66	154	71	204
Pharyngeal GC	80	183	94	244
GC: Women^	83	160	96	187
GC: MSW^†	51	90	64	133
Chlamydia (CT)	1656	3302	1663	3440
CT: MSM	246	464	257	549
Urethral CT	90	173	95	204
Rectal CT	148	285	161	349
CT: Women^	989	2000	1037	2110
CT: MSW^	316	625	297	614
Syphilis‡	127	250	125	217
Primary and secondary	63	123	40	77
Early latent	43	76	47	76
Late + unk duration	20	49	38	64
Early syphilis: MSM	92	177	80	135
Early syphilis: Women	3	3	0	4
Early syphilis: MSW	5	9	4	7
Congenital syphilis	1	2	0	0

* Men who have sex with men
† Men who have sex with women
^ Genital tract infection
‡ Total cases (all stages)

Table 2: King County STD morbidity*

	2011		2012	
	2012 Q1	YTD	2013 Q1	YTD
Total^	75	75	72	72
MSM	51	51	50	50
Women	10	10	11	11
MSW	8	8	4	4

* Data shown for prior quarter due to reporting delay
^ Column may not equal total due to missing sexual preference data

Trends in STD Morbidity

Figure 1: Quarterly King County STD Morbidity, women and MSW

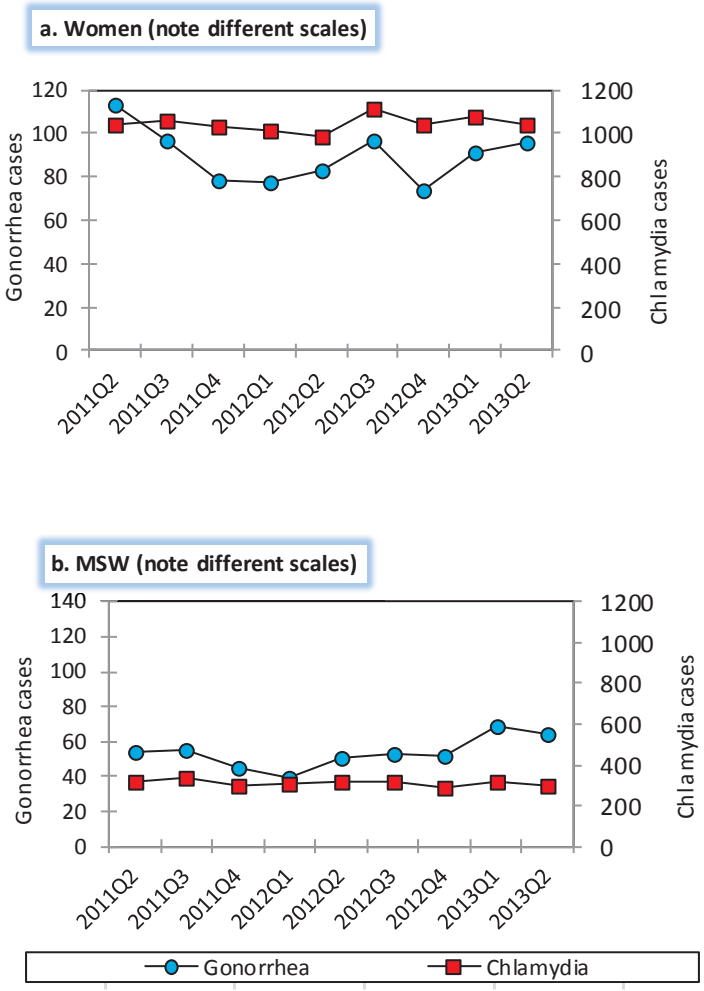
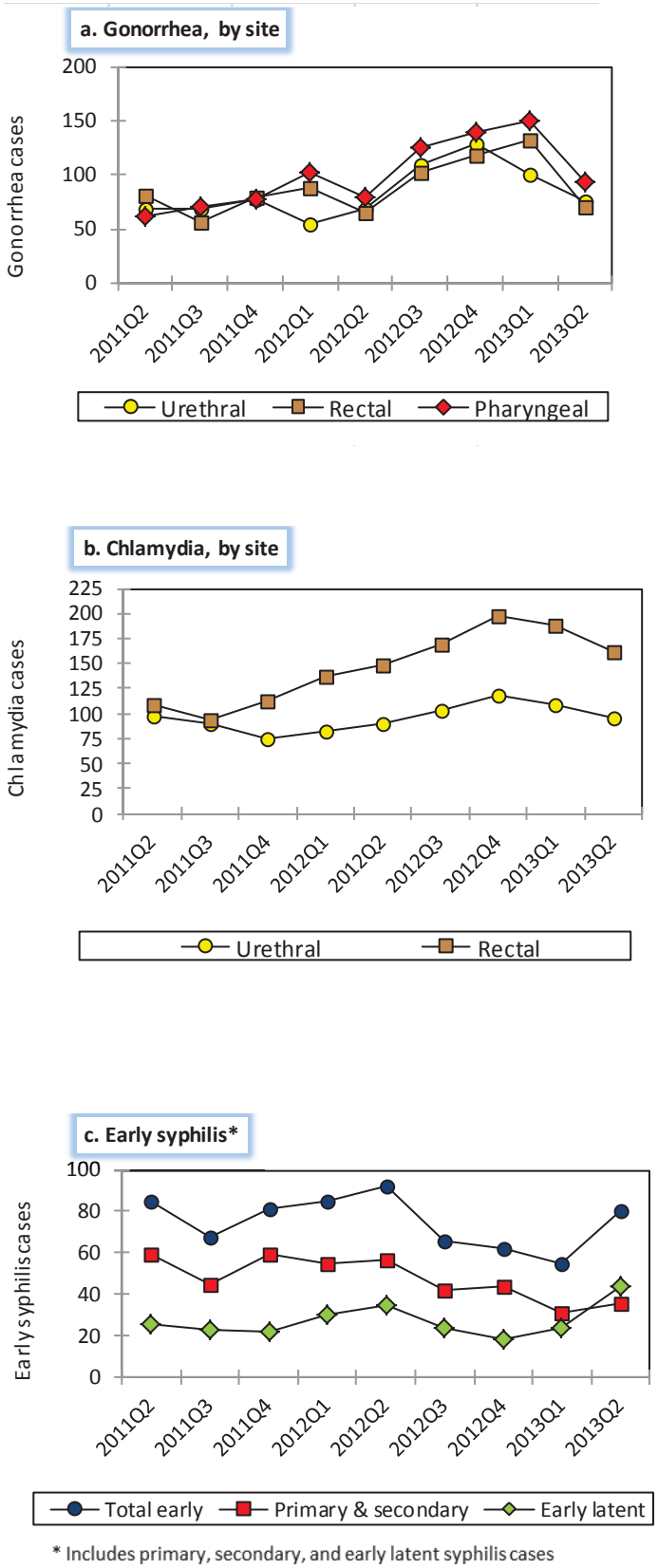
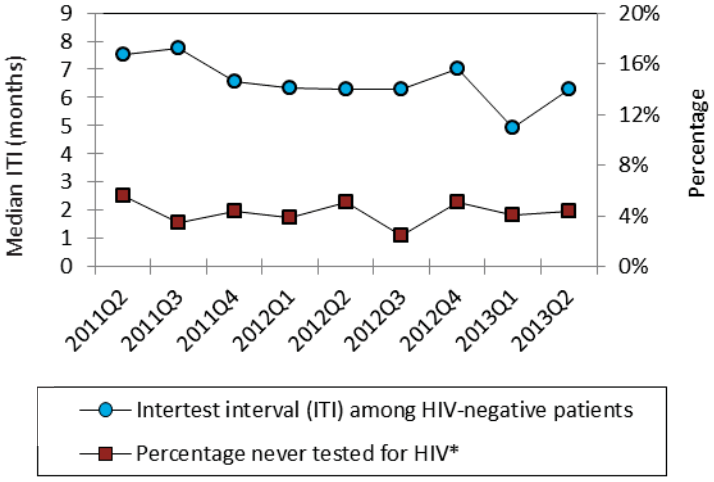


Figure 2: Quarterly King County STD morbidity among MSM



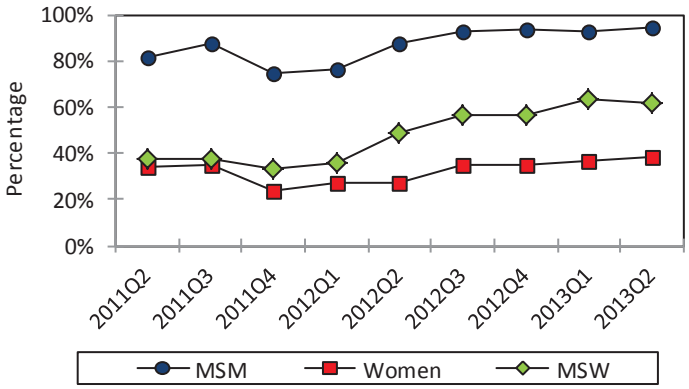
* Includes primary, secondary, and early latent syphilis cases

Figure 3: HIV testing among PHSKC STD Clinic patients, MSM (note different scales)



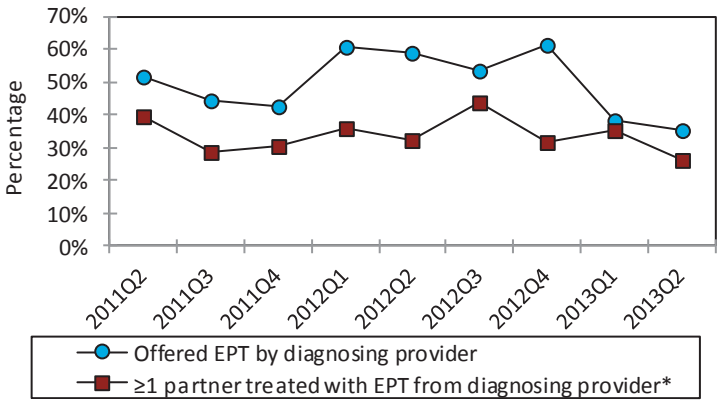
HIV testing should be performed annually on low-risk MSM and quarterly on high-risk MSM[a].

Figure 4: Percentage of King County residents with a bacterial STD tested for HIV (excludes HIV+ residents)



Anyone diagnosed with a bacterial STD should be tested for HIV.

Figure 5: Expedited Partner Therapy (EPT) among King County women and MSW diagnosed with GC or CT



* Median number of patients surveyed per quarter = 31 (Range 13-78)

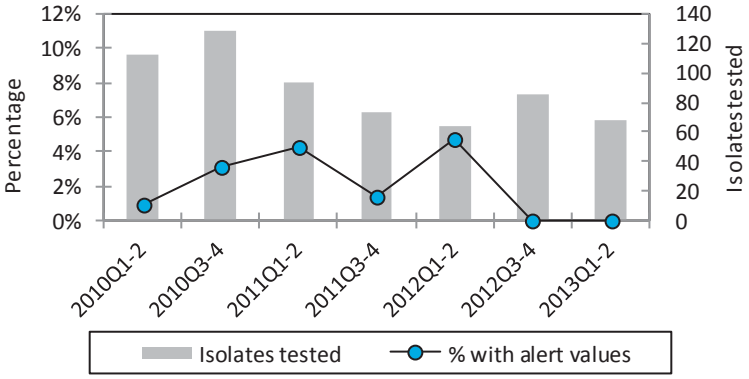
All women and MSW diagnosed with gonorrhea or chlamydia should be offerred EPT by their diagnosing provider.

Table 3: Male GISP urethral isolates with alert values for cephalosporins or azithromycin[d]

	2012		2013	
	2012 Q1-2	YTD	2013 Q1-2	YTD
Total isolates tested*	64	64	68	68
MSM	50	50	55	55
MSW	11	11	5	5
Total alert isolates*	3	3	0	0
MSM	2	2	0	0
MSW	1	1	0	0

* Column may not equal total due to missing sexual preference data

Figure 6: Percentage of male GISP[b] urethral isolates with alert values for cephalosporins or azithromycin (note scales)



Alert value = Minimum Inhibitory Concentration (MIC, lowest antibiotic concentration needed to halt bacterial growth) is higher than preset thresholds[c]. Alert value MICs represent decreased susceptibility to an antibotic but may not represent resistance.

a. High-risk = MSM with any one of the following in the prior year: diagnosis of a bacterial STD, methamphetamine or popper use, ≥10 sex partners (anal or oral), or unprotected anal sex with a partner of unknown or discordant HIV status
   Low-risk = sexually active MSM who do not meet high-risk criteria
b. Gonococcal Isolate Surveillance Project (GISP), source of antibiotic susceptibility data, is supported by the Centers for Disease Control and Prevention
c. Alert values:
   Ceftriaxone MIC ≥ 0.125 µg/ml
   Cefixime MIC ≥ 0.25 µg/ml
   Azithromycin MIC ≥ 2.0 µg/ml
d. Abnormal amount of missing sexual preference data in 2012Q1 due to technical issues with data collection instrument

Evolution and Evaluation of a Social Marketing Campaign Aimed at Increasing HIV Testing among MSM

Background

HIV disproportionately affects men who have sex with men (MSM). The Washington State Department of Health (DOH) reports that MSM account for 70% of reported HIV cases among people with known risk in 2007-2012 and men with dual risk of injection drug use and sex with men (MSM-IDU) account for an additional 8%, yet MSM are estimated to represent only 4% of the population.[1,2] In King County during 2007-2012, MSM accounted for 75% of reported cases with known risk and MSM-IDU accounted for an additional 9%. Most people living with HIV in Washington State (77%) reside in Snohomish, Pierce, and King Counties, mostly along the I-5 corridor.[3]

However, local and national estimations indicate that about 8-18% of people who are positive don't know their HIV status. Public Health aims to get more people tested at appropriate intervals based on behavioral risk level so they can know their status, get into care, and reduce their viral load by taking antiretroviral therapy. This has the potential to improve individual health and lower community viral load, i.e., the fewer people with detectable viral load in the community, the smaller the chances are that someone having sex with an HIV-positive person will become infected.[4] As of 2012, data from MSM tested at the Harborview STD Clinic showed they had a median inter-test interval of seven months.[5] Inter-test interval (ITI) is defined as the number of months between the most recent HIV test and current HIV testing visit.

In 2012, health departments in King, Pierce and Snohomish counties collaborated with DOH and community-based agencies that provide services to MSM in one or more of these counties to develop a social marketing campaign to encourage more frequent testing among MSM at highest risk for becoming infected with HIV. The campaign was developed in partnership with a Seattle-based social marketing firm, Colehour + Cohen (C+C).

The campaign was called *Find Your Frequency*. Consistent with the Health Belief Model, the campaign encouraged HIV testing among MSM by addressing self-efficacy, perceived benefits and perceived barriers, as well as cues to action.[6] The main message was: *Test Often for HIV*; all ads referred to a custom-made website, FindYourFrequency.com. The website included an HIV testing frequency calculator that allowed individuals to assess their personal risk. HIV-negative men who engaged in one or more of the following behaviors within the last year were identified as higher risk: ten or more sex partners, unprotected anal sex with a partner of positive or unknown HIV status, history of gonorrhea, chlamydia or syphilis, or use of poppers or methamphetamine.[7] Men at lower risk (LRM) were encouraged to test once a year; higher risk men (HRM) were encouraged to test every three months.

Launched during Seattle's 2012 Pride Parade, the first leg of the campaign ran from June to January 2012 in all three counties. It involved multi-channel advertising, street outreach, clinic outreach, and email/text message reminder services intended to enhance HIV testing uptake. Online media used in the campaign included a mobile-friendly website and social media advertising on Facebook and hook-up websites and phone apps like Grindr and Manhunt. Print media included ads in *Seattle Gay News* and *The Stranger*, billboards in targeted neighborhoods, and posters, coasters, and mirror clings in bars, local businesses, and bathhouses. Business cards and postcards advertising the website were distributed by staff at clinics and by outreach staff at popular events like Capitol Hill Block Party and the Pride Parade. Starting in January 2013, two graduate students in the University of Washington Master's in Public Health program undertook an evaluation of the campaign. The aim of the evaluation was to assess campaign performance, whether or not changes in testing knowledge, attitudes, or behavior occurred within the target population, and what we could do to improve future campaigns.

Methods

We employed a variety of methods to evaluate the campaign, including one-on-one interviews, focus groups with segments of the target population, online and intercept surveys, analysis of clinical data, and online advertising/website analytics.

In April 2013, MSM in the three counties completed 542 online surveys and 97 intercept surveys about the *Find Your Frequency* campaign. To qualify for the survey, respondents had to reside in King, Pierce, or

Snohomish County and be a man who has sex with men (this included transgender men and women). The survey was designed to elicit common and targeted information from both HIV-positive and HIV-negative MSM. Online surveys were hosted by SurveyGizmo and advertised in *The Stranger* (print edition) and on Grindr as well as spread by email listservs and social media posts on Facebook. The intercept surveys included a shorter subset of the online questions and were completed in person outside of gay bars and events in Seattle during the months of April and May, 2013. Both online and intercept survey participants were offered a chance to win a $150 Visa gift card. The surveys consisted of yes/no, multiple choice, and open-ended response questions to elicit information on demographics, sexual risk behavior, HIV testing attitudes and behaviors, and exposure to and thoughts about the campaign.

We collected HIV testing data for MSM from STD clinics in King, Pierce, and Snohomish Counties, as well as from Gay City, a community-based testing site in Seattle. These data provided a picture of HIV testing frequency before and during the campaign.

Interviews with representatives from several HIV/AIDS service organizations, local health department staff, and C+C employees helped round out the process elements of the evaluation. We conducted five focus groups with 40 men representing populations of interest: African American MSM, meth-using/meth-recovering MSM, and diverse MSM from King, Pierce, and Snohomish Counties. We attempted focus groups with other populations of interest (Latino MSM and young MSM) but we were not successful in convening these groups.

Finally, we looked at advertising performance data provided by C+C and Google Analytics to see which online ads performed the best in terms of clicks-through and impressions, and how the campaign drove traffic to the campaign website.

Results

Survey

Survey participants were similar to other local surveys of MSM including the 2009-2012 Pride surveys and the 2011 NHBS MSM survey[8,9] in terms of race (71% White, 6% Black), ethnicity (12% Hispanic), health insurance (80% had insurance), and sexual orientation (91% gay, 6% bisexual), leading us to believe our survey respondents were representative of MSM in the community. Online (N=543) and intercept (N=97) survey groups were similar, except more people who completed the intercept survey reported HIV-positive status and Seattle residence. When looking at who saw the campaign (n=327, 59%) vs. those who did not (n=230, 41%), demographics were very similar (**Table 1**). Almost half of HIV-negative survey respondents were classified as higher risk (HRM, n=218, 44%); the rest were lower-risk (LRM, n=275, 56%). Demographically, HRM and LRM were alike in terms of race, ethnicity, health insurance status, and sexual orientation. Enrollment of transgender men (n=2), transgender women (n=0) and straight-identified MSM (n=2) were inadequate to conduct further analyses among these subgroups.

We asked about respondents' HIV testing behavior, attitudes, and intentions to test. The following data analysis is limited to MSM who said they were HIV-negative or said they did not know their status (**Table 2**). Almost half of HRM reported they had tested within three months prior to the survey; this proportion was similar among men who had seen the campaign (48%) and those who had not (43%). About three quarters of HRM had tested within the past six months. However, 33% of HRM who had seen the campaign reported their most recent ITI was 1-3 months, while only 18% of those who had not seen it said the same. Nearly half (46%) of HRM who had seen the campaign planned to test once every three months in the future, compared to 40% of HRM who had not seen the campaign. Altogether 91% of HRM tested at least once in the past year. Of the LRM who either saw or did not see the campaign, a quarter (24%) had waited more than a year to get an HIV test, which is less frequent than recommended. Three quarters of LRM tested more recently than a year ago, and half of LRM reported testing more frequently than recommended. Most LRM reported an ITI between four and 12 months; 56% of those who saw the campaign and 59% of those who did not see it claimed this ITI. Future intentions to test among LRM were quite similar whether they saw the campaign or not. Among those who saw the campaign, 26% of HRM and 23% of LRM said they changed how often they test for HIV because of the ads.

Regarding attitudes towards testing, we examined reasons for delaying testing, barriers to testing, and reasons to know one's HIV status. Among all MSM, thinking "my behavior is low risk" was the most common reason for delaying testing (61%). Notably, 39% of HRM believed their behavior was low-risk, even though they met high-risk criteria. Most LRM

accurately portrayed their behavior as low risk (79%). Being "too busy" was the second most common reason (42%) for delaying testing among HRM and for respondents in general (30%). Twenty-six percent of HRM said they were afraid of knowing they had HIV. The top reasons HRM wanted to know their HIV status were "caring about my personal health" (82%), "caring about my sex partners" (68%), "having sex with many partners" (49%), "sex with a new partner" (46%), and "caring about my community" (44%). Responses for LRM were similar except they were less likely to be concerned about many partners or state they did not use a condom during last sex.

Over a third of respondents (38%) knew about the campaign by name alone (unaided recall). When shown images of the campaign, most respondents (59%) said they could recall it (aided recall). Sixty-two percent of HRM had seen the campaign and 79% of these expressed positive or very positive feelings about it; whereas 87% of LRM had positive or very positive feelings about it. Most people said they saw the campaign in a bar (61%), on Grindr (43%), in *The Stranger* (27%) and in clinics (23%). Posters were our most visible media channel; 88% of those who saw the campaign saw the posters while 27% saw billboards. All of the HRM intercept respondents said they saw the posters. Posters were also the most liked element of the campaign: 58% of respondents liked them. Based on the open response question about the campaign's main message, most respondents said some version of "get tested," "test frequently" or test regularly or on a schedule, "know your HIV status," or "get tested based on your behavior." However, HRM did not repeat our targeted message of "Test every 3 months."

Almost 20% of online respondents said they visited the website, and nearly 17% said the website was one of the components that "appealed to them most." Two thirds of MSM (68%) who visited the website said they used the testing frequency calculator while 79% of HRM used it. Ads on hook-up sites led 38% of website visitors to the campaign website. Broken down by risk, 43% of HRM clicked on a hook-up site ad, compared to 21% of LRM. Website users reported it was easy to use and understand.

Test Reminders

Reminders to test for HIV appear to be an effective method for encouraging testing, but knowledge and use of our reminder service by the target audience was low. The campaign offered several methods to sign up for HIV testing reminders: via outreach cards, on coasters and posters, in online ads, on the website, and by clinic and street outreach staff. Both email and text message reminders were offered. About a quarter of MSM who saw the campaign (24%) reported receiving some type of reminder to test (from the campaign, Gay City, or a doctor's office) while only 14% of people who did not see the campaign reported receiving a reminder. An overwhelming majority of respondents (96%) said if they received a reminder in the future, they would test within a month, implying reminders may be effective, but are underutilized.

Of those responding to the question, "If you received an HIV-testing reminder, did you test within a month of the reminder?" 64% (n=117) said yes. We planned for 2,000 MSM to sign-up with our testing reminder service. Actual sign-ups were far below: only 193 as of December 2012. Text was preferred over email reminders: 105 people signed up for three-month text reminders, presumably because they were HRM, and 40 people signed up for 12-month text reminders. Forty-eight MSM signed up for email reminders. Sixteen percent of respondents said, "No, I don't need a reminder because I set one up on my own calendar;" 32% said, "No, I don't need a reminder; I just remember;" and 11% reported they already received reminders from Gay City.

HIV Testing Data

The data systems of the three counties are not standard; we were able to compare counties on some measures but not others. The number of HIV tests at public health clinics among MSM increased in King and Pierce Counties, but declined in Snohomish County during the period of observation. The number of MSM HIV tests at public health clinics was one measure we looked at to determine if the campaign had an impact on the testing behavior of MSM (**Table 3**).

We were able to analyze ITI for MSM tested at public health STD clinics in Snohomish and King Counties but not Pierce County; questions asked of patients in Pierce County did not allow for a calculation. In the King County STD Clinic, we found that ITI decreased in every quarter except the fourth. Overall, the mean number of months between tests for MSM at the King County STD Clinic was 7.2 in 2011 and 6.5 months in 2012. In Snohomish Health District clinics, ITI increased from 4.1 months in 2011 to 5.2 months in 2012. As noted in Table 3, the number of HIV tests among MSM at public health clinics in Snohomish declined in 2012 which could have impacted ITI among MSM (**Table 4**).

Website Analytics

By December 31, 2012, 13,749 unique visitors had visited the website 26,021 times with 35,214 page views. Visitors spent an average of 1:05 minutes on the website and 47% of visitors went to the site more than once. Of all website visitors, 97% were US residents, 81% were from Washington State, and 72% were from Seattle. We found that 83% of people went to the website directly, by typing the address, scanning a QR code, identifying the website among their favorites, or from Grindr (whose ads function differently than other applications), while 15% clicked on an online ad and 3% searched for keywords using a search engine. Notably, 85% of visits to the site were on mobile devices.

We advertised on hook-up apps and websites like Grindr, Manhunt, Black Gay Chat, Squirt, Facebook, *The Stranger* online and *Seattle Gay News* online. Manhunt and Squirt respectively drove 4% and 3% of traffic to the *FindYourFrequency* website. Based on anecdotal evidence, it is likely Grindr (which is categorized as an undifferentiated direct access vehicle by Google Analytics) may have been the most effective forum for accessing the site from online advertising. Online ads generated more than 14 million impressions and more than 43,000 clicks-through. According to C+C, our ads generated about 6 to 10 times more clicks than the marketing industry standard.[10]

Focus Groups

From our focus groups, we learned valuable insights beyond the quantitative survey data from MSM of color, MSM from Pierce, King, and Snohomish Counties, and MSM who use methamphetamines or are in recovery.

Ten MSM of color provided feedback that the campaign should have been more direct and "in your face." They said the ads should include more about why you should visit the website; it was not apparent to them that they'd find more information there. Also, the group unanimously felt that images of other MSM showed intimacy while the African American images seemed "friendly" and "fun" but not intimate; they requested we fix this if we used images of African American men in the future. They also said they did not recognize the MSM in the posters we showed them even though two of the people featured were local models. These men expressed a concern about the "frequency" aspect of the campaign: they did not want MSM who have a risky sexual encounter to wait three or 12 months before testing; they felt the campaign should explicitly recommend timely testing after a risky sexual event. A conversation about lack of a community place for Black MSM to gather in Seattle and desire for more than just using hook-up apps to find partners highlighted a challenge of the campaign: how do we find Black MSM and provide public health messages in a city where there isn't a single place they gather?

MSM who use meth or are in recovery said there was a mixed response to campaign materials that were targeted to them specifically. This group had helped with formative research and development of a campaign outreach card with a "party and play" theme, photographic depiction of sex and drug use, and a recommendation to test every three months. However, participants reported that some people in their social networks said they did not identify with the image used (which featured poppers use, rather than methamphetamine) while others said it explicitly addressed the issue of substance use and risky sexual encounters that increase the risk of contracting HIV. Although the outreach card was a good conversation starter for some, it brought up the problem that meth-using MSM are stigmatized by society in general and by non-meth-using MSM in particular. They also expressed a desire for the campaign to show more of the diversity in gay and bi communities, particularly inclusion of images representing the trans community.

Participants in each focus group encouraged us to utilize local models for campaign images in the future. They wanted to see men who looked like MSM who live in the Pacific Northwest rather than stock images of guys who look too perfect. MSM in the bear community particularly appreciated being represented in the campaign and asked to be included in future campaigns as well. Focus group participants also suggested additional businesses, phone aps and online forums to consider for future campaigns.

Discussion

Overall, the campaign was successful in reaching a substantial portion of the tri-county area's MSM population (estimated at 40,000-50,000), presenting a clear main message, and being liked by the target audience. It is difficult to tie an increase in testing among MSM directly to the campaign, but we do know that HIV testing increased during the time of the campaign at the Harborview STD Clinic, Gay City, and at the STD Clinic in Pierce County. The ITI for MSM at the King County STD Clinic improved (decreased) from

2011 to 2012. However, although the number of tests may be too small to draw inferences, both testing and ITI among MSM tested in Snohomish Health District clinics did not improve; testing declined and ITI increased. Incident cases of HIV have hovered around 300 cases per year in King County for the years 2005-2012 with a slight dip in cases in 2011 and 2012 (n=275 and 295, respectively). Until data for 2013 are available, we won't know if an increase in testing had any impact on lowering transmission of HIV by MSM. We do not feel our testing reminder service was successful in terms of client uptake, but many MSM indicated this was not a service they needed. There also could have been concerns about privacy in terms of giving one's email address or cell phone number to a website MSM may not have trusted. We feel the diverse ad placement across several channels drove traffic to the website, and once there, MSM used the testing frequency calculator to assess their risk and find out how often they should test. Assuming our survey respondents are representative of our target audience, online ads did not adequately drive a majority of viewers to the website. But the low cost posters, which were ubiquitous in targeted venues, seem to have made a large impact. Further, as most users accessed the website on mobile devices, we identified the need to make this campaign and future web efforts more mobile-friendly. Still, large numbers of unique visitors to the website, according to Google Analytics, indicated a large audience for the campaign.

Limitations of the evaluation should be noted. The campaign message was not easy to execute, demanding two different recommendations for two different audiences (LRM and HRM) while not alienating HIV-positive MSM in the community. Although our surveys suggest MSM got the main message, and complaints were very few, some focus group respondents requested a simpler, more direct message. Most of our ads required the extra step of going to the website to complete the testing frequency calculator; MSM who did not do this may not have gotten the message about how often they should test.

Data collection systems in the three counties are not uniform; this hampered data collection and analysis when trying to look at inter-test interval and testing. Compared to King County, data are not as complete in Snohomish and Pierce Counties, so we could not fully examine the difference between high- and low-risk MSM. During 2012, the testing program in Snohomish County experienced a loss of staff and budget cuts which could explain the reduced HIV testing there. We did learn from this experience about the importance of unified data collection methods throughout the state and we've offered recommendations on how to collect data moving forward.

Changes in HIV testing practices that happened concurrently with the campaign could have impacted testing by MSM. Home testing became more widely available in 2012 with FDA approval of the OraQuick home test kit sold at pharmacies. We have no way of tracking tests performed using the home kits. Agencies like Gay City began offering increased HIV testing at venues around Seattle, and hours for testing at the Seattle bathhouses were expanded after one of the three bathhouses closed. We also have no data from private doctors, HMOs, pharmacies, research studies, or hospitals on HIV testing, only what was available at public health clinics or those funded by Public Health. This leaves out a large swath of the population. The 2012 Seattle Pride survey showed almost three-fourths of MSM surveyed got their HIV tests at private clinics or doctor offices (45% identified health care provider; 26% identified providers other than public health, Gay City, or community agencies).[3]

Other limitations included cutting several questions from our intercept survey to decrease the time needed to complete it; this meant we could not compare populations for all questions. Combining data from online and intercept surveys was not optimal. We were also unable to complete focus groups with important sub-segments of the MSM population, notably Latino and young MSM. Very few transgender or straight-identified MSM completed our survey, preventing inferences about these segments of the population.

Because of positive response to the campaign, we decided to refresh and remount the *Find Your Frequency* campaign in 2013. As our survey data showed, the need for the campaign's main message is still strong. Seventy percent of HRM surveyed were testing less frequently than every three months and a quarter of LRM surveyed had not tested at least once in the past year. Although we had fewer resources, we were able to take new photos of local men for the 2013 campaign images as recommended in focus groups and in one-on-one interviews. We expanded our marketing reach by placing billboards in new areas, engaged more online advertising including Google Adwords targeting websites and search terms used by MSM and Growlr (an app aimed at the bear community) and placed posters in more businesses based on geo-targeted maps of new HIV cases in Seattle. We created a splashy new contingent in the Seattle Pride Parade for which we won second place in the float competition. The 2013 ad taglines specifically addressed attitudes about testing and reasons to test

identified by survey respondents by highlighting that testing is part of caring for self and others: we utilized taglines like "Show You Care" and "Show Your Love" and addressed barriers by highlighting additional testing venues in the tri-county area on our website.

This campaign is part of an ongoing social marketing effort, funded by the Washington State Department of Health. Future campaigns may focus on different HIV-relevant issues including mental health, insurance coverage under the Affordable Care Act, or viral load suppression. This evaluation has provided us with valuable feedback on how to engage the target audience, which communication channels effectively reach MSM, and how to streamline processes when working with multiple stakeholders across county lines. MSM travel frequently along the I-5 corridor for social and sexual reasons, and a majority of community agencies and focus groups expressed appreciation for a single, consistent message seen in all three counties.

Contributed by Brett Niessen, Lindsay Bosslet, Shayla Compton, Jsani Henry, and Michael Hanrahan

1. Semiannual (1st Edition), 2013 (PDF). Available at: http://www.doh.wa.gov/Portals/1/Documents/Pubs/150-030-HIVSurveillanceSemiannualReport1-2013.pdf. Accessed July 30, 2013.
2. HIV Surveillance Data Among Men Who Have Sex With Men (MSM) and Injection Drug Users (IDU). Available at: http://www.cdc.gov/hiv/dhap/ehap/fyi/121912.html. Accessed July 31, 2013.
3. HIV/AIDS Epidemiology Unit, Public Health – Seattle & King County and the Infectious Disease Assessment Unit, Washington State Department of Health. *HIV/AIDS Epidemiology Report, Second Half 2012*: Volume 81.
4. Das M, Chu PL, Santos G-M, Scheer S, Vittinghoff E, et al. (2010) Decreases in Community Viral Load Are Accompanied by Reductions in New HIV Infections in San Francisco. *PLoS ONE*: 5(6).
5. Katz, D. Personal communication. March 25, 2012.
6. Glanz, Rimer, & Viswanath. *Health Promotion & Health Education*. 2008.
7. Menza TW, Hughes JP, Celum CL, Golden MR. Prediction of HIV acquisition among men who have sex with men. *Sexually Transmitted Diseases*. 2009; 36: 9.
8. See HIV/AIDS Epidemiology Unit.
9. See Table 10 in this report.
10. Godwin, A. Personal communication. December 17, 2012.

Table 1: Demographics of survey respondents based on history of viewing the Find Your Frequency campaign (aided recall, 2012-2013)[a], WA State

	Saw the campaign		Did not see campaign		Total respondents[b]	
	N	%	N	%	N	%
Race[c]						
White	225	74%	169	78%	472	71%
Black	22	7%	12	6%	38	6%
Hispanic	39	13%	22	10%	80	12%
Asian/Pacific Islander	29	10%	18	8%	49	7%
Native Am/AK Native	7	2%	4	2%	13	2%
Other	5	2%	5	2%	11	2%
Residency						
Seattle	217	71%	138	63%	441	70%
King County (excluding Seattle)	44	14%	42	20%	101	16%
Pierce County	20	7%	23	11%	44	7%
Snohomish County	24	8%	15	7%	43	7%
Sexual orientation						
Gay	279	92%	198	91%	566	91%
Bi	18	6%	13	6%	36	6%
Queer	8	3%	6	3%	18	3%
Straight	0	0	0	0	2	<1%
Age						
0-18	2	<1%	5	2%	7	1%
19-29	114	38%	83	38%	199	38%
30-39	107	35%	55	26%	163	31%
40-49	58	19%	51	24%	109	21%
50-59	20	7%	17	8%	37	7%
60+	3	1%	5	2%	8	2%
HIV status						
HIV-negative	242	79%	168	77%	472	76%
HIV-positive	44	14%	34	16%	112	18%
Don't know	19	6%	16	7%	38	6%
Health insurance						
Yes	243	80%	173	79%	417	80%
No	58	19%	43	20%	102	20%
Don't know	3	1%	2	1%	5	1%

a. Aided recall = respondents were shown images from the campaign and asked if they saw these or images like them.
b. Total column may be greater than sum of first two columns because some people skipped the question about seeing the campaign or because a question was not asked in the intercept survey.
c. Race/ethnicity were combined in the survey and respondents were able to check more than one category.

Table 2: Responses to selected survey questions among high– and low-risk MSM who were HIV negative or did not know their HIV status, 2012-2013, WA State

	High-Risk[a]		Low-Risk[b]		Total respondents	
	N	%	N	%	N	%
Last HIV test						
≤ 3 months	105	46%	85	31%	190	38%
4-6 months ago	66	29%	77	28%	143	28%
7-12 months ago	20	9%	53	19%	73	15%
> 12 months ago	36	16%	63	23%	99	20%
Interval between last 2 HIV tests						
1-3 months	62	27%	35	13%	97	19%
4-6 months	73	32%	79	28%	152	30%
7-12 months	46	20%	87	31%	133	26%
> 12 months	46	20%	78	28%	124	25%
Future HIV testing plan						
Every 3 months	95	42%	54	19%	149	30%
Every 6 months	85	38%	111	40%	196	39%
Every 12 months	38	17%	85	31%	123	24%
Other	8	4%	29	10%	37	7%
If you got a reminder in the future, would you test within a month?	55	97%	34	94%	89	96%
Reasons for delaying testing						
My behavior is low risk	73	39%	182	79%	255	61%
I'm too busy	78	42%	46	20%	124	30%
I'm afraid to know I have HIV	49	26%	20	9%	69	16%
Testing locations and hours are not convenient	42	22%	25	11%	67	16%
Reasons for wanting to know HIV status						
Care about personal health	136	83%	151	83%	287	83%
Care about my sex partners	112	69%	118	65%	230	67%
Care about my community	73	45%	84	46%	157	46%
Sex with a new partner	79	49%	72	40%	151	44%
Sex with many partners	83	51%	36	20%	119	35%
Condom not used or broke	69	42%	40	22%	109	32%
Number of sex partners in the last year						
0	0	0%	15	5%	15	3%
1	6	3%	67	24%	73	14%
2-4	44	19%	135	48%	179	35%
5-9	56	25%	63	23%	119	24%
10+	121	53%	0	0%	121	24%
Other risk factors in the last year						
UAI with HIV+ or unknown status	112	49%	0	0%	112	22%
Used meth or poppers	91	40%	0	0%	91	18%
Bacterial STD	67	30%	0	0%	67	13%
None of the above	32	14%	280	100%	312	62%

(Table 2 continued on next page)

Table 2, continued

	High-Risk[a]		Low-Risk[b]		Total respondents	
	N	%	N	%	N	%
Unaided campaign recall	96	42%	98	35%	194	38%
Recall after seeing campaign images	140	62%	158	57%	298	59%
Feelings toward campaign						
Very positive	48	34%	55	35%	103	35%
Positive	62	44%	81	52%	143	48%
Neutral	28	20%	20	13%	48	16%
Negative	2	1%	0	0%	2	<1%
Very negative	0	0%	1	<1%	1	<1%
Reported changing testing based on	36	26%	35	23%	71	24%
Website utilization						
Visited campaign website	26	19%	34	22%	60	20%
Used testing calculator	19	79%	17	59%	36	68%

a. High-risk was defined as MSM who said they had sex with 10 or more partners, had a bacterial STD, had used meth or poppers, or had unprotected anal sex with a partner of HIV-positive or unknown status in the last 12 months.
b. Low-risk was defined as MSM who said they had sex with nine or fewer partners, and no history of bacterial STD, meth or popper use, or unprotected anal sex with a partner of HIV-positive or unknown status in the last 12 months.

Table 3: Comparison of HIV testing by men who have sex with men before and during Find Your Frequency campaign implementation at public health clinics, 2011-2012, three WA State counties

	#of HIV tests in 2011	#of HIV tests in 2012	Trend
King County[a]	2577	2669	↑ +4%
Pierce County[b]	378	448	↑ +19%
Snohomish County[c]	180	133	↓ -26%

a. HIV testing data from Gay City and Center for MultiCultural Health not included
b. HIV testing data from Pierce County AIDS Foundation not included
c. HIV testing data from Evergreen Wellness Advocates (formerly Evergreen AIDS Foundation) not included

Table 4: Average Annual Inter-Test Interval (ITI, in months)[a], 2011-2012, two WA State counties

	2011	2012
King County STD Clinic	7.2	6.5
Snohomish Health District Clinics	4.1	5.2

a. Insufficient data to calculate ITI for Pierce County.

HIV among Men Who Have Sex with Men, King County, Washington State

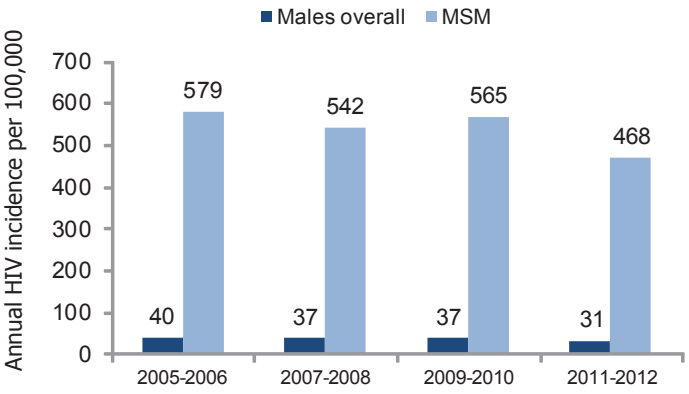
Men who have sex with men (MSM) are disproportionately affected by HIV throughout the United States, including in Seattle & King County. MSM account for approximately 74% of people living with HIV (PLWH) with a known transmission risk in King County; this percentage does not include MSM who also inject drugs (MSM/IDU) who account for an additional 9%.

Between 2000 and 2012, the proportion of newly diagnosed cases that are MSM increased from 75% to 85%. In addition, the proportion of all cases who are MSM/IDU increased during that time period from 7% to 12%.

PHSKC estimates the current number of MSM living in King County to be roughly 44,000 (between 5 and 6 percent of the total male population over age 15), and there are about 5,200 MSM living with HIV. Based on the estimation that 85% of HIV cases are diagnosed and reported, it is thought that about 15% of MSM in King County are HIV positive.

HIV Incidence Rates

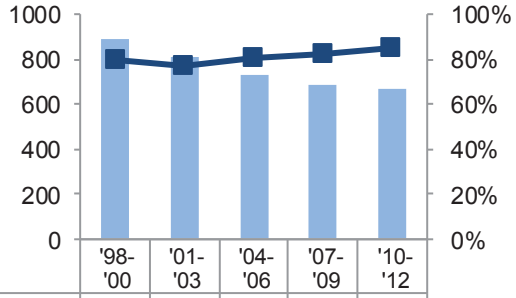
HIV incidence among males and MSM in King County, 2005-2012



New HIV Diagnoses

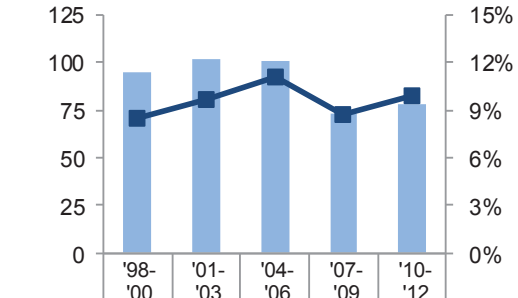
The overall number of new diagnoses among MSM in King County is decreasing over time, but MSM continue to account for the largest proportion of new cases. Additionally, a significant proportion of new diagnoses occur among MSM/IDU.

Number and percent of new HIV diagnoses among MSM in King County, 1998-2012



	'98-'00	'01-'03	'04-'06	'07-'09	'10-'12
# of new MSM diagnoses	891	811	730	686	667
% of total HIV diagnoses	80%	77%	80%	82%	85%

Number and percent of new HIV diagnoses among MSM/IDU in King County, 1998-2012



	'98-'00	'01-'03	'04-'06	'07-'09	'10-'12
# of new MSM/IDU diagnoses	95	102	101	73	78
% of total HIV diagnoses	9%	10%	11%	9%	10%

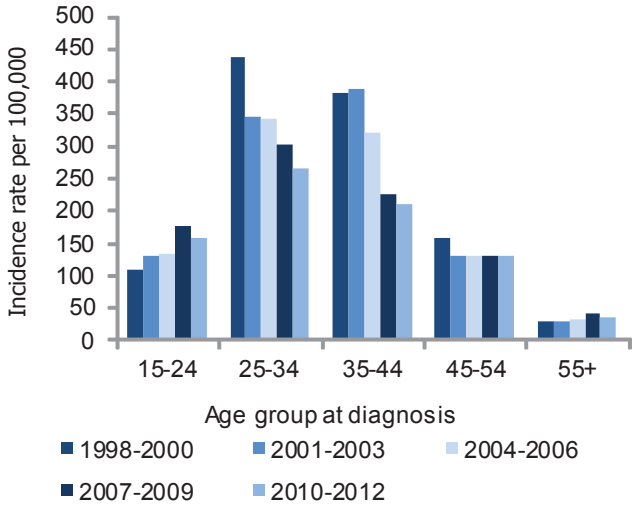
By age

While MSM aged 25-44 years continue to be at highest risk for HIV, the infection rate in this age group has declined steadily from 1998 to 2012. Therefore, an increasing proportion of new MSM diagnoses are in the younger (15-24) and older (45+) age groups.

By race/ethnicity

The majority of MSM diagnoses are among Whites, though Blacks and Hispanics also make up a significant proportion. In the chart to the right, foreign-born Blacks are not displayed separately from U.S.-born Blacks, due to very few MSM diagnoses among foreign-born Blacks (1-2 cases per year).

HIV incidence by age group among MSM diagnosed in King County, 1998-2012



MSM diagnosed with HIV in King County by race and year of diagnosis, 1998-2012

Year of Diagnosis	White %	Black %	Hispanic %	Asian & Pacific Islander %	AI, AN & multiracial* %	Total N
1998-2000	74%	10%	10%	3%	3%	891
2001-2003	73%	9%	12%	3%	3%	811
2004-2006	70%	9%	12%	5%	4%	730
2007-2009	68%	9%	15%	5%	3%	686
2010-2012	68%	9%	15%	5%	3%	667

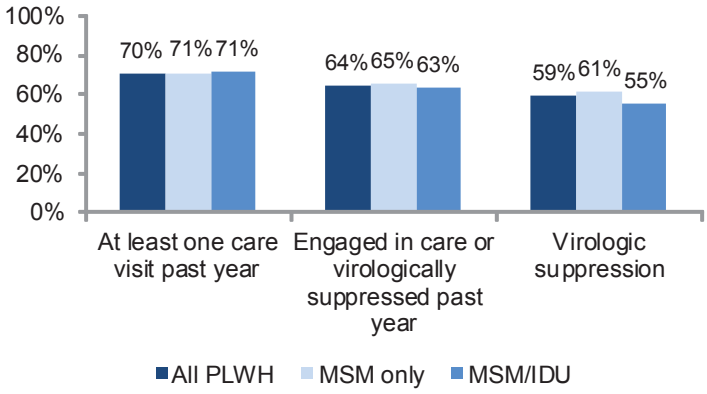
* AI = American Indian, AN = Alaska Native

HIV Care Cascade

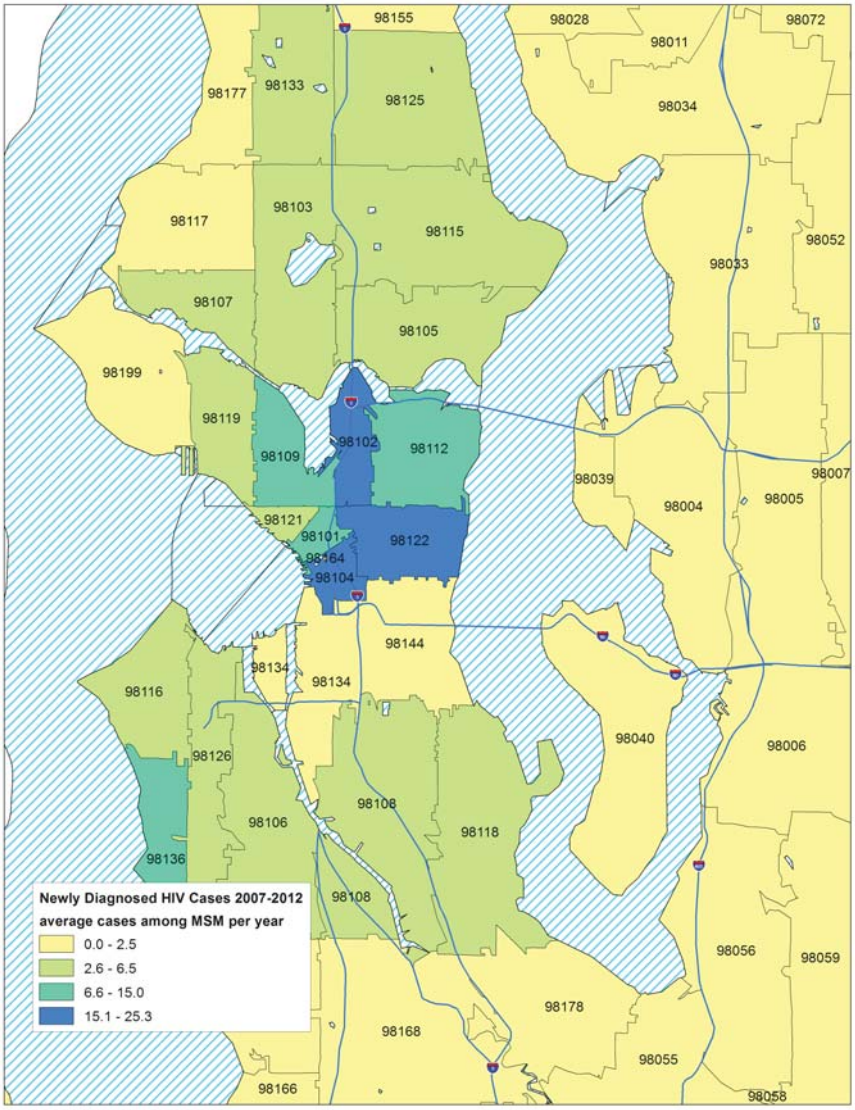
This HIV Care Cascade compares care markers for all people living with HIV to MSM and MSM/IDU cases. The calculations for MSM do not include cases that are also IDU.

The percentages of individuals receiving care in the past year and engaged in care are very similar across all three groups; the only slight disparity is the lower fraction of MSM/IDU cases that are virologically suppressed. All calculations are based on the estimate that 85% of all HIV cases are diagnosed and reported.

HIV Care Cascade for all PLWH, MSM, and MSM/IDU in King County as of June 30, 2013



Map of New HIV Diagnoses by Zip Code



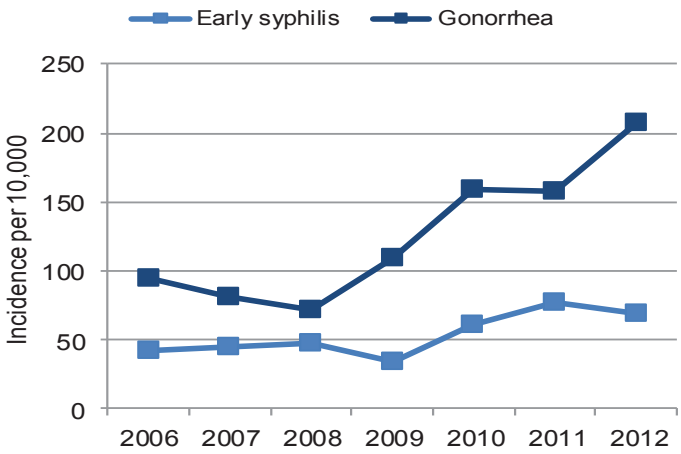
Case count for zip code 98104 includes homeless cases.
Zip codes not pictured contain 2.5 or fewer cases per year.

Other STDs

In addition to HIV, MSM are at higher risk of other sexually transmitted infections, most notably early syphilis and gonorrhea. Gonorrhea incidence among MSM has more than doubled between 2006 and 2012, while early syphilis has increased by a factor of about 1.5 during that time.

For more information on STDs in MSM and other populations in King County, visit http://www.kingcounty.gov/healthservices/health/communicable/std/statistics.aspx

Incidence of early syphilis and gonorrhea among MSM in King County, 2006-2012



Behavioral Risk Factors

Data was compiled from the Seattle National HIV Behavioral Surveillance (NHBS) survey of MSM in 2011, the Medical Monitoring Project (MMP) and Case Surveillance Based Sampling (CSBS) in 2012-2013, the Seattle Gay Pride Survey in June 2013, and the STEAM survey of Black MSM in King County to provide an overview of risk behaviors, HIV testing practices, and health insurance coverage in the Seattle & King County area.

	2011 Seattle Area NHBS MSM survey N=371 (19% HIV+)		2013 Seattle Gay Pride Event survey N=366 (11% HIV+)		2011-12 MMP & CSBS in King County N=255 (100% HIV+)		2008 STEAM survey of Black MSM in King County N=368 (26% HIV+)	
Sexual Behavior (last 12 months)	N	%	N	%	N	%	N	%
Number of male sex partners								
0*	N/A		43	13%	62	27%	15	4%
1	95	26%	120	37%	62	27%	81	22%
2-4	104	28%	88	27%	51	22%	166	45%
5-9	78	21%	39	12%	21	9%	48	13%
10+	94	25%	35	11%	36	16%	58	16%
Drug use at last sexual encounter								
No	299	81%	N/A	N/A	181[§]	71%	191	85%
Yes	72	19%	N/A	N/A	74[§]	29%	34	15%
Substance Use (last 12 months)								
Poppers								
No	260	70%	309	87%	204	80%	143	81%
Yes	111	30%	46	13%	51	20%	33	19%
Methamphetamines								
No	310	84%	339	95%	216[†]	85%	137	78%
Yes	61	16%	19	5%	39[†]	15%	39	22%
Drug Injection								
No	342	93%	341	95%	234	92%	345	94%
Yes	25	7%	19	5%	21	8%	23	6%
HIV Testing**								
Never tested	17	6%	29	10%	N/A	N/A	21	9%
Last test >12 months ago	97	32%	62	21%	N/A	N/A	152	68%
Tested in previous 12 months	189	62%	198	69%	N/A	N/A	50	22%
Tested in previous 6 months	131	43%	110	38%	N/A	N/A	63	28%
Tested in previous 3 months	86	28%	90	31%	N/A	N/A	78	35%
Health Insurance								
No	107	29%	87	24%	14	5%	N/A	N/A
Yes	264	71%	272	76%	241	95%	N/A	N/A

* NHBS subjects required to have at least one sex partner in previous year to participate in survey
** Of those that self-report being HIV-negative
[§] Drug use before or during sex in past 12 months
[†] Includes methamphetamine plus other amphetamines

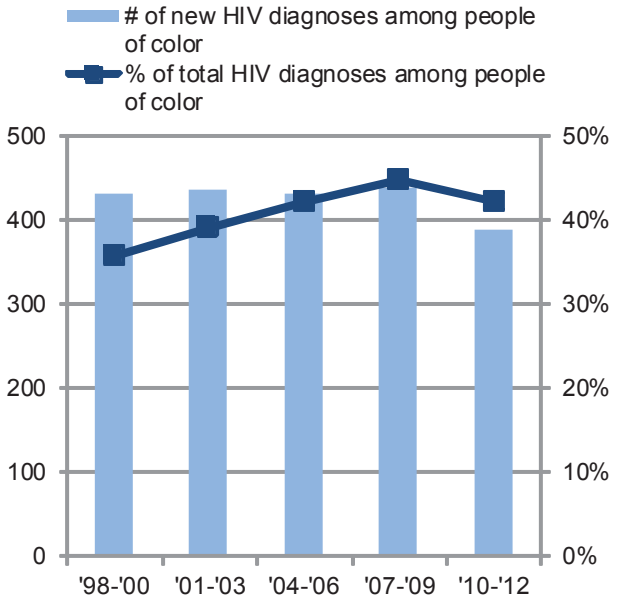
HIV among People of Color, King County, Washington State

New HIV Diagnoses

Like many parts of the United States, there are racial disparities associated with HIV infection in King County. Hispanics, foreign-born Blacks, and U.S.-born Blacks all experience a greater HIV burden compared to Whites, Asian & Pacific Islanders, American Indians & Alaska Natives, and people of two or more racial backgrounds (multiracial).

Over the past 15 years, People of Color (non-Whites) have accounted for between 32 and 48% of all new HIV diagnoses in King County. In 2012, 43% of new diagnoses were among people of color. In recent years, the proportions of new diagnoses among Hispanics and Asian & Pacific Islanders have been increasing, though the absolute number of newly diagnosed cases in these groups remains small compared to Whites.

Number and percent of new HIV diagnoses among People of Color in King County, 1998-2012



HIV Incidence Rates

Most new diagnoses each year occur among Whites, but the rates of new diagnoses among Hispanics and Blacks are between 2 and 7 times higher than that of Whites. The highest diagnosis rates occur among foreign-born Blacks. It is likely that many of these cases became infected with HIV while living outside of the United States, though it is difficult to determine with certainty where and when they acquired HIV.

Average annual HIV incidence rates by race in King County, 2009-2011

	Estimated 2010 Population		HIV Diagnoses 2009-2011		Average Annual Rate per 100,000	Rate Ratio (compared to Whites)
	N	%	N	%		
White	1,255,731	64%	541	58%	14	1.00
Black	116,862	6%	167	18%	48	3.3
U.S.-born Black	88,110	5%	88*	9%	33	2.3
Foreign-born Black	28,752	1%	79	8%	92	6.4
Hispanic	173,512	9%	148	16%	28	2.0
Asian & Pacific Islander	302,116	15%	50	5%	6	0.4
AI & AN**	16,330	<1%	6	<1%	12	0.9
Multiracial	93,069	5%	23	2%	8	0.6
Total	1,957,620	100%	935	100%	15.9	-

* U.S.-born Black includes 1 case of unknown place of birth

** AI = American Indian, AN = Alaska Native

HIV Exposure Category

Among males, foreign-born Blacks are much less likely than other racial groups to have acquired HIV via male-male sexual contact; the majority of foreign-born Black cases with known risk are the result of heterosexual contact. In contrast, the HIV exposure categories for U.S.-born Black males are more similar to those of White males, though with slightly higher percentages of IDU and heterosexual transmission.

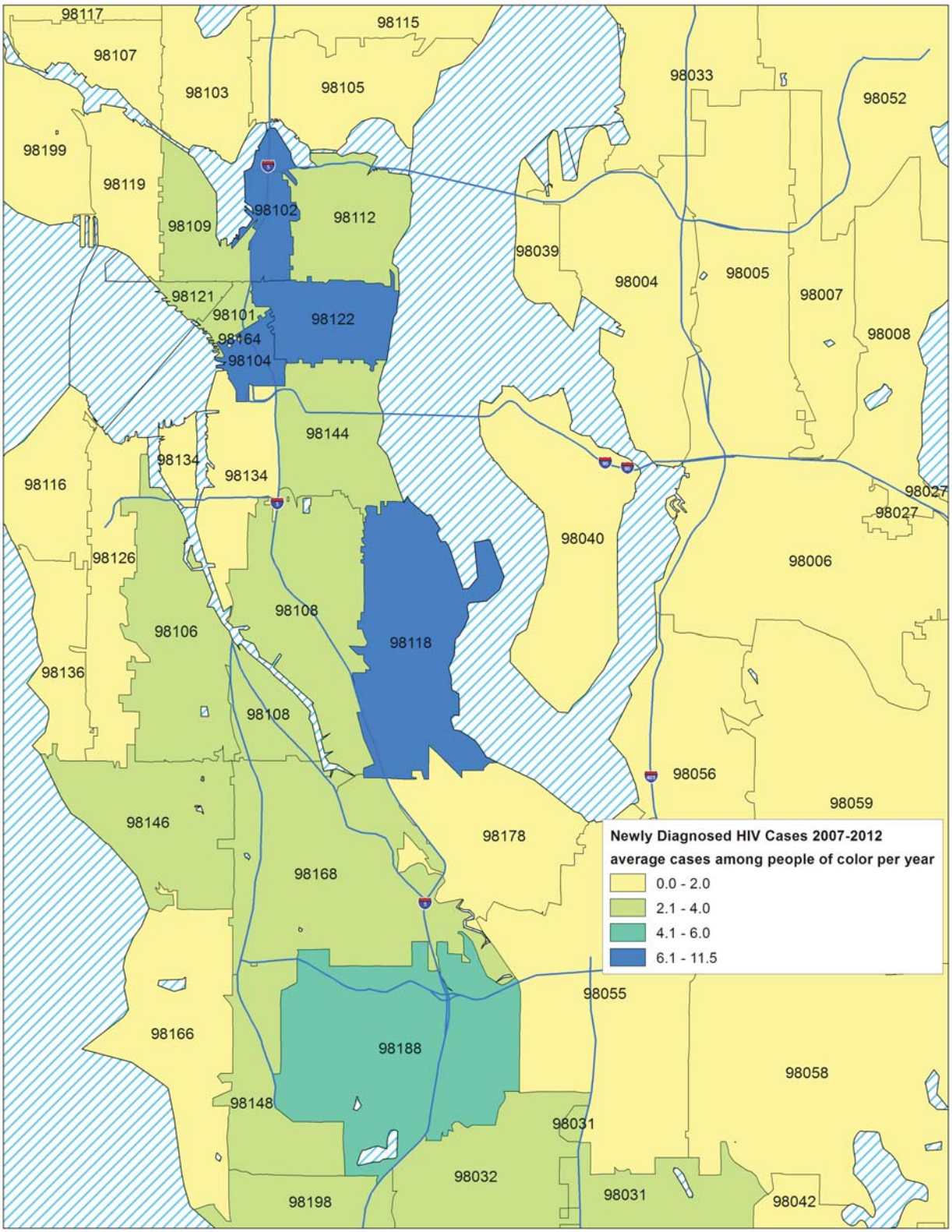
HIV exposure category by race and gender for all living individuals diagnosed in King County

	White	U.S.-born Black*	Foreign-born Black	Hispanic	Asian & PI	AI, AN, & multiracial
Total Males	4740	601	258	774	238	180
MSM	82%	69%	12%	73%	72%	64%
MSM/IDU	11%	8%	1%	8%	3%	26%
IDU	2%	8%	2%	5%	3%	6%
Heterosexual	1%	5%	32%	4%	3%	1%
Other**	3%	10%	53%	10%	19%	4%
Total Females	259	158	267	48	39	34
Heterosexual	63%	61%	69%	70%	64%	53%
IDU	26%	19%	1%	7%	3%	35%
Other**	10%	20%	30%	23%	33%	12%

* U.S.-born Black includes 19 males & 5 females of unknown place of birth.

** Other includes blood product, perinatal, and undetermined exposures.

Map of New HIV Diagnoses Among People of Color by Zip Code, King County

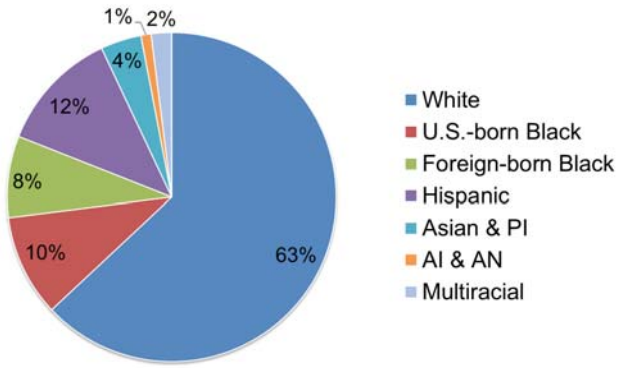


Newly Diagnosed HIV Cases 2007-2012
average cases among people of color per year
0.0 - 2.0
2.1 - 4.0
4.1 - 6.0
6.1 - 11.5

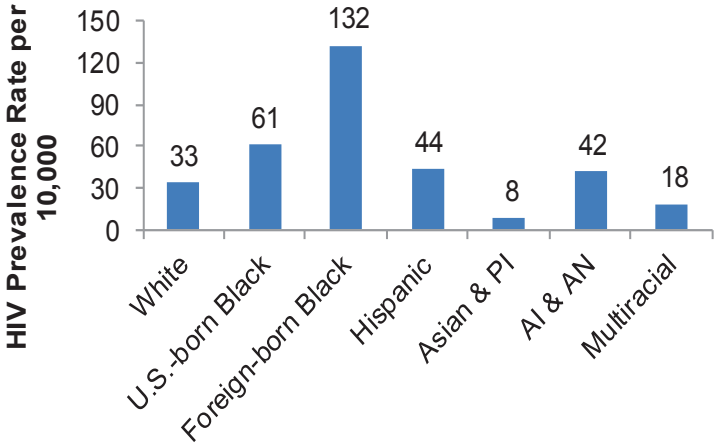
Case count for zip code 98104 includes homeless cases.
Zip codes not pictured contain 2.0 or fewer cases per year.

HIV Prevalence

Of those currently living with HIV in King County, 63% are White, 18% are Black (10% U.S.-born, 8% foreign-born), 12% are Hispanic, 4% are Asian or Pacific Islander, 2% are multiracial, and less than 1% are American Indian or Alaska Native.



HIV prevalence rates by race in King County as of June 30, 2013

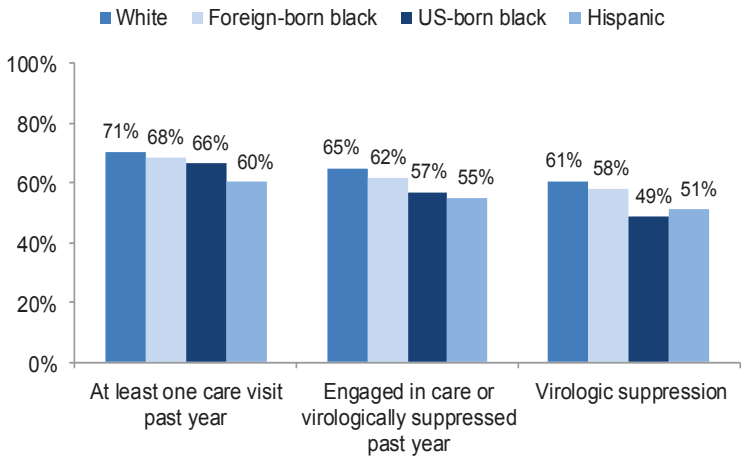


The overall prevalence of HIV infection in King County is about 33 cases per 10,000 individuals; this average is equal to the prevalence among Whites. Foreign-born Blacks, U.S.-born Blacks, and Hispanics all have a higher prevalence than the average. Despite the relatively smaller numbers of cases among these groups, the higher prevalence is due to the fact that they also
comprise a small proportion of the overall King County population (2% foreign-born Black, 4% U.S.-born Black, and 9% Hispanic).

HIV Care Cascade

This HIV Care Cascade compares care markers among the four races/ethnicities that comprise over 90% of people living with HIV. There are some racial disparities in terms of treatment and disease management: foreign-born Blacks, U.S.-born Blacks, and Hispanics have slightly lower percentages of infected persons receiving care in the past year, engaged in care, and being virologically suppressed, compared to Whites. All calculations are based on the estimate that about 85% of all HIV cases are diagnosed and reported.

Care cascade for King County residents by race/ethnicity as of June 30, 2013



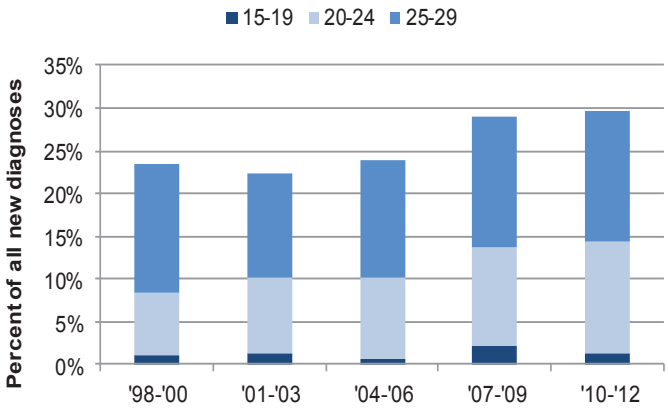
HIV among Young People, Ages 15-29, King County, Washington State

New HIV Diagnoses

The proportion of new HIV diagnoses among young people in King County has been increasing in recent years. In 2012, people ages 15-29 years comprised about 29% of all new diagnoses, compared to 22% in 2005.

This percentage is mostly accounted for by those aged 20-29, with 15% among 25-29 year olds, 13% among 20-24 year olds, and 1% among 15-19 year olds. Between 2000 and 2012, an average of 5 teens and 85 young adults were diagnosed with HIV each year.

Number and percent of new HIV diagnoses among young people in King County, 1998-2012



HIV Exposure Category and Race

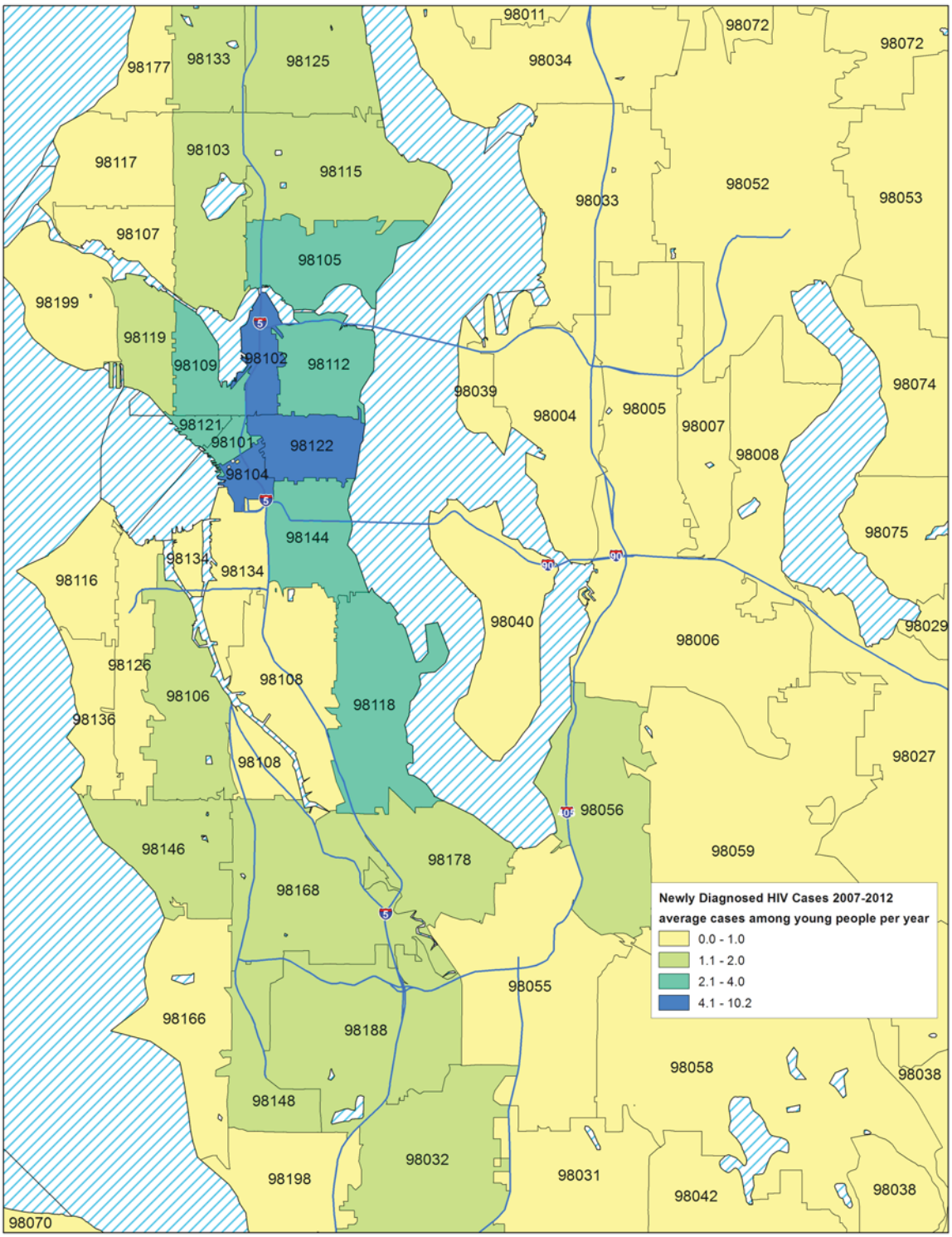
Though they comprise a small number of new diagnoses each year, teens aged 15-19 who become infected with HIV are more likely to be female and non-White than those aged 20-29. While 17% of new diagnoses among those aged 15-19 are U.S.-born Black, this proportion decreases to 11% in the 20-24 group and 9% in the 25-29 group. The proportions of other non-White races remain relatively constant across these age groups. In addition, teens are less likely than the older age groups to have acquired HIV through male-male sexual contact.

Exposure category, race, and gender for all young people diagnosed with HIV in King County, 1998-2012

	15-19	20-24	25-29	Total 15-29
Sex				
Male	64%	88%	87%	86%
Female	36%	12%	13%	14%
Race/Ethnicity				
White	45%	55%	58%	56%
U.S.-born Black	23%	12%	9%	11%
Foreign-born Black	6%	6%	8%	7%
Hispanic	18%	16%	16%	16%
Asian & Pacific Islander	5%	5%	6%	5%
American Indian/Alaska Native	0%	0%	1%	0%
Multiracial	3%	6%	2%	4%
Exposure Category				
Male-male sex	44%	66%	69%	67%
IDU & male-male sex	14%	13%	9%	11%
Injection drug use (IDU)	6%	3%	3%	3%
Heterosexual contact	26%	11%	12%	12%
Other*	11%	7%	7%	7%
Total Cases	66	516	749	1331

*includes blood product, perinatal, and undetermined exposures

Map of New Diagnoses Among 15-29 year-olds by Zip Code, King County



Case count for zip code 98104 includes homeless cases.
Zip codes not pictured contain 1.0 or fewer cases per year.

HIV Incidence Rates

Compared to those aged 30 and older, the rate of new HIV diagnoses is higher among 20-24 and 25-29 year olds and lower among 15-19 year olds.

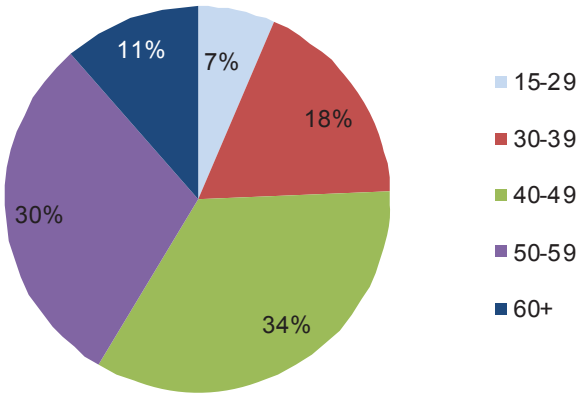
Average annual incidence rate among young people diagnosed in King County, 2009-2011

Age	2010 King County Population	Newly diagnosed cases, 2009-2011	Average Annual Rate per 100,000	Rate Ratio (compared to 30 and older rate)
15-19	117,514	17	5	0.22
20-24	129,822	117	30	1.37
25-29	160,656	137	28	1.29
30 & older	1,178,879	778	22	1.00

HIV Prevalence by Age

Currently, about 450 young people are living with HIV, comprising 7% of all PLWH in King County. There are 410,184 total young people residing in King County, meaning the prevalence of HIV in this age group is about 110 cases per 100,000 young people (compared to 525 cases per 100,000 people aged 30 and older).

PLWH by age group in King County as of June 30, 2013



Chronic Health Conditions among HIV-Infected Adults in Care in Washington State, 2009-2011

Background

With antiretroviral therapy (ART) almost universally available, the prognosis of persons living with HIV (PLWH) has improved dramatically. As the PLWH population ages, the burden of chronic disease is expected to grow. In this article, we describe the prevalence of chronic conditions among PLWH receiving care in Washington State, using weighted state-wide Medical Monitoring Project (MMP) data from 2009-2011. Specifically, we estimated the burden of cardiovascular disease risk factors, obesity, diabetes, mental illness, and alcohol, tobacco, and drug use.

Methods

The Medical Monitoring Project (MMP) is a national supplemental surveillance system that collects annual cross-sectional samples of clinical and behavioral data on HIV-infected adults who are in care. MMP uses a three stage sampling design to obtain representative samples of adults receiving HIV/AIDS care. During

face-to-face or telephone interviews, information on demographics, adherence to HIV medication regimens, and behavioral risk factors is collected. Medical record abstractions (MRA) are conducted to collect clinical data pertaining to diagnoses, medications, laboratory results, and health service utilization. A more detailed description of the MMP methodology is available elsewhere.

We analyzed MMP MRA (n=468) and combined MRA/Interview (n=382) data collected from August 2009 through April 2011 in Washington State. The response rates exceeded the CDC-defined threshold (>40%) required for creating a weighted representative database. For several conditions, we created a composite variable that indicated whether the condition was never documented within a patient's medical records, documented at least once since a patient's HIV diagnosis, or documented in the year prior to the patient's MMP interview. After comparing the MMP sample to 2012 Surveillance records, we estimated the crude prevalence of several chronic conditions based upon diagnoses documented in the MRA. We also compared substance use reported in the interview data to that documented in the MRA data to assess agreement.

Results

The 2009-2011 MMP sample appears fairly representative of the actual PLWH population in Washington State (**Table 1**). The majority of PLWH in Washington State are male, middle-aged, and White. The median time since diagnosis was about 11 years; roughly half of the sample had CD4 counts exceeding 500 cells per µL, and more than three-quarters of the sample had an undetectable viral load.

Cardiovascular disease risk factors appear prevalent in the Washington State PLWH in-care population (**Table 2**). Approximately 24% had documented hypertension, 16% hypercholesterolemia, and 7% hypertriglyceridemia. Six percent of MMP participants had Type II diabetes. The majority of participants were overweight (37%) or obese (28%).

Mental illness appears commonly diagnosed in PLWHA receiving care in Washington State (**Table 3**; "mental illness" refers to a diagnosis of depression, anxiety, psychosis, encephalopathy, or bipolar disorder). More than two-thirds of MMP participants (68%) had at least one mental illness diagnosis since their HIV diagnosis; 46.5% had a mental illness diagnosis in the year preceding their MMP interview. Depression and anxiety were the most commonly diagnosed mental illnesses.

Substance use was commonly documented in medical records and reported by MMP participants (**Table 4**). A large proportion of MMP participants (39%) reported that they currently use tobacco products at least weekly. Alcohol abuse since HIV diagnosis was recorded in 24% of MMP participants' medical charts; recent alcohol abuse (in the past year) was recorded in 7% of MMP participants' medical charts. Any drug use and injection drug use since HIV diagnosis were recorded in 34% and 17%, respectively, of MMP participants' medical charts; recent drug (any delivery mode) and injection drug use (in the past year) were recorded in 13% and 4%, respectively, of MMP participants' medical charts. There was evidence that chart reviews underestimated the true prevalence of drug use, as *reported* use of methamphetamines, marijuana, poppers, and crack were considerably higher than that documented in patients' medical charts.

Conclusions

This representative sample of PLWH receiving care in Washington State suggests that risk factors for cardiovascular disease, mental illness, and substance use are common health problems facing the PLWH community. As the PLWH population ages, management of non-AIDS-defining conditions, such as those mentioned above, will become a crucial component of long term HIV care. Implementing interventions that target modifiable behaviors related to chronic disease, such as smoking, should be considered.

Contributed by Teal Bell, Julia Hood, and Jennifer Reuer

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2. "Any Drug Use" = documented use of amphetamines, cocaine, crack, ecstasy, GHB, hallucinogens, heroin, special k, marijuana, methadone, methamphetamines, painkillers, poppers, rohypnol, steroids/hormones, tranquilizers, viagra, levitra or Cialis

Table 1: Comparison of 2009-2011 Medical Monitoring Project Sample to 2012 HIV Surveillance Data, Washington State, 2009-2011

	WA MMP Sample, 2009-2011 n=382		WA Surveillance Data, 2012 n=11,381
	% (median)	95% CI	% (median)
Male	83.7	79.1-88.4	86.0
Median Age	(46.5)	45.4-47.6	(47.0)
Race/Ethnicity			
White, non-Hispanic	71.6	65.5-77.8	66.4
Black, non-Hispanic	14.1	9.9-18.4	15.3
Hispanic	9.4	6.5-12.4	11.7
Other	4.8	2.9-6.7	6.6
Median years since HIV diagnosis	11.9	9.9-13.9	11
CD4+ count ≥ 500 among those with result in last 12 months	50.1	44.4-55.7	45.9
% Undetectable viral load among those with VL result in last 12 months	76.9	72.4-81.4	84.0

Table 2: Prevalence of cardiovascular disease risk factors, Medical Monitoring Project, Washington State, 2009-2011

	N	Weighted % (95% CI)
Hypertension	110	23.6 (18.6-28.5)
Hypercholesterolemia	77	15.9 (10.9-20.9)
Hypertriglyceridemia	35	7.3 (5.3-9.3)
Diabetes		
Type I	4	--
Type II	25	5.9 (3.4-8.4)
Unspecified	11	2.6 (0.3-5.0)
Obesity		
Overweight (BMI: 25.0-29.9)	127	36.6 (32.4-40.8)
Obese (BMI ≥30.0)	91	27.7 (22.6-32.8)

NOTE: 26.9% of participants were missing height or weight

Table 3: Prevalence of mental illness, Medical Monitoring Project, Washington State, 2009-2011

	Documented since HIV Diagnosis Weighted % (95% CI)	Documented in the Prior 12 Months Weighted % (95% CI)
Any mental illness	**68.0 (63.5-72.5)**	**46.5 (40.3-52.7)**
Depression	61.6 (55.9-67.3)	40.0 (33.6-46.4)
Anxiety	36.0 (29.7-42.2)	21.4 (17.1-25.6)
Psychosis	6.2 (4.0-8.5)	4.0 (2.5-5.4)
HIV encephalopathy	3.7 (1.7-5.7)	--
Bipolar disorder	6.5 (4.1-8.9)	Not recorded

Table 4: Prevalence of Substance Use, Medical Monitoring Project, Washington State, 2009-2011

	Documented in MR since HIV Diagnosis Weighted % (95% CI)	Documented in MR in the Prior 12 Months Weighted % (95% CI)	Self-Reported Use in the Prior 12 Months Weighted % (95% CI)
Current Tobacco Use	N/A	N/A	39.0 (32.2-45.8)
Alcohol Abuse	24.0 (20.0-27.9)	6.9 (4.6-9.2)	N/A
Any Drug Use	34.0 (28.5-39.5)	13.1 (9.4-16.8)	40.5 (35.0-46.0)
Injection Drug Use	17.3 (13.4-21.2)	4.3 (2.1-6.6)	7.1 (4.7-9.4)

Any drug use = documented use of amphetamines, cocaine, crack, ecstasy, GHB, hallucinogens, heroin, special k, marijuana, methadone, methamphetamines, painkillers, poppers, rohypnol, steroids/hormones, tranquilizers, Viagra, Levitra or Cialis

N/A="Not Available"

Highlights from the 2012 Seattle Area National Behavioral Surveillance Survey of Injection Drug Users

Injection drug use remains a significant risk factor for HIV infection in the U.S. despite recent decreases in the number of reported HIV cases associated with injection drug use. In 2011, cases attributed to injection drug use comprised 7.4 % of the estimated 49,273 newly diagnosed HIV cases and 10.3% when cases attributed to combined injection drug use and male-male sex were included.[1] In King County, injection drug use accounted for 5% and the combination of injection drug use and male-male sex for 9% (total 14%) of HIV cases diagnosed from 2010 to 2012.[2] The CDC sponsors the National HIV Behavioral Surveillance system (NHBS) in 20 large U.S. urban areas including the Seattle Division of the Seattle Metropolitan Statistical Area (King and Snohomish counties). The purpose of NHBS is to monitor prevalence in and trends of HIV and HIV-related risk behaviors and HIV testing among populations most affected by HIV, including men who have sex with men (MSM), injection drug users (IDU) and heterosexuals at increased risk. One of these populations is surveyed every year using a common CDC protocol and questionnaire at all sites. NHBS is the only national system that surveys HIV-negative persons at risk of HIV, persons with undiagnosed HIV infection, as well as persons with diagnosed HIV infection outside a health care setting. At the national level, NHBS data are used to inform progress towards the goals of the National HIV/AIDS Strategy. We have reported results in the HIV/AIDS Epidemiology Report from the 6 previous Seattle area NHBS surveys, including the 2005 and 2009 surveys of injection drug users (IDU).[3,4] This report describes highlights from the 2012 NHBS-IDU3 survey.

Methods

The CDC NHBS IDU surveys are conducted using respondent-driven sampling (RDS). RDS is a form of snowball sampling where participants are paid a small incentive to recruit a limited number of their network members to the study. Recruitment starts with a small number of participants ("seeds") chosen to have diverse sociodemographic characteristics who are asked to recruit 3 – 5 of their peers for the study. These referrals are screened for eligibility and those who complete the study are asked to recruit a new "wave" of participants. This process continues until the sample size has been reached. RDS is based on the theory that if peer recruitment proceeds through a sufficiently large number of waves, the composition of the sample will overcome any bias that may have been introduced by the non-random selection of seeds.[5,6] RDS data can be adjusted during analysis to reduce biases associated with preferential recruitment and differential network sizes. We present unadjusted data for this report.

All data collection activities were conducted at our main field office in Pioneer Square and in a motorhome parked at a fixed location in South King County. Potential participants (including seeds) were screened for eligibility (resided in King or Snohomish County, age 18 years or older, injected drugs in the past 12 months, and were able to complete the survey in English). 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. All participants, including those who reported previously testing positive, were offered rapid HIV and rapid hepatitis C (HCV) testing (OraSure Technologies). Those with reactive rapid HIV results had confirmatory Western Blot tests done on whole blood specimens. We did not provide confirmatory HCV RNA testing, but recommended that participants with reactive rapid HCV test results, who had not previously had a confirmatory test, see a healthcare provider for testing and medical follow-up. Participants provided separate consent for the survey, HIV and HCV testing. They received a monetary incentive, condoms, and information about local HIV prevention, health and social services. No personal identifiers were collected. The study was approved by the Washington State Institutional Review Board.

Results

Recruitment: The survey took place from 7/9/2012 to 11/29/2012. We recruited nine seeds of different demographic characteristics from different areas of King County. Of these, eight seeds referred other participants, ultimately resulting in a sample of 686 eligible participants over 15 recruitment waves. Seventy-nine percent of the non-seed participants derived from three seeds. Of the 686 participants, 684 consented to HIV and 678 to HCV testing. HIV and HCV prevalence are presented in **Tables 1-4**, and are each discussed in a separate section below.

Demographic characteristics: The vast majority of

participants (98%) resided in King County and only 12 participants (2%) were from Snohomish County. The King County participants came from 60 different zip codes (**Figure 1**) with 90% residing in Seattle and 10% in other areas of King County. A little over one-third of the participants were female and about two-thirds were male (**Table 1**). The median age was 43 years. A little over half (58%) were White, 17% Black, 9% Hispanic, 3% Native American, 1% other race, and 12% reported multiple races. Among those who reported multiple races, 81% included White, 77% Native American and 30% included Black. Four percent reported being born abroad.

Socioeconomic characteristics: Educational attainment was low, with 35% having completed education beyond high school (**Table 2**). Only 6% were currently employed; 33% reported being unemployed and 50% were unable to work due to health reasons. Fifty-seven percent had a yearly income of less than $10,000. Almost half (45%) were currently homeless and 36% had been incarcerated in the last year.

Sexual identity and sexual behaviors: Among male participants, 9% identified as bisexual and 8% as homosexual or gay (**Table 3**). Among female participants, 21% identified as bisexual and 4% as homosexual or lesbian. Sixty-five (15%) of the 433 male participants reported sex with other men (MSM) in the last 12 months. Twenty-nine percent of the non-MSM participants and 37% of MSM participants reported unprotected (without a condom) vaginal or anal intercourse (UVAI) with a partner of unknown or opposite HIV status in the previous 12 months.

Drug use practices: Heroin alone was the most commonly used injection drug, reported by 84% of the participants, followed by amphetamines (9%) (**Table 4**). However, multi-drug use was frequent with 93% of participants reporting injection of heroin, 48% speedballs (heroin and cocaine combined), 44% amphetamines, 36% cocaine, and 23% crack in the last 12 months. In addition, 88% reported using non-injection drugs such as marijuana (66%), crack (58%), downers (50%), amphetamines (45%), painkillers (44%), or powdered cocaine (32%) in the last 12 months. Overall, 86% of the MSM reported using amphetamines via any route, compared to 50% of the other participants. The median number of years since first injection was 18 years, and ranged from less than 1 year to 57 years. The majority (62%) of participants reported injecting more than once a day. One-third reported using a syringe after someone else had used it (receptive sharing), 58% had shared a cooker for preparing drugs, 47% had shared cotton for filtering drugs, and 26% had shared a syringe for measuring and dividing drugs (backloading). Most (83%) had been in drug treatment at some point in their life, including 38% in the last 12 months (**Table 5**). Needle exchange was the single most common source of syringes for 69% of participants. Overall, in the past 12 months, 87% had obtained syringes from a needle exchange, 55% from a pharmacy, 76% from friends or relatives, and 41% from drug dealers.

HIV prevalence: A total of 57 (8%) of the 684 participants who consented to HIV testing tested HIV positive on confirmatory testing (**Table 1**). Fifty-one (89%) of the 57 were aware of their HIV-positive status. Sixty-three percent of HIV positives were diagnosed 10 or more years ago. HIV prevalence increased by age, from 0% among 18-24 year olds to 12% among 40-49 year older, then declined to 7% among those 50 years and older. Compared to Whites, with an HIV prevalence of 7%, Hispanics had a slightly lower prevalence (6%), Blacks had a slightly higher prevalence (9%), Native Americans and participants reporting multiple races a still higher prevalence (13%). HIV prevalence was higher among participants with higher educational attainment (**Table 2**). HIV prevalence was 66% among men who reported being gay (**Table 3**) and 38% among MSM. HIV prevalence was highest among participants who reported injecting amphetamines as their primary drug (42%) including 67% among MSM amphetamine injectors and 13% among non-MSM amphetamine injectors (**Table 4**). HIV prevalence was lower among those who reported receptive syringe sharing, cooker or cotton sharing and tended to be lower among those who had backloaded, compared to those who did not engage in these sharing behaviors. In multivariate logistic regression analysis, the strong associations between HIV prevalence and amphetamine injection among MSM and non-MSM participants remained after controlling for age, education, homelessness, income, and history of incarceration.

HCV prevalence: A total of 495 (73%) of the 678 participants who consented to HCV testing were positive for antibodies to HCV. This means that they were either currently infected with HCV or had a history of HCV infection (**Table 1**). For the purpose of this report we refer to those with positive HCV antibodies as "HCV positive." Of the 495 participants who were HCV positive, 391 (79%) reported a previous diagnosis of HCV. Among those who reported a prior HCV diagnosis, 70% were diagnosed five or more years in the past (**Figure 2**). Thirty-nine (6%) were positive for both HIV and for HCV. HCV prevalence increased markedly by years since first injection (**Figure 3**) as well as by age, from 41% among those

18-24 years old to 91% among those 50 years and older. HCV prevalence was higher among those who were less well-educated, were unemployed or currently homeless (**Table 2**). Both MSM and males who identified as gay had lower HCV prevalence than other participants (**Table 3**). HCV prevalence was also lower among MSM with higher number of male sex partners and among MSM who reported unprotected non-concordant UVAI. HCV prevalence was higher among those whose most common injection drug was speedballs or heroin, among those who injected more frequently and lowest among MSM amphetamine injectors (**Table 4**). In multivariate logistic regression analysis higher HCV prevalence remained associated with older age, longer time since first injection and more frequent injection while participants with higher education or who were MSM amphetamine injectors had lower HCV prevalence.

Health-related variables: Seventy-two percent of participants had health care coverage, primarily Medicaid (53%) or Medicare (19%) (**Table 6**). Health care coverage was more common among those with self-reported HIV infection (92%). Overall, 86% of participants had visited a health care provider in the last 12 months. Among those with known HIV infection, 96% had seen a health care provider for HIV-related issues and 65% were currently taking HIV antiretroviral medication. Ten percent of those with self-reported HCV infection had received HCV treatment. Less than half of all participants reported vaccination against hepatitis A or hepatitis B and vaccination rates were not noticeably higher among those with self-reported HCV infection. Twenty-nine percent of participants reported binging on alcohol in the last 30 days and those with self-reported HCV infection were not less likely to report binging.

HIV and HCV testing: Overall 94% of the participants had ever been tested for HIV and 85% for HCV (**Table 7**). Among those who did not report being HIV positive, 28% had tested within the last 6 months, 43% within the last year, and 59% within the last 2 years. Those with current health insurance (49%) were more likely than those without (39%) to have tested in the last 12 months (p=0.03). There were no differences by any other demographic or socioeconomic factors, drug use practices or sexual behaviors. The most common reason for not testing in the last year was considering oneself to be at low risk of HIV infection (28%) followed by being afraid to know one's HIV status (13%); 46% said there was "No particular reason." Among those who had tested in the past 5 years, 26% reported that their most recent test site was a public health or community clinic, 18% a hospital, 12% a correctional facility, 11% a drug treatment center, 9% a private doctor's office, 5% an emergency room, 4% a needle exchange program, 3% an HIV testing site, 3% an HIV/AIDS outreach/mobile unit, and 8% somewhere else.

Limitations

As in all survey research there are limitations to keep in mind when interpreting the data. It is uncertain whether RDS produces a representative sample of the underlying population of interest. This complicates comparisons of RDS survey results over time as we have previously reported.[10] While methods have been proposed to adjust for recruitment biases in RDS,[5] these adjustments are currently incompatible with conventional statistical testing and were not used in this report. However, comparisons within this large NHBS-IDU3 sample are likely to illustrate true relationships even if the overall sample does not fully represent the Seattle area IDU population. Data were self-reported and are subject to recall and social desirability biases.

Comments

As in past surveys of Seattle area IDU, we found that MSM/IDU had substantially higher HIV prevalence then IDU who were not MSM and that HIV prevalence was particularly high among MSM/IDU who injected amphetamine as their primary drug.[3,4,7,8,9] As also noted previously, amphetamine injectors who were not MSM also had somewhat higher HIV prevalence compared to those who injected other drugs. In this survey 90% of the HIV positive participants were aware of their status. The majority had been diagnosed 10 or more years ago, had health insurance, and were receiving HIV-related care. About one-third of participants had engaged in HIV risk behaviors such as non-concordant UVAI or receptive syringe sharing. Although almost everyone had been previously tested for HIV, less than half of those who did not report being HIV positive had tested in the past year. There has been ongoing concern about transmission of HIV from these high prevalence MSM and IDU subgroups to the broader population but fortunately there are no indications of that having occurred based on HIV surveillance and NHBS survey data. However, continued close monitoring and efforts to quickly diagnose and treat new infections along with syringe exchange and other prevention services are important priorities for HIV prevention in this population.

HCV prevalence in the 2012 Seattle area NHBS-IDU3

survey was very similar to HCV prevalence in the 2009 Seattle area NHBS-IDU2 survey.[4] Only 6% had evidence of HIV and HCV co-infection. Even though a very high proportion of those with self-reported HCV infection had seen a health care provider in the previous year, less than half had been vaccinated against hepatitis A and B as recommended for persons with HCV infection. It is also concerning that a sizable proportion had recently binged on alcohol, which can have a serious adverse effect on the liver. Seventy-two percent had health care coverage compared to about 85% of the King County adult population. With implementation of the Affordable Care Act many of those lacking coverage should be eligible under the expanded Medicaid program. Hopefully that will lead to better opportunities for HCV care and treatment as more effective and shorter-term oral HCV treatment regimens become available.

The NHBS surveys provide a wealth of data that can be used to monitor HIV prevalence, awareness of HIV-positive status, HIV-related behaviors, HIV testing patterns and HIV treatment. It was only possible to provide highlights of findings in this report. For questions about the NHBS surveys please contact one of the co-authors.

Contributed by Hanne Thiede, Richard Burt, and Carrie Shriver for the Seattle Area NHBS Team

We would like to thank Susan Kingston, Katie Querna, George Ure, Katerina Lamola, Mel Phares, Courtney Moreno, and Emerin Hatfield for all their great work collecting the data. We are also grateful to the participants who volunteered their time, and to the WA Department of Health for providing free rapid HCV test kits.

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Table 1: Demographic characteristics and HIV and HCV prevalence among participants in the 2012 Seattle area NHBS-IDU3 survey

Demographic characteristics	Participants N=686		HIV Prevalence N=684		p value HIV	HCV Prevalence N=678		p value HCV
	n	%	n/N	% HIV+		n/N	%HCV+	
Total	686	100%	57/684	8%		495/678	73%	
Aware of positive status	--	--	51/57	89%		391/495	79%	
Sex[1]					0.10			0.45
Male	433	63%	40/433	9%		308/427	72%	
Female	248	36%	14/246	6%		184/246	75%	
Age (years)					0.052			<0.01
18-24	39	6%	0/39	0%		16/39	41%	
24-29	62	9%	3/61	5%		32/60	53%	
30-39	174	25%	16/174	9%		107/172	62%	
40-49	186	27%	23/186	12%		137/185	74%	
50+	225	33%	15/224	7%		203/222	91%	
Race/ethnicity[2]					0.03			0.76
White	395	58%	26/394	7%		280/394	71%	
Black	116	17%	11/116	9%		88/114	77%	
Hispanic	64	9%	4/64	6%		47/61	77%	
Native American	23	3%	3/23	13%		16/23	70%	
Other	5	1%	2/5	40%		4/5	80%	
Multiple races	83	12%	11/82	13%		60/81	74%	
Foreign born					0.59			0.45
No	659	96%	54/657	8%		477/651	73%	
Yes	27	4%	3/27	12%		18/27	67%	

1. Five transgender persons excluded because of the small number
2. Non-Hispanic racial categories exclude Hispanic ethnicities

Table 2: Socioeconomic characteristics and HIV and HCV prevalence among participants in the 2012 Seattle area NHBS-IDU3 survey

Socioeconomic characteristics	Participants N=686		HIV Prevalence N=684		p value HIV	HCV Prevalence N=678		p value HCV
	n	%	n/N	%HIV+		n/N	%HCV+	
Education					0.03			<0.01
High school or less	449	65%	30/449	7%		344/444	77%	
Post high school	212	31%	22/210	10%		134/209	64%	
College grad. (4 years)	25	4%	5/25	20%		17/25	68%	
Employed					0.88			0.04
No	647	94%	54/645	8%		472/639	74%	
Yes	39	6%	3/39	8%		23/39	59%	
Yearly income					<0.01			0.02
<$5,000	213	31%	14/213	7%		154/210	73%	
$5,000 - $9,999	173	26%	26/173	15%		140/173	81%	
$10,000 - $19,999	180	27%	10/180	6%		124/178	70%	
$20,000+	111	16%	6/111	5%		72/110	65%	
Homeless, currently					<0.01			0.03
No	380	55%	47/378	12%		263/377	70%	
Yes	306	45%	10/306	3%		232/301	77%	
Incarcerated, 12 months					<0.01			0.32
No	435	64%	45/434	10%		310/432	72%	
Yes	248	36%	11/247	4%		183/243	75%	

Table 3: Sexual orientation and sexual behaviors and HIV and HCV prevalence among participants in the 2012 Seattle area NHBS-IDU3 survey

Sexual orientation and sexual behaviors	Participants N=686		HIV Prevalence N=684		p value HIV	HCV Prevalence N=678		p value HCV
	n	%	n/N	% HIV+		n/N	% HCV+	
Male sexual orientation					<0.01			<0.01
Heterosexual	357	82%	14/357	4%		262/351	75%	
Bisexual	40	9%	3/40	8%		31/40	78%	
Homosexual	35	8%	23/35	66%		15/35	43%	
Female sexual orientation					0.54			0.20
Heterosexual	187	75%	9/186	5%		142/186	76%	
Bisexual	51	21%	4/50	8%		33/50	66%	
Homosexual	9	4%	1/9	11%		8/9	89%	
Last 12 months								
Male-male sex partners					<0.01			<0.01
No	616	90%	29/614	5%		456/608	75%	
Yes	65	10%	25/65	38%		36/65	55%	
No. of heterosexual sex partners among non-MSM					0.31			0.03
0	120	20%	8/120	7%		102/120	85%	
1	233	38%	8/233	3%		167/231	72%	
2-4	179	29%	11/179	6%		125/176	71%	
5+	82	13%	2/82	2%		62/81	77%	
Non-concordant UVAI among non-MSM[1]					0.31			0.17
No	431	71%	23/431	5%		328/428	77%	
Yes	177	29%	6/177	3%		124/174	71%	
No of male-male sex partners among MSM					0.052			<0.02
1	19	29%	3/19	16%		14/19	74%	
2-4	24	37%	12/24	50%		15/24	63%	
5+	22	34%	10/22	45%		7/22	32%	
Non-concordant UVAI among MSM[1]					0.09			<0.01
No	41	63%	19/41	46%		28/41	68%	
Yes	24	37%	6/24	25%		8/24	33%	

1. UVAI = Unprotected (no condom) vaginal or anal intercourse between partners of unknown or opposite HIV status.

Table 4: Drug use practices and HIV and HCV prevalence among participants in the 2012 Seattle area NHBS-IDU3 survey

Injection drug use practices	Participants N=686		HIV Prevalence N=684		p value HIV	HCV Prevalence N=678		p value HCV
	n	%	n/N	% HIV+		n/N	% HCV+	
Most common injection drug					<0.01			<0.01
Heroin	576	84%	27/574	5%		426/569	75%	
Speedballs	31	5%	1/31	3%		28/30	93%	
Amphetamines	62	9%	26/62	42%		31/62	50%	
Other	17	2%	3/17	18%		10/17	59%	
Last 12 months								
MSM status by most common injection drug					<0.01			<0.01
Non-MSM, not amphetamines	584	86%	25/584	4%		437/578	76%	
Non-MSM, amphetamines	30	4%	4/30	13%		19/30	63%	
MSM, not amphetamines	35	5%	5/35	14%		25/35	71%	
MSM, amphetamines	30	4%	20/30	67%		11/30	37%	
Average injection frequency					<0.01			0.01
>1/day	427	62%	19/426	4%		324/421	77%	
1/day – 1/week	170	25%	26/169	15%		113/168	67%	
<1/week	88	13%	12/88	14%		57/88	65%	
Receptive needle sharing					0.01			0.33
No	462	67%	47/460	10%		326/454	72%	
Yes	223	33%	10/223	4%		168/223	75%	
Shared cooker					<0.01			0.03
No	285	42%	34/284	12%		190/278	68%	
Yes	399	58%	23/398	6%		303/398	76%	
Shared cotton					0.02			0.01
No	364	53%	39/363	11%		246/357	69%	
Yes	319	47%	18/318	6%		246/318	77%	
Backloaded					0.06			0.39
No	506	74%	48/504	10%		359/498	72%	
Yes	179	26%	9/179	5%		135/179	75%	

Table 5: Substance use treatment history and source of syringes among participants in the 2012 Seattle area NHBS-IDU3 survey

Substance use treatment and source of syringes	N=686 n (%)
Substance use treatment	
Drug treatment ever	567 (83%)
Drug treatment last 12 months	262 (38%)
Alcohol treatment last 12 months	54 (8%)
Most common source of syringes last 12 months	
Needle exchange	473 (69%)
Friend, relative, sex partner	95 (14%)
Pharmacy	90 (13%)
Other	23 (3%)
Any source of syringes last 12 months	
Needle exchange	593 (87%)
Pharmacy	374 (55%)
Friend, acquaintance, sex partner, relative	523 (76%)
Doctor's office, clinic, hospital	67 (10%)
Drug dealer, shooting gallery, hit house, off the street	284 (41%)

Table 6: Health-related factors among participants in the 2012 Seattle area NHBS-IDU3 survey overall and by self-reported HIV-positive and HCV-positive status

Health history	Total N=686 n (%)	Self-reported HIV positive N=51 n (%)	Self-reported HCV positive N=402[1] n (%)
Current health insurance	490 (72%)	46 (92%)	314 (78%)
Medicaid	361 (53%)	37 (73%)	237 (59%)
Medicare	127 (19%)	16 (31%)	83 (21%)
Visited HCP last 12 months	589 (86%)	50 (98%)	356 (89%)
Visited HCP for HIV	NA	49 (96%)	NA
HIV antiretroviral treatment, current	NA	33 (65%)	NA
HCV antiretroviral treatment, ever	NA	NA	41 (10%)
HAV vaccination	246 (36%)	19 (37%)	169 (42%)
HBV vaccination	292 (43%)	23 (45%)	193 (48%)
Alcohol binge last 30 days	202 (29%)	15 (29%)	116 (29%)

1. The number of self-reported HCV positives is larger than the number shown in Table 1 because not all self-reported HCV positives tested positive for HCV antibodies.

Table 7: HIV and HCV testing among participants in the 2012 Seattle area NHBS-IDU3 survey

HIV and HCV testing history	Total N=686 n (%)
Ever tested	
Ever tested for HIV	643 (94%)
Ever tested for HCV	585 (85%)
Time since last HIV test (did not report being HIV+)	N=635 n (%)
<3 months	98 (15%)
3 - 5 months	85 (13%)
6 - 8 months	53 (8%)
9 - 11 months	42 (7%)
12 - 23 months	100 (16%)
24+ months	197 (31%)
Time unknown	17 (3%)
Never tested	42 (7%)

Figure 1: Resident zip codes among participants in the 2012 Seattle area NHBS-IDU3 survey

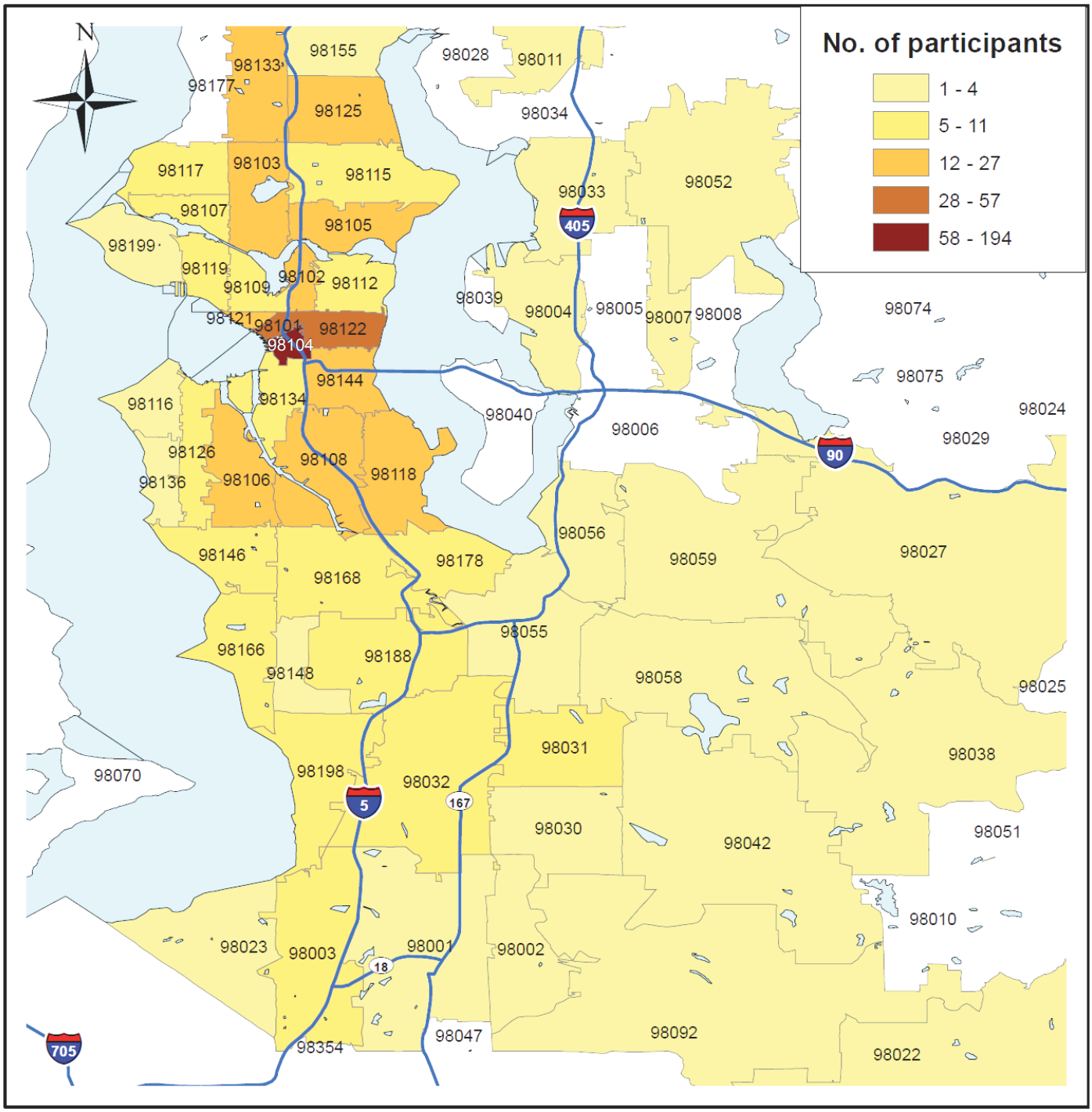


Figure 2: Time since HCV diagnosis among participants with self-reported HCV in the 2012 Seattle area NHBS-IDU3 survey

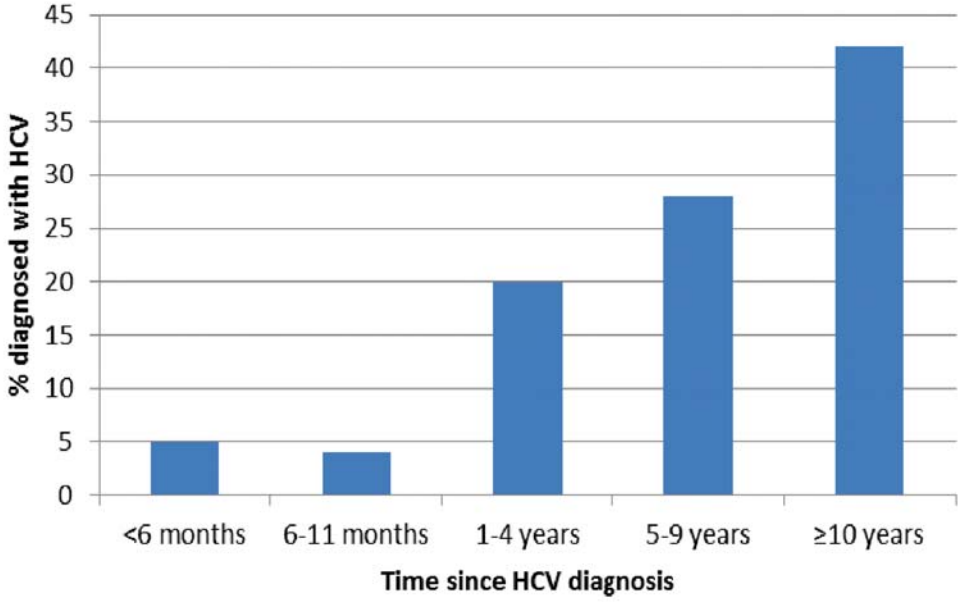
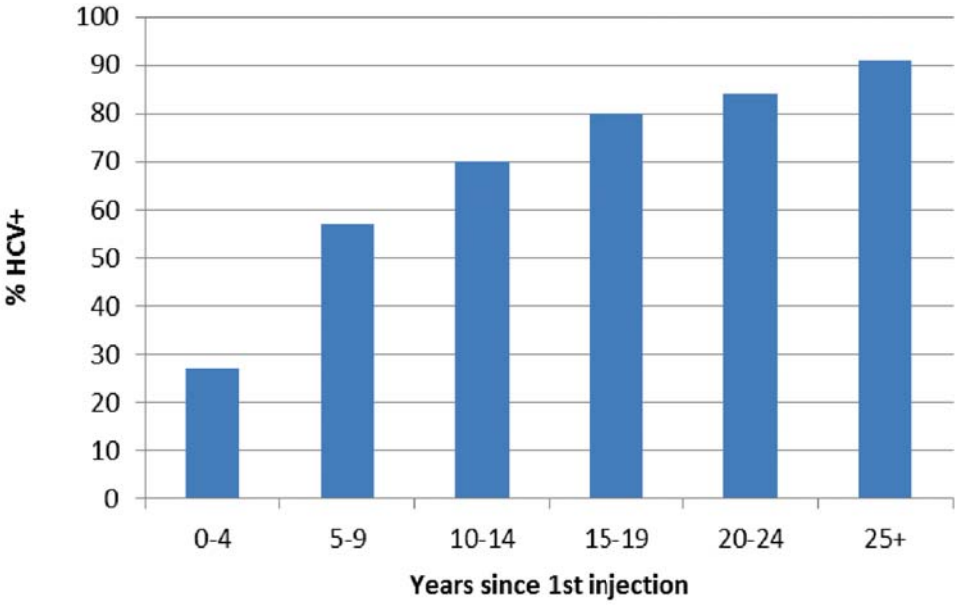


Figure 3. HCV seroprevalence by years since first injection among participants in the 2012 Seattle area NHBS-IDU3 survey



HIV Controllers and Antiretroviral Treatment

A small number of people with HIV infection are able to control viral replication without taking antiretrovirals. Known as controllers, these individuals maintain low viral loads without any antiretroviral therapy. Elite controllers, who have no detectable virus (<50 copies/ml on standard assays), comprise <1% of all people with HIV infection. In slightly higher numbers are viremic controllers, with low levels of circulating virus (<2000 copies/ml).

Factors associated with HIV control have not been fully elucidated. Some individuals have favorable HLA types (B57) and/or CCR5 co-receptor polymorphisms. Other potential mechanisms of control include the strength and/or specificity of an individual's cytotoxic T lymphocyte response to HIV. Yet there are many controllers for whom no specific explanation has been found. These individuals continue to be studied through cohort studies such as the Seattle HVTU's Long-term Nonprogessor/Controller Cohort (seattlevaccines.org) and the International HIV Controllers Study (hivcontollers.org). Understanding the factors leading to control in these unique individuals may contribute immunologic insights that help guide the development of an effective HIV vaccine.

The question of antiretroviral therapy for HIV controllers remains an area of uncertainty. Elite and viremic control have often been viewed as the virologic background for HIV long-term non-progressors, who retain stable CD4 counts after 10 or more years of HIV infection. Yet not all controllers will become long-term non-progressors, and controllers may have CD4 declines despite ongoing virologic control. In addition, recent data show higher levels of inflammatory biomarkers and immune activation in controllers compared with HIV negative individuals and with HIV-positive individuals with viral loads suppressed by HAART. These observations contribute to the discussion on potential benefits of antiretroviral therapy for controllers.

DHHS Guidelines for initiating antiretroviral therapy include this statement: "The Panel has no recommendations for the management of controllers with high CD4 counts, but the fact that these individuals have higher than normal levels of inflammation and immune activation provides at least some rationale for treatment. Clinical trials assessing the potential benefit of therapy in these individuals are ongoing." One such study is enrolling locally. The ACTU has recently opened a protocol looking at the effects of Complera (co-formulated tenofovir/emtricitabine/rilpivirine) on immune activation and viral reservoirs in previously untreated HIV controllers.

Study details include:

Eligibility: viral load <500 copies/ml, any CD4, no previous antiretroviral therapy.

Length of study: 60 weeks with optional 48 week extension. The first 60 weeks include a 12 week lead-in period and 48 weeks on protocol-provided Complera. The optional additional 48 weeks allow for continued Complera or follow-up off-treatment.

Visits: Screening, enrollment, weeks 4, 12, 16, 24, 36, 48, 60 (with optional 72, 84, 108).

Benefits/Costs: Exams, lab tests, Complera provided at no cost. Participants receive $20 per study visit, starting at entry.

Contact: Janine Maenza, MD 206-667-5743 or ACTU main number 206-744-3184.

Contributed by Janine Maenza

UW AIDS Clinical Trials Unit—CURRENT STUDIES

Did You Know?

Our parent network, The AIDS Clinical Trials Group (ACTG), has redefined its mission.

We will shift our focus from optimizing antiretroviral therapy (ART) to investigating potential avenues to eradicate HIV from the body and to train the immune system of those with HIV infection to suppress the virus without relying on daily ARV therapy – which we refer to as a "functional" cure.

As well, we will continue to explore the management of complications that may come when a person with HIV survives for decades – especially the role inflammation and immune activation may play in heart disease and neurologic diseases.

We will continue research into treatments for HIV+ people co-infected with tuberculosis or hepatitis C virus.

And we continue to lend our experience with antiretroviral therapy as it broadens its preventative potential, by seeking individuals interested in participating in research studies investigating new agents for pre-exposure prophylaxis (PrEP).

This paradigm shift for our network will be reflected in what research studies we offer in Seattle via the UW AIDS Clinical Trials Unit.

This is big news – a great change in HIV research is before us all as we begin investigations into a cure for HIV.

Participating in a study is **an important decision.** We hope that talking with our staff – along with talking with a provider, a family member, or a friend – will help people to better understand the ins and outs of participating in research.

For referrals or additional information, call the **UW ACTU** at **206-744-3184** and ask for **Eric Helgeson.**

The Romidepsin Study

FOR HIV+ PEOPLE WITH AN UNDETECTABLE VIRAL LOAD
A CURE RESEARCH STUDY

This study will test whether one dose of an investigational drug called Romidepsin will wake up the sleeping or hidden HIV in the body and bring it out of hiding.

We will also test whether the body and HIV medicines will begin to clear out the exposed virus from areas in your body where HIV has been stored.

Exams, tests and the study medication are all provided at no cost.

Participants receive $20 per visit upon entry.

REQUIREMENTS:

- HIV+ men & women, 18 yrs or older
- CD4+ count is higher than 300
- Have an undetectable viral load with no blips
- Taking a Sustiva® or Isentress® based regimen
- No hepatitis B or C infection
- Are not pregnant, breast feeding or planning pregnancy
- Willing and able to have an IV infusion over 4 hours

LENGTH OF STUDY: 4 weeks (28 days)

SCHEDULE: Screening, pre-entry, entry, day 1, day 2, days 14 and 28

Waking Up the Reservoirs?

A major obstacle to eradicating HIV infection is the persistence of virus in long-lived cells, such as latently infected memory CD4+ T-cells.

Current estimates of the size of the latent HIV reservoir are that approximately one in a million memory CD4+ T cells contains integrated replication-competent HIV.

It has been estimated that the decay half-life of these cells exceeds 40 months and that more than 70 years of suppressive ART would be required to eliminate this viral reservoir.

In addition, recent studies have shown the majority of patients on ART with an undetectable viral load have residual viremia that can be detected by assays with single copy sensitivity, underscoring the need for new therapeutic approaches to eliminate these reservoirs.

Because viral replication in activated CD4+ T cells

usually results in the death of the cell, one approach for eliminating the HIV-1 reservoir is to specifically activate viral replication in latently-infected CD4+ T cells.

These cells would then be killed by the virus or following immune recognition. In the presence of ART the virus produced would be prevented from infecting new CD4+ T cells. The death of the reactivated latently infected cells may gradually deplete the HIV-1 reservoir.

Alternatively, based on recent *in vitro* work, induction of HIV from latency may not be sufficient to eliminate infected cells, and additional measures, such as stimulation of cytotoxic T lymphocytes, may be necessary to deplete cells that have been induced to express HIV.

Nevertheless, activation of virus from latency is likely to be required in any strategy that seeks to eliminate HIV infection.

The Controllers Study

FOR HIV+ PEOPLE WHO HAVE MAINTAINED A LOW VIRAL LOAD WITHOUT TAKING HIV MEDS:

HIV controllers are a small group of HIV+ people who are able to keep the virus from replicating *without* taking HIV medicine.

Despite 'controlling' their virus, controllers may still have T-cell activation and inflammation, which contribute to heart disease and other chronic conditions that affect all HIV+ people.

This study hopes to determine if starting antiretroviral therapy (ART) with Complera® will result in a significant reduction in immune activation, inflammation and the size of the latent HIV reservoir in HIV controllers.

All study medicines are provided at no cost as part of this study.

Participants receive $20 per visit upon entry.

REQUIREMENTS:

- HIV+ men and women 18 years or older
- Have never taken HIV medications
- Have a viral load below 500 for more than 2 years
- Be willing to start HIV medications for 48 weeks
- No evidence of certain drug resistant virus
- Not currently treated, or planning on being treated, for hepatitis C
- No hepatitis B infection
- Not pregnant, breast feeding or planning pregnancy

LENGTH OF STUDY: about 60 weeks

SCHEDULE: Screening, pre-entry, entry, and weeks 4, 12, 16, 24, 36, 48, and 60

If entering Step 2 of the study, add weeks 72, 84, and 108

Next-Prep Study is Now Enrolling Women

USING HIV MEDICINES TO PREVENT PEOPLE FROM GETTING HIV

Pre-exposure prophylaxis (PrEP) is a promising new biomedical intervention to prevent HIV transmission in HIV-negative people who are at–risk of becoming exposed to HIV.

This is an investigational study of new medicines for PrEP. The FDA has recently approved one drug, Truvada, for use to prevent HIV infection.

This study will assess the safety and tolerability of 4 antiretroviral (ARV) drug regimens used as PrEP to prevent HIV transmission in

- heterosexual women
- transgender women & men
- gay & bisexual men
- other men who have sex with men

Participants will be randomly assigned (like flipping a coin) to one of 4 groups:

- Group A: Selzentry + Emtriva placebo + Viread placebo
- Group B: Selzentry + Emtriva + Viread placebo
- Group C: Selzentry + Emtriva Placebo + Viread
- Group D: Selzentry placebo + Emtriva placebo+ Viread

Previous classes of anti-HIV medications have worked only after the virus has gotten inside the cell and has already been doing some of its infection processes.

This new class of medication works much earlier, so that it blocks the virus's ability to get inside the cell to begin with.

Approved HIV medicines used for PrEP must be taken every day in order to work.

Exams, lab tests, and all study drugs are provided at no cost.

Participants will receive $20.00 per study visit, starting at entry.

REQUIREMENTS:

- Were born female or male, age 18 y/o & older
- Had receptive OR insertive anal intercourse without using condoms with either an HIV-positive male partner OR a male partner of unknown HIV status within 3 months of entering the study
- Not enrolled in an HIV vaccine trial and received active drug (not a placebo)
- Not enrolled in any other HIV interventional research study
- Have not used HIV medicines (for PEP or PrEP) 90 days prior to entry
- Are willing to undergo all required study procedures (including sexual assessment by computer assisted self-interview, use of a drug monitoring device, and text messaging)

LENGTH OF STUDY: About 49 weeks

SCHEDULE: Screening, entry, and weeks 2, 4, 8, 16, 24, 32, 40, 48 and 49

More About Selzentry and the CCR5 Receptor

Selzentry® (Maraviroc) is the first "attachment inhibitor" drug. It's a brand new class of medicines that works by what we call a "new mechanism of action," because it stops HIV from getting inside of a human immune cell.

This is important, because when a medicine works by a new mechanism of action, it is going to be active against viruses that have become resistant or non-responsive to previous classes of HIV meds.

Rather than fighting HIV inside white blood cells (like most antiretrovirals used to treat infection with HIV) maraviroc prevents the virus from entering uninfected cells.

It does this by blocking the predominant route of entry, the CCR5 co-receptor, a protein on the surface of the your immune cells.

When maraviroc blocks this receptor, HIV cannot infect that cell.

TB Prevention Study

FOR HIV+ PEOPLE WHO HAVE LATENT TUBERCULOSIS

Tuberculosis (TB) is an infection caused by bacteria. TB usually affects the lungs, but sometimes can affect other organs, especially for HIV+ people with a CD4 cell count under 200.

TB is a very serious disease worldwide. Almost 1/3 of the world's population, and 1/3 of people with HIV, are infected with TB. One in ten people living with HIV will get active TB within a year of being diagnosed with HIV.

The rate of TB for people with HIV in the United States is 40 times the rate for people who aren't HIV infected. TB can make HIV multiply faster, lower the CD4 cell count, and make HIV disease worse.

Treatments for preventing TB take a long time, and can be difficult to take at the same time as HIV medicines.

The purpose of this study is to see if treatment with a four–week daily regimen of Rifapentine/Isoniazid is safe and effective at preventing active TB when compared to a standard nine–month daily regimen with Isoniazid.

Exams, lab tests, Rifapentine, Isoniazid and vitamin B6 are provided at no cost.

Participants will receive $20.00 per study visit, starting at entry

REQUIREMENTS:

- HIV+ men and women, age 18 and up
- Have a +TB skin or blood test
- No history of treatment for tuberculosis in last 2 years
- Not on protease inhibitor or raltegravir-based regimen NOR planning to start one within 4 weeks of entry
- No acute hepatitis B or C liver cirhosis

LENGTH OF STUDY: About 4 years

SCHEDULE: Screening, entry, weeks 2, 4, 8, 12, 16, 20, 24, 36, 48, and every 12 weeks starting at week 48

Why Is Preventing Active TB Important to People Living with HIV?

For many people, TB is the first sign of immune dysfunction associated with HIV infection, and active TB is an AIDS-defining illness. The good news is that TB treatment leads to lower HIV levels in people with both infections.

The risk of developing active tuberculosis is much higher in people who are infected with HIV. Because HIV weakens the immune system, people who have both HIV and TB are 40 times more likely to develop active, infectious TB than people who are not HIV+.

One of the most important aspects of having HIV and TB is that they both make each other worse. TB makes HIV multiply faster and HIV helps TB become active.

It is very important for people who are HIV+ to be tested for TB. If infected with TB, persons who are HIV+ need to complete preventive therapy as soon as possible to prevent the TB germ from causing the active disease of tuberculosis, causing HIV viral load to sky rocket, making them sick and possibly even killing them.

It is not easy to treat both TB and HIV at the same time. The drugs used to treat TB and HIV can both cause damage to the liver and kidneys. Also there can be negative drug interactions between the medications used to fight these two individual problems.

It is not easy to handle the side effects of treating TB and treatment may take a long time, but TB can be cured.

Our Commitment To You

A study visit at the UW AIDS Clinical Trials Unit (ACTU) includes physical examinations, updating your health status and obtaining a wide variety of often costly laboratory tests.

Our commitment to you is to use your contributions to our studies wisely and respectfully as we monitor and evaluate your physical health and response to the study drug.

This also includes providing you with accurate, up-to-date information about HIV infection and its effect on your body, and steps you can take to minimize its impact.

We will also keep you informed of any new information about the study medications you are taking.

And once the study has been completed, we will share the results with you.

Progress in conquering HIV infection and AIDS is a team effort, and you are a critical and much appreciated part of that team.

The Role of Research Studies

HIV/AIDS clinical trials are carefully designed research studies that involve people and are designed to answer specific questions about the safety and effectiveness of treatment for HIV/AIDS and related conditions.

Clinical trials are vitally important because there are no other direct ways to learn how different people respond to medications, treatments, or therapeutic approaches.

Clinical trials may study experimental medications to treat HIV and AIDS, FDA approved medications used in new ways or in new combinations, or medications to prevent or treat related infections. They may also study ways to help persons manage their HIV/AIDS medications and the long-term general health of persons with HIV/AIDS.

Clinical trials and laboratory studies conducted by the ACTG have made major contributions to:

- optimizing antiretroviral therapy (ART)
- managing drug resistance
- preventing and treating co-infections
- evaluating acute and long-term toxicities
- demonstrating the importance of pharmacogenomics in predicting drug toxicities

Results of these studies have helped establish the standard for the management of HIV disease and form the basis of current treatment guidelines.

This progress in the treatment of HIV-1-infected individuals has resulted in dramatic reductions in AIDS mortality in the U.S. and other countries of the developed world.

UW AIDS Clinical Trials Unit

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