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

Credits

This 79th edition of the HIV/AIDS Epidemiology Report includes data available through the end of December 2011. 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 Faythe Crosby and Christy Johnson (disease investigation), Susan Bosse (lab liaison), Sandy Hitchcock (data entry and quality assurance), Shirley Zhang and Leslie Pringle (data management), and Amy Bennett, Jen Reuer and Christina Thibault (epidemiologists). Note that Faythe Crosby retired from the health department January 2012. We all miss her and wish her an excellent retirement.

HIV/AIDS Epidemiology Report Co-editors:

HIV/AIDS Epidemiology Program
Jim Kent, MS, Senior Epidemiologist and
Susan Buskin, PhD, MPH, Senior Epidemiologist
PHSKC HIV/AIDS Epidemiology
401 5th Avenue, Suite 1152, Seattle, WA 98104

Infectious Disease Assessment Unit
Tom Jaenicke, MPH, MBA, MES
Section Manager/Senior Epidemiologist
Washington State Department of Health
PO Box 47838, Olympia, WA 98504-7838

Contributors to this Issue

Public Health – Seattle & King County

- Elizabeth Barash, MPH
- Amy Bennett, MPH
- Richard Burt, PhD
- Nadine Snyder, BA
- Christina Thibault, MPH
- Hanne Thiede, DVM, MPH

University of Washington

- Julie Dombrowski, MD, MPH
- Shelia Dunaway, MD
- Matt Golden, MD, MPH
- Joanne Stekler, MD, MPH

Seattle HIV Vaccine Trials Unit

- Ro Yoon, BA, BS
- Jeff Schouten, MD, JD

HIV/AIDS Reporting Requirements

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

Washington health care providers are required to report all HIV infections, regardless of the date of the patient's initial diagnosis, to the health department. Providers are also required to report new diagnoses of AIDS in a person previously diagnosed with HIV infection. Local health department officials forward case reports to the 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.

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To be included on the mailing list or for address corrections,
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HIV/AIDS Epidemiology and Surveillance News

Executive Summary

Report Summary

The first section of this report is comprised of tables and figures that summarize HIV reports through December 31, 2011. Highlights include:

- 11,216 documented people living with HIV or AIDS (PLWHA) were residents of Washington state (which has an estimated 11,500 – 12,700 PLWHA, Snapshot and Table 1).
- 6,935 documented PLWHA were residents of King County (which has an estimated total 7,200 – 8,000 PLWHA, Snapshot and Table 1).
- After King County with 62% of PLWHA, the most highly-impacted areas in Washington are Pierce County with 9% of PLWHA, Snohomish County with 6% of PLWHA and Clark County and Spokane County, each with 4% of PLWHA (Table 2).
- In King County, males comprise 90% of PLWHA (Table 3), most of them men who have sex with men (MSM) (77%, Table 4).
- In Washington state PLWHA were 86% male, and male PLWHA were 72% MSM (Table 5).
- The most common decade of life for diagnosis of HIV was 30-39 for men in King County and statewide. For women, it was both 20-29 and 30-39 in King County, and 20-29 statewide (Table 6).
- 16% of Washington state and 17% of King County PLWHA were foreign-born (Table 7).

Between 2002 and 2010, the percent of newly diagnosed PLWHA who were MSM increased and the percent of injection drug users decreased. The proportion of individuals under age 30 years, who are Hispanic, and who were born out of the U.S. all increased relative to others newly diagnosed with HIV (Tables 8, 9).

HIV Infection, Diagnosis, Care Status, and Viral Load Level (The HIV Care Cascade) among King County Residents

This article summarizes the HIV Care Cascade among King County residents. There are an estimated 7,200 people living with HIV or AIDS (PLWHA) in King County. Of these 7,200 people, approximately 85% percent (6,107), have been diagnosed. Of those who have been diagnosed, about 90% (5,496) were linked to care within three months of their diagnosis. Of those 5,496 individuals linked to care, approximately 87% (4,798) were in care in 2011. Of those 4,798 in care, approximately 91% (4,366) were continuously engaged in care or were virally suppressed (<200 particles per microliter). Of all 7,200 estimated individuals living with HIV, 54% (3,895) had a suppressed viral load.

HIV Testing Attitudes Among NHBS Participants

The Centers for Disease Control and Prevention sponsor the National HIV Behavioral Surveillance system (NHBS) to monitor HIV-related risk behaviors and seroprevalence and assess the use of prevention services in populations at increased risk for HIV. The populations include men who have sex with men (MSM), injection drug users (IDU) and heterosexuals at increased risk for HIV (HET). Each population is surveyed every third year using a standardized protocol and questionnaire, and HIV testing is offered to all participants, including those with known HIV infection. About three-quarters of Seattle area NHBS participants surveyed between 2008 and 2010 believed that HIV testing is not routinely performed when someone visits their doctor unless they ask for it. The vast majority of participants in each of the three survey samples supported treating HIV testing just like screening for other diseases and including it as part of regular check-ups or exams. NHBS participants who reported being HIV negative or not knowing their status were even more likely to be in favor, which is important since they represent the population who is targeted for testing. We also found that females and younger MSM were particularly likely to favor routine testing. These findings demonstrate overwhelming support for routinizing HIV testing among populations at increased risk for HIV who were surveyed as part of NHBS in the Seattle area.

Publicly Funded HIV Testing in King County

This article summarizes the extent of HIV testing, characteristics of the tested population, and rates of new confidential diagnoses among individuals testing for HIV at publicly funded testing sites in King County. Testing was conducted at the public health laboratory or by Disease Investigation Specialists, and included three types of HIV tests: 1) serum antibody tests; 2) rapid antibody tests; and, 3) HIV RNA testing. Serum testing (blood with cells and clotting factors removed) includes an EIA screening test and a Western Blot (WB) confirmatory test. Each year from 2007 through 2011, public health conducted an average of 19,220 HIV tests on an average of 8,966 individuals (Figures 1a and 1b). Over three quarters of HIV tests were conducted at two sites – the HIV/STD Program's STD Clinic at Harborview Medical Center and at the Gay City Health Project Wellness Center. Most tests were serologic (59%), followed by rapid (21%) and RNA (20%). Publicly funded HIV testing identifies approximately 100 individuals infected with HIV each year. These account for roughly one quarter of reported HIV cases for King County. Men who have sex with men (MSM), and especially MSM who also use injection drugs (MSM-IDU) were more likely to test HIV positive relative to those in other risk categories. Nearly 20 people were diagnosed with HIV each year who did not report MSM or IDU exposures, speaking to the importance of CDC's universal testing guidelines.

Perceived and Internal Stigma Among Men Attending a Gay Pride Event

This article summarizes a survey that Public Health – Seattle & King County conducted in 2010 and 2011 at the Seattle Gay Pride parade to help describe how sexual orientation related stigma affects sexual behavior, HIV testing and HIV prevalence among MSM. The survey among 695 men who have sex with men (MSM) asked several questions, including two related to sexual orientation stigma: 1) Internal stigma: "How comfortable or uncomfortable do you feel about your sexual identity?" and 2) Perceived stigma: "How accepting are most people in your community of gay and bisexual people?" Answers were recorded on a five-point scale of very uncomfortable/unaccepting to very comfortable/accepting. Overall, the majority of men (90%) felt that most people in their community were somewhat accepting to very accepting of gay and bisexual men and 83% of participants reported that they were somewhat to very comfortable about their sexual identity. Non-whites were more likely to report experiencing perceived stigma. Non-whites who experienced perceived stigma were more likely to not to have any sex partners in the last 12 months. Among non-whites who reported experiencing internal stigma, a higher percentage reported having three or more sexual partners in the last 12 months relative to whites.

Seattle HIV Vaccine Trials Unit: Hope Takes Action

The Seattle HIV Vaccine Trials Unit is participating in a vaccine project called *Hope Takes Action*. Also known as the HVTN 505 study, the project, which has been expanded from 1,350 to 2,200 HIV-negative men and transgender women who have sex with men, builds upon a vaccine trial in Thailand and other pre-exposure prophylaxis (PrEP) research to address three questions: 1) Can the vaccine regimen protect against HIV infection? 2) Can the vaccine regimen lower viral load among people who do become infected? and, 3) Is the vaccine regimen safe and well-tolerated?

Next Steps in Pre-exposure Prophylaxis (PrEP) Research

This article briefly summarizes important developments in pre-exposure prophylaxis (PrEP) research. The findings from studies have not been consistent, with some showing promise and others not demonstrating benefit. The iPrEx study results published in November 2010 showed that Truvada reduced the risk of HIV acquisition overall by 44 percent and by up to 73 percent among men who reported taking the drug consistently (at least 90 percent of days). Among men who had detectable drug in their blood, the risk was reduced by more than 90 percent. The Partners PrEP study results published in July 2011 demonstrated that among 4,758 heterosexual serodiscordant couples in Kenya and Uganda, oral Truvada reduced their risk of HIV acquisition by 73 percent, and oral tenofovir reduced HIV acquisition by 63% compared with placebo. Presented at the same conference were the preliminary results of

the CDC-sponsored Botswana TDF2 trial in 1,200 HIV-negative heterosexual men and women. Oral Truvada for PrEP reduced HIV acquisition by 63% in this study. Two other studies, the FEM-PrEP and portions of the Microbicide Trials Network, did not show efficacy. Researchers in Africa and the U.S. are continuing to explore ways to prevent exposure, and the University of Washington AIDS Clinical Trials Unit will be one of 12 sites in the U.S. to study the safety of tolerability of four separate oral PrEP regimens.

Snapshot of HIV and AIDS Numbers in King County and Washington

	King County	Washington
Estimated[a] number living with HIV/AIDS	7,200 to 8,000	11,500 to 12,700
Estimated new HIV infections 2010	320 to 340	500 to 600
Estimated 2010 deaths among people with HIV or AIDS	75	130
Proportion with HIV who know their HIV status	80% to 90%	80% to 90%
Reported[a] number of people living with HIV/AIDS	6,935	11,216

Table 1: Surveillance of reported HIV/AIDS cases, deaths, and people living with HIV/AIDS - King County, other Washington counties, Washington, and the United States (reported as of 12/31/2011)

		HIV	AIDS	Total
King County	New cases reported in 2nd half 2011	106	30	136
	Cases reported year-to-date	211	88	299
	Cumulative Cases	3,245	8,373	11,618
	Cumulative Deaths	182	4,501	4,683
	Persons Living (prevalent cases)	3,063	3,872	**6,935**
Other Counties	New cases reported in 2nd half 2011	71	36	107
	Cases reported year-to-date	160	82	242
	Cumulative Cases	1,931	4,979	6,910
	Cumulative Deaths	152	2,477	2,629
	Persons Living (prevalent cases)	1,779	2,502	**4,281**
Washington State	New cases reported in 2nd half 2011	177	66	243
	Cases reported year-to-date	371	170	541
	Cumulative Cases	5,176	13,352	18,528
	Cumulative Deaths	334	6,978	7,312
	Persons Living (prevalent cases)	4,842	6,374	**11,216**
United States[b]	Cases reported as of 12/31/2010			
	Cumulative Cases	Unknown	1,163,575	Unknown
	Cumulative Deaths	Unknown	641,976	Unknown
	Persons Living (prevalent cases)	282,172	521,599	**803,771**

a. 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 infection but not yet reported.
   iii. An unknown number of people (10-20% of the total) infected with HIV but not yet diagnosed or reported.

b. U.S. data includes 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, Washington (reported as of 12/31/2011)

County	Cumulative Cases	Deaths		Presumed Living			
		No.	%[a]	HIV	AIDS	Total	%[b]
Adams	7	1	14%	0	6	6	0.1%
Asotin	26	8	31%	6	12	18	0.2%
Benton	147	43	29%	37	67	104	0.9%
Chelan	75	27	36%	23	25	48	0.4%
Clallam	86	40	47%	19	27	46	0.4%
Clark	725	248	34%	209	268	477	4.3%
Columbia	7	3	43%	0	4	4	0.0%
Cowlitz	156	63	40%	45	48	93	0.8%
Douglas	9	2	22%	3	4	7	0.1%
Ferry	7	6	86%	0	1	1	0.0%
Franklin	88	21	24%	27	40	67	0.6%
Garfield	1	0	0%	1	0	1	0.0%
Grant	58	22	38%	14	22	36	0.3%
Grays Harbor	92	36	39%	21	35	56	0.5%
Island	93	40	43%	23	30	53	0.5%
Jefferson	40	18	45%	9	13	22	0.2%
King	11,618	4,683	40%	3,063	3,872	6,935	61.8%
Kitsap	324	131	40%	76	117	193	1.7%
Kittitas	24	10	42%	3	11	14	0.1%
Klickitat	16	7	44%	6	3	9	0.1%
Lewis	60	28	47%	10	22	32	0.3%
Lincoln	4	2	50%	0	2	2	0.0%
Mason	129	33	26%	38	58	96	0.9%
Okanogan	39	12	31%	8	19	27	0.2%
Pacific	34	13	38%	12	9	21	0.2%
Pend Orielle	11	6	55%	1	4	5	0.0%
Pierce	1,700	672	40%	482	546	1,028	9.2%
San Juan	29	12	41%	6	11	17	0.2%
Skagit	105	43	41%	23	39	62	0.6%
Skamania	8	7	88%	0	1	1	0.0%
Snohomish	1,098	391	36%	278	429	707	6.3%
Spokane	768	330	43%	176	262	438	3.9%
Stevens	27	15	56%	7	5	12	0.1%
Thurston	294	100	34%	73	121	194	1.7%
Wahkiakum	3	0	0%	1	2	3	0.0%
Walla Walla	65	33	51%	7	25	32	0.3%
Whatcom	247	98	40%	63	86	149	1.3%
Whitman	22	4	18%	5	13	18	0.2%
Yakima	286	104	36%	67	115	182	1.6%
Total	**18,528**	**7,312**	**39.0%**	**4,842**	**6,374**	**11,216**	**100%**

[a] Percent of county cases who have died (row %).
[b] Percent of total presumed living cases in Washington (column %).

Table 3: Demographic characteristics of people presumed living with HIV/AIDS – King County, other Washington counties, Washington, and the United States (reported as of 12/31/2011)

	King County		Other Counties		Washington		Estimated U.S.[a]	
	N	%	N	%	N	%	N	%
Sex								
Male	6,213	90%	3,439	80%	9,652	86%	597,928	74%
Female	722	10%	842	20%	1,564	14%	194,656	24%
Missing Sex							11,187	
Age Group at Diagnosis of HIV								
Under 13 years	36	1%	54	1%	90	1%	11,187	1%
13-19 years	129	2%	112	3%	241	2%	*Not Known*	
20-29 years	1,986	29%	1,260	29%	3,246	29%	*Not Known*	
30-39 years	2,870	41%	1,498	35%	4,368	39%	*Not Known*	
40-49 years	1,436	21%	939	22%	2,375	21%	*Not Known*	
50-59 years	398	6%	315	7%	713	6%	*Not Known*	
60 years and over	80	1%	103	2%	183	2%	*Not Known*	
Current Age as of 12/31/2011								
Under 13 years	13	0%	22	1%	35	0%	2,987	0%
13-19 years	29	0%	25	1%	54	0%	8,404	1%
20-29 years	508	7%	401	9%	909	8%	73,657	9%
30-39 years	1,291	19%	844	20%	2,135	19%	158,941	20%
40-49 years	2,703	39%	1,525	36%	4,228	38%	296,894	37%
50-59 years	1,806	26%	1,052	25%	2,858	25%	195,657	24%
60 years and over	585	8%	412	10%	997	9%	67,231	8%
Race/Ethnicity[b]								
White	4,632	67%	2,923	68%	7,555	67%	267,289	33%
Black	1,164	17%	547	13%	1,711	15%	325,405	40%
Hispanic	732	11%	531	12%	1,263	11%	163,104	20%
Asian & Pacific Islander	235	3%	142	3%	377	3%	8,342	1%
Asian	*216*	*3%*	*119*	*3%*	*335*	*3%*	*7,789*	*1%*
Native Hawaiian & Other PI	*19*	*0%*	*23*	*1%*	*42*	*0%*	*553*	*0%*
Native American or Alaskan Native	74	1%	89	2%	163	1%	2,931	0%
Multiple Race	97	1%	35	1%	132	1%	11,170	1%
Unknown Race	1	0%	14	0%	15	0%	25,530	3%
HIV Exposure Category								
Male-male sex	4,792	69%	2,145	50%	6,937	62%	400,388	50%
Injection drug use (IDU)	330	5%	493	12%	823	7%	133,918	17%
IDU & male-male sex	592	9%	359	8%	951	8%	45,833	6%
Heterosexual contact[c]	682	10%	769	18%	1,451	13%	208,723	26%
Blood product exposure[d]	29	0%	34	1%	63	1%	N/A[a]	N/A[a]
Perinatal exposure	30	0%	47	1%	77	1%	9,809	1%
Other/Undetermined[d]	480	7%	434	10%	914	8%	5,100	1%
Total	**6,935**	**100%**	**4,281**	**100%**	**11,216**	**100%**	**803,771**	**100%**

[a] U.S. persons living with HIV/AIDS were estimated for 12/31/2009 from data reported through 12/31/2010 and include AIDS cases for 50 states and 6 dependent areas, and HIV cases for 46 states and 6 dependent areas with confidential name-based HIV infection reporting as of 2006. Detailed data were not available for the remaining states. Unknown exposure cases are redistributed, and blood product cases are included as 'Other/Undetermined'.

i. CDC data for age at diagnosis were not available. The current age data were calculated as of 12/31/2009.

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

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

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

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

Table 4: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – King County (reported as of 12/31/2011)

	White[a]		Black[a]		Hispanic		Asian & PI[a,b]		Native Am/AN[a,c]		Total[d]	
HIV Exposure Category	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Male												
Male-male sex	3,643	79%	400	34%	502	69%	156	66%	29	39%	4,792	69%
Injection drug use (IDU)	110	2%	61	5%	32	4%	5	2%	6	8%	216	3%
IDU & male-male sex	465	10%	41	4%	49	7%	5	2%	14	19%	592	9%
Heterosexual contact	45	1%	108	9%	25	3%	6	3%	0	0%	185	3%
Blood product exposure	14	0%	3	0%	0	0%	0	0%	0	0%	17	0%
Perinatal exposure	1	0%	8	1%	0	0%	1	0%	0	0%	11	0%
Undetermined/other	108	2%	179	15%	73	10%	34	14%	2	3%	400	6%
Male Subtotal	**4,386**	**95%**	**800**	**69%**	**681**	**93%**	**207**	**88%**	**51**	**69%**	**6,213**	**90%**
Female												
Injection drug use (IDU)	65	1%	33	3%	3	0%	0	0%	10	14%	114	2%
Heterosexual contact[e]	156	3%	262	23%	39	5%	22	9%	12	16%	497	7%
Blood product exposure	4	0%	8	1%	0	0%	0	0%	0	0%	12	0%
Perinatal exposure	3	0%	13	1%	2	0%	1	0%	0	0%	19	0%
Undetermined/other	18	0%	48	4%	7	1%	5	2%	1	1%	80	1%
Female Subtotal	**246**	**5%**	**364**	**31%**	**51**	**7%**	**28**	**12%**	**23**	**31%**	**722**	**10%**
Total	**4,632**	**100%**	**1,164**	**100%**	**732**	**100%**	**235**	**100%**	**74**	**100%**	**6,935**	**100%**

Table 5: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – Washington (reported as of 12/31/2011)

	White[a]		Black[a]		Hispanic		Asian & PI[a,b]		Native Am/AN[a,c]		Total[d]	
HIV Exposure Category	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Male												
Male-male sex	5,285	70%	564	33%	727	58%	214	57%	57	35%	6,937	62%
Injection drug use (IDU)	335	4%	102	6%	68	5%	8	2%	14	9%	530	5%
IDU & male-male sex	752	10%	66	4%	79	6%	8	2%	21	13%	951	8%
Heterosexual contact	138	2%	167	10%	67	5%	15	4%	8	5%	398	4%
Blood product exposure	39	1%	3	0%	2	0%	0	0%	0	0%	44	0%
Perinatal exposure	7	0%	21	1%	2	0%	2	1%	1	1%	35	0%
Undetermined/other	292	4%	238	14%	160	13%	54	14%	6	4%	757	7%
Male Subtotal	**6,848**	**91%**	**1,161**	**68%**	**1,105**	**87%**	**301**	**80%**	**107**	**66%**	**9,652**	**86%**
Female												
Injection drug use (IDU)	190	3%	59	3%	17	1%	4	1%	20	12%	293	3%
Heterosexual contact[e]	447	6%	384	22%	119	9%	56	15%	34	21%	1,053	9%
Blood product exposure	6	0%	9	1%	1	0%	3	1%	0	0%	19	0%
Perinatal exposure	10	0%	24	1%	5	0%	3	1%	0	0%	42	0%
Undetermined/other	54	1%	74	4%	16	1%	10	3%	2	1%	157	1%
Female Subtotal	**707**	**9%**	**550**	**32%**	**158**	**13%**	**76**	**20%**	**56**	**34%**	**1,564**	**14%**
Total	**7,555**	**100%**	**1,711**	**100%**	**1,263**	**100%**	**377**	**100%**	**163**	**100%**	**11,216**	**100%**

[a] And not Hispanic. All race and ethnicity categories are mutually exclusive.
[b] Due to small cell sizes, data have been combined for Asians, Native Hawaiians, and other Pacific Islanders.
[c] Native American or Alaska Native.
[d] Totals include 98 King County and 132 Washington persons classified as multiple race, and 0 King County and 15 Washington persons with missing race.
[e] Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status and HIV risk behaviors are unknown).

Table 6: People presumed living with HIV/AIDS by gender and age at HIV diagnosis – King County and Washington (reported as of 12/31/2011)

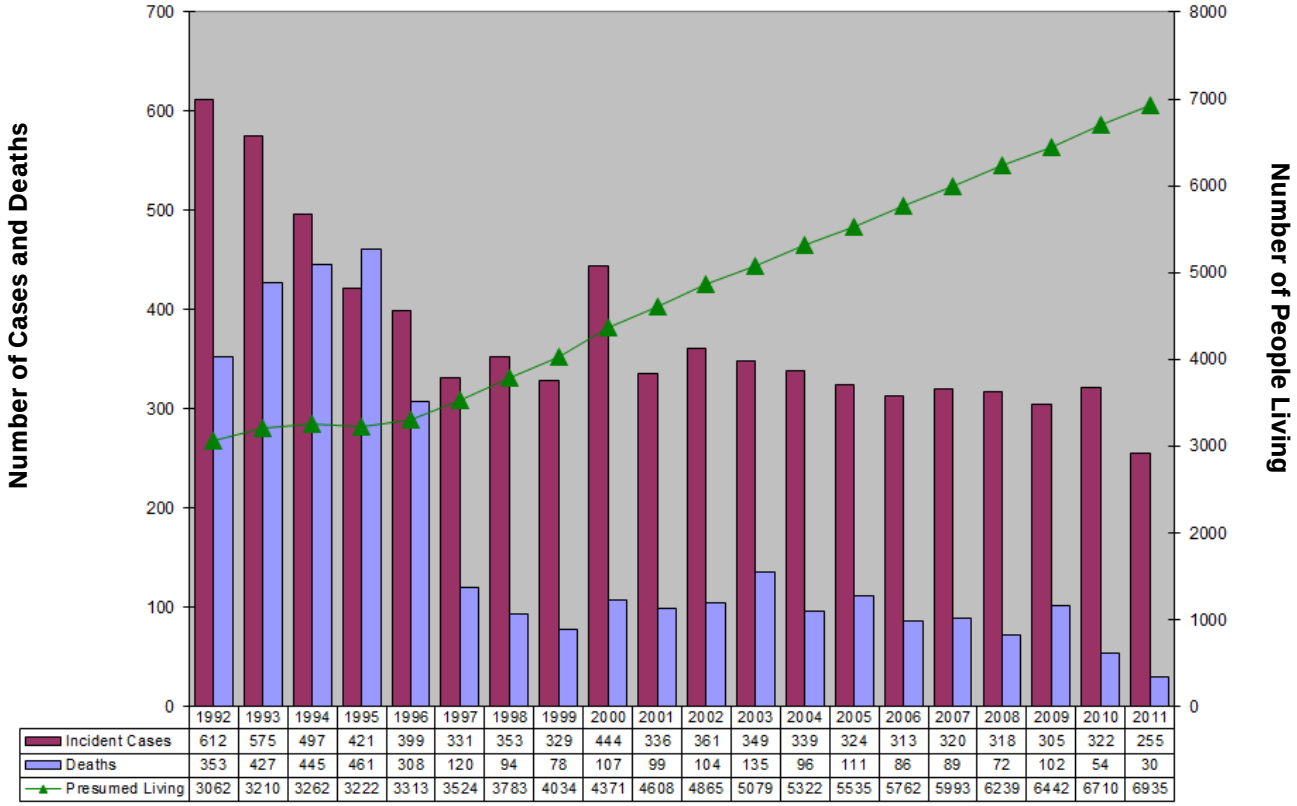
	King County				Washington			
Age at HIV Diagnosis	**Male**		**Female**		**Male**		**Female**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Under 13 years	16	0%	20	3%	42	0%	48	3%
13-19 years	89	1%	40	6%	158	2%	83	5%
20-24 years	641	10%	95	13%	1,055	11%	230	15%
25-29 years	1,109	18%	141	20%	1,678	17%	283	18%
30-34 years	1,403	23%	134	19%	2,060	21%	269	17%
35-39 years	1,233	20%	100	14%	1,815	19%	224	14%
40-44 years	831	13%	71	10%	1,301	13%	176	11%
45-49 years	486	8%	48	7%	794	8%	104	7%
50-54 years	220	4%	40	6%	385	4%	73	5%
55-59 years	115	2%	23	3%	206	2%	49	3%
60 years and over	70	1%	10	1%	158	2%	25	2%
Total	**6,213**	**100%**	**722**	**100%**	**9,652**	**100%**	**1,564**	**100%**

Table 7: People presumed living with HIV/AIDS by race or ethnicity and place of birth[a] – King County and Washington (reported as of 12/31/2011)

	King County				Washington			
Race / Ethnicity	**U.S.-born**		**Foreign-born**		**U.S.-born**		**Foreign-born**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
White, non-Hispanic	4,317	79%	132	12%	7,050	79%	174	10%
Black, non-Hispanic	690	13%	446	39%	1,080	12%	580	34%
Male Black, non-Hispanic	*549*		*230*		*838*		*287*	
Female Black, non-Hispanic	*141*		*216*		*242*		*293*	
Hispanic	278	5%	393	35%	442	5%	693	41%
Asian & PI, non-Hispanic	64	1%	152	13%	102	1%	241	14%
Native American, non-Hispanic	67	1%	5	0%	154	2%	5	0%
Multiple or unknown race, non-Hispanic	82	1%	11	1%	121	1%	15	1%
TOTAL	**5,498**	**83%**	**1,139**	**17%**	**8,949**	**84%**	**1,708**	**16%**

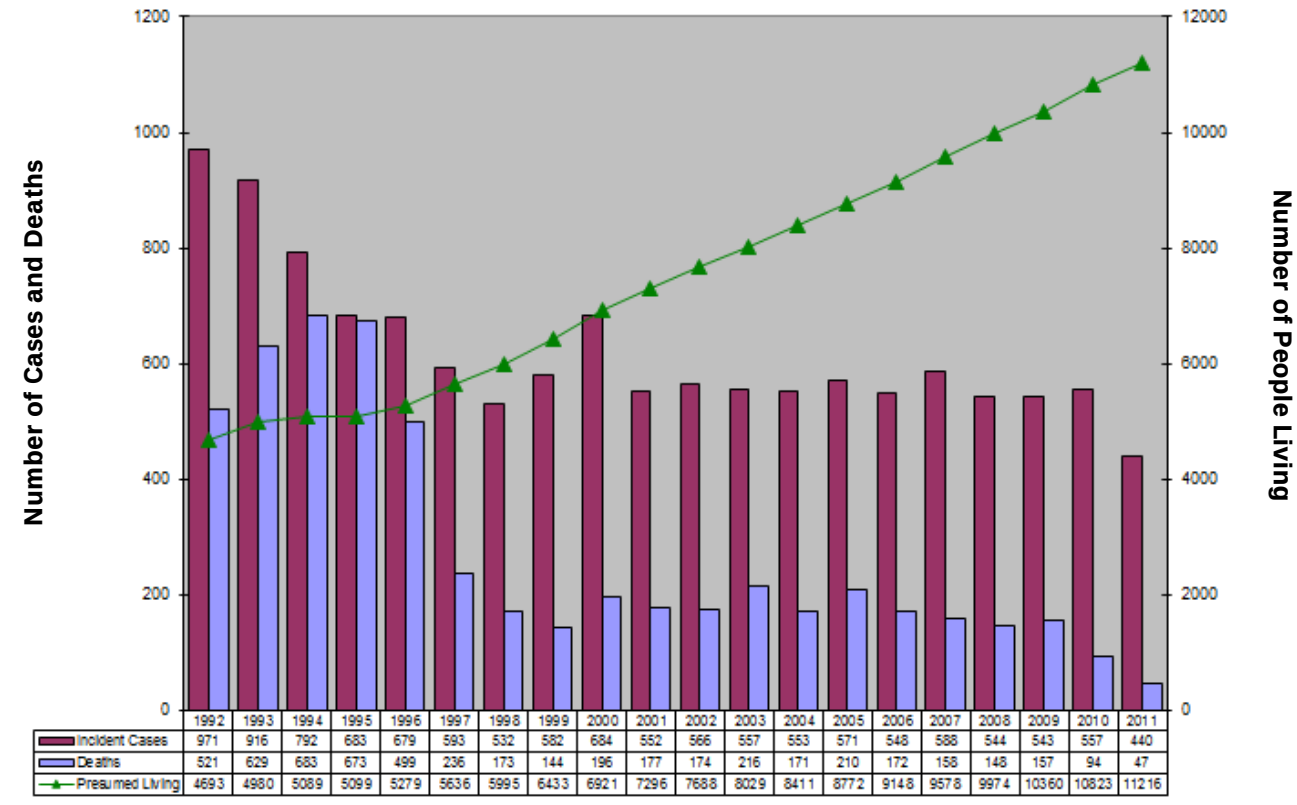
[a] Table 7 does not include 298 King County and 559 Washington cases missing place of birth information.

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS – King County (reported as of 12/31/2011)



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Incident Cases	612	575	497	421	399	331	353	329	444	336	361	349	339	324	313	320	318	305	322	255
Deaths	353	427	445	461	308	120	94	78	107	99	104	135	96	111	86	89	72	102	54	30
Presumed Living	3062	3210	3262	3222	3313	3524	3783	4034	4371	4608	4865	5079	5322	5535	5762	5993	6239	6442	6710	6935

Figure 2: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS – Washington (reported as of 12/31/2011)



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Incident Cases	971	916	792	683	679	593	532	582	684	552	566	557	553	571	548	588	544	543	557	440
Deaths	521	629	683	673	499	236	173	144	196	177	174	216	171	210	172	158	148	157	94	47
Presumed Living	4693	4980	5089	5099	5279	5636	5995	6433	6921	7296	7688	8029	8411	8772	9148	9578	9974	10360	10823	11216

Table 8: Demographic characteristics of King County residents diagnosed 1982-2011, by date of HIV diagnosis (reported through 12/31/2011)

	1982-2002		2003-2005		2006-2008		2009-2011[a]		Trend[b]
	N	%	N	%	N	%	N	%	2003-2011
TOTAL	**8,773**	**100%**	**1,012**	**100%**	**951**	**100%**	**882**	**100%**	
HIV Exposure Category									
Men who have sex with men (MSM)	6,424	76%	641	70%	589	73%	603	78%	up
Injection drug user (IDU)	509	6%	53	6%	39	5%	31	4%	
MSM-IDU	906	11%	80	9%	75	9%	62	8%	
Heterosexual contact[c]	524	6%	135	15%	104	13%	70	9%	down
Blood product exposure	96	1%	2	0%	1	0%	0	0%	
Perinatal exposure	27	0%	0	0%	3	0%	8	1%	
SUBTOTAL- known risk	*8,486*	*100%*	*911*	*100%*	*811*	*100%*	*774*	*100%*	
Undetermined/other[d]	287	3%	101	10%	140	15%	108	12%	N/A
Sex & Race/Ethnicity[e]									
Male	*8,164*	*93%*	*895*	*88%*	*828*	*87%*	*779*	*88%*	
White male	6,440	73%	564	56%	501	53%	492	56%	
Black male	836	10%	155	15%	117	12%	102	12%	down
Hispanic male	564	6%	111	11%	128	13%	125	14%	up
Other male	324	4%	65	6%	82	9%	60	7%	
Female	*609*	*7%*	*117*	*12%*	*133*	*14%*	*103*	*12%*	
White female	271	3%	28	3%	48	5%	31	4%	
Black female	233	3%	70	7%	66	7%	56	6%	
Hispanic female	42	0%	10	1%	7	1%	7	1%	
Other female	63	1%	9	1%	12	1%	9	1%	
Race/Ethnicity[e]									
White	6,711	77%	592	58%	539	57%	523	59%	
Black	1,069	12%	225	22%	183	19%	158	18%	down
Hispanic	606	7%	121	12%	135	14%	132	15%	
Asian & Pacific Islander	162	2%	36	4%	63	7%	47	5%	
Native American or Alaska Native	110	1%	13	1%	6	1%	4	0%	down
Multiple race	114	1%	25	2%	25	3%	18	2%	
SUBTOTAL- known race/ethnicity	*8,772*	*100%*	*1,012*	*100%*	*951*	*100%*	*882*	*100%*	
Unknown race	1	0%	0	N/A	0	N/A	0	N/A	N/A
Place of Birth									
Born in U.S. or Territories	7,807	91%	757	77%	670	74%	643	76%	down
Born outside U.S.	744	9%	225	23%	238	26%	205	24%	up
SUBTOTAL- known birthplace	*8,551*	*100%*	*982*	*100%*	*908*	*100%*	*848*	*100%*	
Birthplace unknown	222	3%	30	3%	43	5%	34	4%	N/A
Age at Diagnosis of HIV									
0-19 years	149	2%	8	1%	21	2%	26	3%	up
20-29 years	2,278	26%	206	20%	257	27%	250	28%	up
30-39 years	3,944	45%	428	42%	317	33%	264	30%	down
40-49 years	1,807	21%	283	28%	229	24%	209	24%	down
50-59 years	487	6%	73	7%	93	10%	108	12%	up
60+ years	108	1%	14	1%	34	4%	25	3%	up
Residence									
Seattle residence	7,497	85%	754	75%	691	73%	629	71%	down
King County residence outside Seattle	1,276	15%	258	25%	260	27%	253	29%	up

[a] Due to delays in reporting, data from recent years are incomplete.
[b] Chi-square statistical trends in proportions ($p<.05$) were calculated for cases with known characteristics for the periods 2003-2005, 2006-2008, and 2009-2011.
[c] Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).
[d] Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), persons exposed to HIV through their occupation, and patients who mode of exposure remains undetermined.
[e] All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

Table 9: Demographic characteristics of Washington residents diagnosed 1982-2011, by date of HIV diagnosis (reported through 12/31/2011)

	1982-2002		2003-2005		2006-2008		2009-2011[a]		Trend[b]
	N	%	N	%	N	%	N	%	2003-2011
TOTAL	**13,627**	**100%**	**1,681**	**100%**	**1,680**	**100%**	**1,540**	**100%**	
HIV Exposure Category[d]									
Men who have sex with men (MSM)	9,014	69%	941	63%	947	67%	925	71%	up
Injection drug user (IDU)	1,241	10%	138	9%	102	7%	81	6%	down
MSM-IDU	1,382	11%	137	9%	122	9%	101	8%	
Heterosexual contact[c]	1,131	9%	278	19%	238	17%	179	14%	down
Blood product exposure	216	2%	5	0%	2	0%	0	0%	
Perinatal exposure	61	0%	2	0%	6	0%	26	2%	
SUBTOTAL- known risk	*13,045*	*100%*	*1,501*	*100%*	*1,417*	*100%*	*1,312*	*100%*	
Undetermined/other[d]	582	4%	180	11%	263	16%	228	15%	N/A
Sex & Race/Ethnicity[e]									
Male	*12,273*	*90%*	*1,423*	*85%*	*1,406*	*84%*	*1,316*	*85%*	
White male	9,710	71%	947	56%	886	53%	796	52%	down
Black male	1,160	9%	210	12%	191	11%	176	11%	
Hispanic male	900	7%	170	10%	211	13%	233	15%	up
Other male	503	4%	96	6%	118	7%	111	7%	up
Female	*1,354*	*10%*	*258*	*15%*	*274*	*16%*	*224*	*15%*	
White female	729	5%	95	6%	114	7%	89	6%	
Black female	370	3%	100	6%	102	6%	89	6%	
Hispanic female	120	1%	31	2%	34	2%	20	1%	
Other female	135	1%	32	2%	24	1%	26	2%	
Race/Ethnicity[e]									
White	10,439	77%	1,042	62%	1,000	60%	885	57%	down
Black	1,530	11%	310	18%	293	18%	265	17%	
Hispanic	1,020	7%	201	12%	245	15%	253	16%	up
Asian & Pacific Islander	245	2%	62	4%	86	5%	83	5%	up
Native American or Alaska Native	200	1%	35	2%	23	1%	19	1%	
Multiple race	177	1%	31	2%	33	2%	35	2%	
SUBTOTAL- race/ethnicity	*13,611*	*100%*	*1,681*	*100%*	*1,680*	*100%*	*1,540*	*100%*	
Unknown race	16	N/A	0	N/A	0	N/A	0	N/A	

Table 9 continued on next page

[a] Due to delays in reporting, data from recent years are incomplete.
[b] Chi-square statistical trends in proportions ($p<.05$) were calculated for cases with known characteristics for the periods 2003-2005, 2006-2008, and 2009-2011.
[c] Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
[d] Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), patients still under investigation, persons 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 who mode of exposure remains undetermined.
[e] All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

Table 9 (Continued): Demographic characteristics of Washington residents diagnosed 1982-2011, by date of HIV diagnosis (reported through 12/31/2011)

	1982-2002		2003-2005		2006-2008		2009-2011[a]		Trend[b]
	N	%	N	%	N	%	N	%	2003-2011
TOTAL	**13,627**	**100%**	**1,681**	**100%**	**1,680**	**100%**	**1,540**	**100%**	
Place of Birth									
Born in U.S. or Territories	12,155	92%	1,312	80%	1,214	78%	1,099	77%	down
Born outside U.S.	1,095	8%	322	20%	343	22%	336	23%	up
SUBTOTAL- known birthplace	*13,250*	*100%*	*1,634*	*100%*	*1,557*	*100%*	*1,435*	*100%*	
Birthplace unknown	377	3%	47	3%	123	7%	105	7%	N/A
Age at diagnosis of HIV									
0-19 years	298	2%	18	1%	51	3%	55	4%	up
20-29 years	3,633	27%	363	22%	446	27%	416	27%	up
30-39 years	5,872	43%	627	37%	507	30%	451	29%	down
40-49 years	2,796	21%	484	29%	419	25%	361	23%	down
50-59 years	794	6%	154	9%	186	11%	191	12%	up
60+ years	234	2%	35	2%	71	4%	66	4%	up

[a] Due to delays in reporting, data from recent years are incomplete.
[b] Chi-square statistical trends in proportions ($p<.05$) were calculated for cases with known characteristics for the periods 2003-2005, 2006-2008, and 2009-2011.
[c] Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
[d] Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), patients still under investigation, persons 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 who mode of exposure remains undetermined.
[e] All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

HIV Infection, Diagnosis, Care Status, and Viral Load Level (the HIV Care Cascade) among King County Residents

At the 2012 Conference on Retroviruses and Opportunistic Infections (CROI) held in Seattle March 5-8, several presenters summarized data on the HIV "care continuum" or "care cascade". In the care cascade the numbers of HIV-infected individuals are estimated, and intermediate steps show the numbers and proportions remaining at each step as HIV infected persons are diagnosed, seek medical care, are prescribed antiretrovirals, and attain a suppressed plasma viral load. Since these monitor the goals of our local HIV control strategy, we have created a care cascade for King County using available local data.

Figure 1 shows the status of people living with HIV infection in King County as of December, 31, 2011. These data are population-based from a mature HIV and viral load reporting system. Still the confirmed population-based numbers are conservative because some data are incomplete. Methods and additional details of creating this figure follow.

1. **People living with HIV**. There are an estimated 7,200 people living with HIV or AIDS (PLWHA) in King County. This estimate and all subsequent data include King County residents diagnosed with HIV and PLWHA who have moved into King County; those who have died or moved away are excluded. This estimate is calculated as 6,107 (see #2 below) divided by 85% (midpoint of the estimated 80-90% of PLWHA who know their status), and rounded to the nearest 100.

2. **Diagnosed cases of HIV.** Surveillance data indicate that at the end of 2011, there were 6,107 (85% of 7,200) PLWHA diagnosed and living in King County. Each reported case has a recent lab result, or was recently investigated to determine current residence, medical care utilization, and vital status.

3. **At least one care visit in 2011.** In 2011, 67% (4,798/7,200) of PLWHA had laboratory evidence of medical care. Of the 1,309 PLWHA not included in this bar, investigations show 111 (8% of 1309) have a 2012 lab but none in 2011 (this includes the 23 cases reported in 2012 with a 2011 diagnosis), 741 (57%) had a last lab in 2010, 145 (11%) PLWHA had a last lab in 2009, and 312 (24%) had a last lab before 2009.

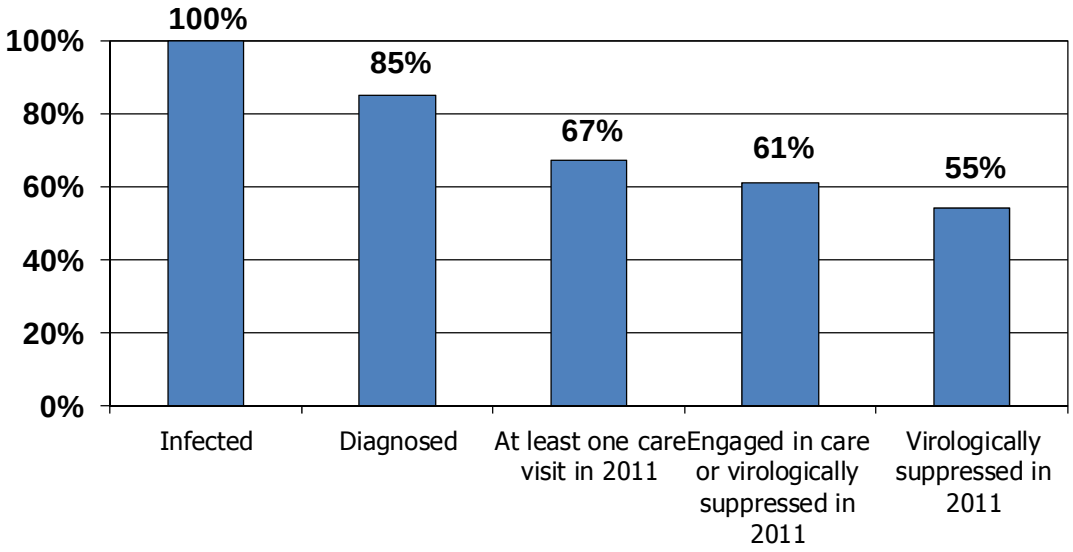
4. **Continuously engaged in care or virologically suppressed in 2011.** We defined continuous engagement in care as PLWHA with at least two labs results over 90 days apart in 2011, reported to Public Health. Forty-nine percent of PLWHA (3,529/7,200) were engaged in care in 2011. An additional 12% (837/7,200) of PLWHA were virologically suppressed but did not have two or more labs over 90 days apart. Thus, a total of 61% (4,366/7,200) of PLWHA met these criteria.

5. **Virologic suppression.** Fifty-five percent (3,933/7,200) of PLWHA in King County had a suppressed (undetectable or below 200 particles per microliter) viral load (VL) level at their last measurement in 2011. This indicates their HIV treatment is successfully keeping the virus in check. Of the 471 cases continuously engaged, but without a suppressed viral load, 15 (3%) PLWHA had no VL reported, 114 (24%) had a VL of 200-999, 112 (24%) had VL 1000-9999, 169 (36%) had VL 10,000- 99,999, and 61 (13%) had VL > 100,000.

This care cascade gains importance as we increasingly look to HIV treatment not only for its role in improving the health of individuals, but also as a possible means to prevent HIV transmission and reduce the prevalence of HIV in our community. CDC currently estimates that only 28% of all HIV-infected individuals have an undetectable HIV viral load. The estimate that 55% for King County residents living with HIV/AIDS have suppressed virus is thus encouraging. Increasing engagement in care at each step along the care cascade is now a major focus of public health efforts.

- *Submitted by Jim Kent, Julie Dombrowski, Matt Golden, and Susan Buskin*

Figure 1:
HIV Care Cascade in King County:
Estimated percent of PLWHA diagnosed, in care, engaged in care, and virologically suppressed 2011



Number of Persons	7,200 →	6,107 →	4,798 →	4,366 →	3,933

Should HIV Testing Be Treated Just Like Routine Screening for Other Diseases? Opinions among Participants in the Seattle Area NHBS Surveys, 2008-2010

Introduction

At the end of 2008 an estimated 1,178,350 persons were living with HIV in the United States, including about 236,400 (20%) whose infections were undiagnosed. Nationally, one-third of those diagnosed with HIV infection in 2008 developed AIDS within one year of diagnosis indicating that they were probably infected an average of 10 years earlier (had a "late diagnosis"). In King County as of June 30, 2011, there were an estimated 7,300 – 8,000 persons living with HIV, including an estimated 7-14% who were unaware of their positive HIV status. Similar to national estimates, about one-third of those diagnosed with HIV in recent years were considered late diagnoses.

In 2006 the Centers for Disease Control and Prevention (CDC) published revised HIV testing recommendations to facilitate earlier detection of HIV infection and link patients to prevention and care services. The CDC recommended routine opt out screening in all healthcare settings for patients aged 13 to 64 years after patients are notified that testing will occur. CDC also recommends that prevention counseling and separate consent for HIV testing should not be required as part of screening programs in healthcare settings. Washington State implemented a revised rule (WAC 246-100-207) on December 15, 2009 intending to align state practices with the 2006 CDC recommendations. However, these changes have not been widely implemented in Washington State because of concerns from risk managers and hospital administrators about continued requirements for informed consent.

CDC sponsors the National HIV Behavioral Surveillance system (NHBS) to monitor HIV-related risk behaviors and seroprevalence and to assess the use of prevention services in populations at increased risk for HIV. The populations include men who have sex with men (MSM), injection drug users (IDU) and heterosexuals at increased risk for HIV (HET). Each population is surveyed every third year using a standardized protocol and questionnaire, and HIV testing is offered to all participants, including those with known HIV infection. Between 2008 and 2010 NHBS was conducted in 21 Metropolitan Statistical Areas (MSAs) that represented approximately 60% of all AIDS cases reported in large urban areas.

This report examines opinions about provision of routine HIV testing in a manner similar to routine screening for other diseases among MSM, IDU and HET surveyed as part of the Seattle area NHBS system between 2008 and 2010.

Methods

The MSM2, IDU2, and HET2 surveys were conducted in 2008, 2009, and 2010, respectively. The MSM2 survey used venue-based sampling (VBS) where men were recruited at randomly sampled venues frequented by MSM. In the MSM2 survey we used a 30-foot motor home as an interview site. The IDU2 and HET2 surveys used respondent-driven sampling (RDS), which is a form of snowball sampling where participants are paid a small incentive to refer a limited number of their network members to the study. In the IDU2 and HET2 surveys we conducted all study activities at a fixed office location. In all three surveys, participants had to be 18 years or older and, in the HET2 survey no older than 60 years. Data were collected electronically using pocket-size hand-held computers. Participants were also offered rapid HIV testing and almost all participants agreed to test, including those with known HIV infection. This was important in order to measure HIV seroprevalence. Participants were given a monetary incentive and provided with information about local HIV prevention resources and health and social services. We did not collect names or contact information. The participants provided informed consent, and the study was approved by the Washington State Institutional Review Board.

All participants, including those who were known to be positive for HIV, were asked the following two questions related to knowledge and opinions about providing routine HIV testing:

- As far as you know, when someone visits their doctor for a regular check-up or exam, is it routine practice to perform a test for HIV, or do they have to ask their doctor to perform this test?
- I'm going to read two statements. Tell me which comes closer to your opinion:

1) HIV testing should be treated just like routine screening for other diseases, and should be included as part of regular check-ups and exams; or

2) HIV testing should be treated differently from routine screening for other diseases, and should require special procedures, such as written permission from the patient in order to perform the test.

We excluded participants who reported ever testing positive for HIV or having an indeterminate HIV result in the analysis of factors associated with favoring routine HIV testing.

Results

We recruited 368 MSM2 participants who reported male-male sex in the past 12 months, 509 IDU2 participants who reported injecting illicit drugs in the last 12 months, and 453 HET2 participants who reported sex with a person of the opposite gender in the past 12 months and reported never having had male-male sex and never having injected illicit drugs. HIV prevalence was 16% among MSM2 participants, 3% among non-MSM IDU2 participants, 25% among MSM IDU2 participants, and 1% among HET2 participants.

The majority, including 83% of MSM2, 80% of IDU2 and 90% of HET2 participants, stated that an HIV test is not routinely performed when someone visits their doctor for a regular check-up unless they ask for it (data not shown). However, 73% of MSM2, 75% of IDU2 and 82% of HET2 participants favored treating HIV testing just like routine screening for other diseases (**Table 1**). HET2 participants were significantly more likely to be in favor ($p<0.01$) than participants from the other two surveys. Relative to those who reported being HIV positive, those who reported being negative or not knowing their HIV status tended to be more favorably inclined and this difference was statistically significant when data from all three populations were combined ($p=0.02$).

We examined opinions about routine HIV testing by sociodemographic characteristics, sexual and drug use behaviors, and health history among participants who did not report being HIV positive or having received an indeterminate result on their last test. Female participants in the IDU2 and HET2 surveys were more likely than male participants to agree that HIV testing should be treated as routine testing (**Table 2**). There were no statistically significant differences between males in the three surveys or between females in the IDU2 and HET2 surveys.

Among HET2 participants we also found that routine testing was favored by those who had never married, were divorced, separated or widowed compared to those who were married or had a domestic partner (Table 2), those who reported not knowing the HIV status of their last sex partner compared to those who reported their last sex partner was HIV negative (**Table 3**), those who reported using non-prescription

Table 1. Numbers and proportions of Seattle area NHBS participants who agreed that HIV testing should be treated like routine screening for other diseases, by HIV status

	HIV testing should be treated as routine screening		
	2008 MSM2 N=365	2009 IDU2 N=500	2010 HET2 N=453
	n/N (row %)	n/N (row %)	n/N (row %)
Total[1]	265/365 (73)	374/500 (75)	372/453 (82)
Self-reported HIV status[2]			
Negative	204/282 (72)	293/387 (76)	275/338 (81)
Positive	35/53 (66)	21/32 (66)	1/2 (50)
Indeterminate	2/2 (100)	0/1 (0)	0
Don't know	23/28 (82)	60/80 (75)	96/112 (86)

[1] *Opinion missing for 3 MSM2 and 9 IDU2 participants.*
[2] *HIV status missing for 1 HET2 participants.*

Table 2. Numbers and proportions of Seattle area NHBS participants who agreed that HIV testing should be treated like routine screening for other diseases, by sociodemographic characteristics

	HIV testing should be treated as routine screening		
	2008 MSM2 N=310	**2009 IDU2 N=467**	**2010 HET2 N=451**
	n/N (row%)	n/N (row%)	n/N (row%)
Sex			
Male	228/310 (74)	**212/294 (72)**	**173/222 (78)**
Female	0	**139/171 (81)**	**199/229 (87)**
Age (years)			
18-29	**109/135 (81)**	38/49 (78)	154/180 (86)
30-39	**63/94 (67)**	83/107 (78)	64/77 (83)
40-49	**36/48 (75)**	107/143 (75)	97/125 (78)
50+	**20/33 (61)**	125/168 (74)	57/69 (83)
Race/Ethnicity			
White	149/197 (76)	214/273 (78)	31/35 (89)
Black	13/19 (68)	60/88 (68)	251/303 (83)
Hispanic	22/29 (76)	20/28 (71)	19/24 (79)
Other	18/32 (56)	21/26 (81)	16/21 (76)
Multiracial	23/30 (77)	37/51 (73)	55/68 (81)
Education			
Less than high school	8/8 (100)	89/123 (72)	109/125 (87)
High school/GED	40/51 (78)	149/199 (75)	193/245 (79)
Some college/college graduate	180/251 (72)	114/143 (80)	70/81 (86)
Marital status[1]			
Married/domestic partner	N/A	20/28 (71)	**27/42 (64)**
Divorced/separated/widowed	N/A	153/200 (77)	**91/112 (81)**
Never married	N/A	180/238 (76)	**254/297 (85)**
Employment status			
Employed full- or part-time	182/253 (72)	36/42 (86)	87/108 (81)
Not employed	46/57 (81)	317/424 (75)	285/343 (83)
Health insurance			
No	64/91 (70)	114/157 (73)	148/181 (82)
Yes	164/219 (75)	239/309 (77)	224/270 (83)

This table includes NHBS participants who did not report HIV+ or indeterminate status.
Bolded indicates statistically significant difference ($p < 0.05$).
[1] MSM were not asked about marital status.

painkillers in the last 12 months compared to those who did not (**Table 4**), and those who had visited a healthcare provider in the last 12 months compared to those who had not (**Table 5**).

Among IDU2 participants we found that in addition to females endorsing routine testing (Table 2), those who reported ever testing for HIV were also more likely to favor routine HIV testing (Table 5). Among MSM2 participants the only difference in opinion was by age with those younger than 30 years more likely to favor routine testing than participants 30 years and older (Table 2). We found no other statistically significant differences in the three survey samples.

In multivariate logistic regression analysis (data not shown), we found that among IDU2 participants, only

Table 3. Numbers and proportions of Seattle area NHBS participants who agreed that HIV testing should be treated like routine screening for other diseases, by sexual behaviors

	HIV testing should be treated as routine screening		
	2008 MSM2 N=310	**2009 IDU2 N=467**	**2010 HET2 N=451**
	n/N (row%)	n/N (row%)	n/N (row%)
Male-male sex[1]			
Male-male sex ever	264/310 (73)	50/70 (71)	N/A
Male-male sex last 12 months	264/310 (73)	29/37 (78)	N/A
Sex partners last 12 months[2]			
0 sex partners	0	86/110 (78)	0
1 sex partners	51/65 (78)	117/159 (74)	105/126 (83)
2-4 sex partners	77/102 (75)	99/124 (80)	171/207 (83)
5 -9 sex partners	45/62 (73)	20/33 (61)	51/63 (81)
10+	55/81 (68)	31/41 (76)	45/55 (82)
HIV status of last sex partner[2]			
No sex last 12 months	N/A	86/110 (78)	N/A
HIV negative	148/194 (76)	165/216 (76)	**155/200 (78)**
HIV positive	11/16 (69)	7/12 (58)	N/A
Unknown status	67/98 (68)	95/129 (74)	**197/230 (85)**
Unprotected anal sex with HIV discordant male partner at last sexual encounter			
No	202/275 (73)	23/30 (77)	N/A
Yes	26/35 (74)	6/7 (86)	N/A
Unprotected vaginal or anal sex with HIV discordant sex partner at last sexual encounter[3,4]			
No	N/A	276/361 (76)	209/255 (82)
Yes	N/A	75/104 (72)	163/196 (83)

This table includes NHBS participants who did not report HIV+ or indeterminate status.
Bolded indicates statistically significant difference ($p < 0.05$).
N/A=Not applicable.
[1] Among males.
[2] All participants in the MSM2 and HET2 cycles had at least 1 sex partner in the last year; some participants in the IDU2 cycle had no sex partners in the last year.
[3] In IDU2 last male partners trump last female partners for male participants.
[4] A partner of opposite or unknown HIV status, including an unknown-unknown partnership.

gender remained independently associated with female participants being more likely to favor routine HIV testing than males. Among HET2 participants those who were female (vs. male), never married, divorced, separated, or widowed (vs. married/domestic partner) or had visited a healthcare provider in the last 12 months (vs. had not) were more likely to favor routine HIV testing.

Comments

We found that about three-quarters of Seattle-area NHBS participants surveyed between 2008 and 2010 believed that HIV testing is not routinely performed when someone visits their doctor unless they ask for it. This accurately reflects the current status of local HIV testing practices. Even so, the vast majority of participants in each of the three survey samples supported treating HIV testing just like screening for other diseases and including it as part of regular check-ups or exams. NHBS participants who reported being HIV negative or not knowing their status were even more likely to be in favor, which is important since they represent the population who is targeted for testing. We also found that females and younger MSM were particularly likely to favor routine testing.

Table 4. Numbers and proportions of Seattle area NHBS participants who agreed that HIV testing should be treated like routine screening for other diseases, by drug and alcohol use behaviors

	HIV testing should be treated as routine screening		
	2008 MSM2 N=310	2009 IDU2 N=467	2010 HET2 N=451
	n/N (row%)	n/N (row%)	n/N (row%)
Non-injection drug use last 12 months[1]			
Methamphetamine	31/41 (76)	104/130 (80)	24/29 (83)
Crack	13/14 (93)	266/352 (76)	88/111 (79)
Cocaine	56/77 (73)	135/179 (75)	67/83 (81)
Heroin	N/A	99/133 (74)	15/15 (100)
Painkillers	43/57 (75)	168/218 (77)	**62/68 (91)**
Binged on alcohol 4+ times last 30 days[2]			
No	153/208 (74)	282/368 (77)	270/324 (83)
Yes	74/101 (73)	71/99 (72)	102/127 (80)
Substance use at last sexual encounter			
No	111/155 (72)	124/162 (77)	190/228 (83)
Yes	117/155 (75)	229/305 (75)	182/223 (82)
Primary injection drug last 12 months			
Heroin	N/A	302/397 (76)	N/A
Speedballs	N/A	24/33 (73)	N/A
Methamphetamine	N/A	20/25 (80)	N/A
Other drug	N/A	7/12 (58)	N/A

This table includes NHBS participants who did not report HIV+ or indeterminate status.
Bolded indicates statistically significant difference ($p<0.05$).
[1] Use of the specific drug vs. no use of that drug.
[2] 5+ drinks in one setting for males and 4+ drinks in one setting for females.

Diagnosing persons with HIV infection and providing prevention counseling and HIV treatment to HIV-positive individuals constitute the most important components of prevention of HIV transmission. According to the National HIV/AIDS Strategy, one of the seven themes to prevent HIV infection is to "routinize, increase and improve" HIV testing. Our findings demonstrate overwhelming support for routinizing HIV testing among populations at increased risk for HIV who were surveyed as part of NHBS in the Seattle area.

Table 5. Numbers and proportions of Seattle area NHBS participants who agreed that HIV testing should be treated like routine screening for other diseases, by health history

	HIV testing should be treated as routine screening		
	2008 MSM2 N=310	2009 IDU2 N=467	2010 HET2 N=451
	n/N (row%)	n/N (row%)	n/N (row%)
Ever tested for HIV			
No	19/22 (86)	**18/30 (60)**	78/92 (85)
Yes	209/288 (73)	**333/435 (77)**	293/358 (82)
HIV test in the last 12 months			
No	93/123 (76)	153/208 (74)	260/318 (82)
Yes	135/187 (72)	74/101 (73)	111/132 (84)
Visited a healthcare provider in the last 12 months			
No	176/240 (73)	59/82 (72)	**67/93 (72)**
Yes	52/70 (74)	294 (384 (77)	**305/358 (85)**
Hepatitis A or B vaccination			
No	59/80 (74)	204/277 (74)	184/230 (80)
Yes	161/218 (74)	128/168 (76)	172/200 (86)

This table includes NHBS participants who did not report HIV+ or indeterminate status.
Bold indicates statistically significant difference (p,0.05).

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

Please contact Hanne Thiede at 206-296-4318 or hanne.thiede@kingcounty.gov for more information about the Seattle area NHBS.

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[1] Centers for Disease Control and Prevention. HIV Surveillance --- United States, 1981—2008. MMWR 2011 June 3, 2011 / 60 (21);689-693. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm6021a2.htm?s_cid=mm6021a2_w.
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[3] Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in healthcare settings. MMWR 2006;55(No. RR-14). Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm.
[4] WAC 246-100-207 Human immunodeficiency virus (HIV) testing — Ordering — Laboratory screening — Interpretation — Reporting. Available at http://apps.leg.wa.gov/wac/default.aspx?cite=246-100-207#.
[5] Gallagher KM, Sullivan PS, Lansky A, Onorato IM. Behavioral surveillance among people at risk for HIV infection in the U.S.: the National HIV Behavioral Surveillance System. Public Health Rep. 2007;122 Suppl 1:32-38.
[6] Burt R, Snyder N, Thiede H. Highlights from the 2008 Seattle Area NHBS survey of men who have sex with men. HIV/AIDS Epidemiology Report 1st Half 2010: 26-37. Available at www.kingcounty.gov/healthservices/health/communicable/hiv/epi/reports.aspx
[7] Hackathorn DD. Respondent-driven sampling II: Deriving valid population estimates from chain-referral samples of hidden populations. Social Problems. 2002; 29:11-34.
[8] Burt R, Thiede H. Results from the National HIV/AIDS Behavioral Survey of injection drug users in the Seattle area, 2005. HIV/AIDS Epidemiology Report 1st Half 2007: 17-22. Available at www.kingcounty.gov/healthservices/health/communicable/hiv/epi/reports.aspx.
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[10] National HIV Strategy. Available at www.whitehouse.gov/sites/default/files/microsites/ONAP_rpt.pdf.

Publicly Funded HIV Testing in King County, 2007 through 2011

Background

Identifying individuals infected with HIV is a necessary step in linking persons into care. HIV testing is also a cornerstone in HIV prevention efforts as people diagnosed will HIV will change their behavior and antiretroviral treatment can decrease the risk of HIV transmission. Since 2006, the Centers for Disease Control and Prevention has promoted universal screening for HIV among adolescents and adults.[1] Thus, HIV testing is an important public health activity. In this report, we present measures of the extent of testing, characteristics of the tested population, and rates of new confidential diagnoses among individuals testing for HIV at publicly funded testing sites in King County.

Methods

We examined publicly funded HIV tests conducted by Public Health – Seattle & King County between 2007 and 2011. Testing sites included public health clinics and private sites (predominantly non-profit). Testing was conducted at the public health laboratory or by Disease Investigation Specialists, and included three types of HIV tests. These three types are serum antibody tests, rapid antibody tests, and HIV RNA testing. Serum (blood with cells and clotting factors removed) testing includes an EIA screening test and a Western Blot (WB) confirmatory test. Serum antibody tests are interpreted as negative if the initial EIA is negative. If the EIA is positive it is repeated and a positive EIA interpretation requires two positive EIA tests. Positive EIA results are followed by WB confirmatory testing. In addition to these serum tests, public health conducts rapid tests (which are similar to the EIA screening tests but may be done on whole blood or oral fluid), and RNA tests. RNA testing is done only for high risk individuals (mostly men who have sex with men who comprise about 77% of our local HIV epidemic). RNA screening is done on pooled sera following a negative HIV antibody test.[2] RNA tests were initially instituted to reduce the window period between infection and testing positive for HIV. Newer HIV screening tests have shorter window periods than those used a few years ago, potentially reducing the need for RNA screening.

Public Health maintains a database of the laboratory requisition forms used to order health department HIV tests for funding requirements. This database is also used as a resource for HIV incidence surveillance. We analyzed data from this database, including date and site of specimen collection, patient demographics and risks, prior HIV tests, and outcome of test (negative or positive). For individuals with two or more positive HIV tests, all but the first test were excluded. To examine the proportion of HIV tests that were positive each year, we excluded individuals with a self-reported positive HIV test six months or longer ago.

We also used HIV/AIDS case surveillance data's HIV/AIDS reporting system to measure the proportion of newly reported HIV cases diagnosed through public health HIV testing sites.

Sample Size

Between 2007 and 2011, public health conducted 96,098 HIV tests. Individuals seeking an HIV test on a given day may receive a single test (e.g. a negative serum test), two tests (e.g. a rapid test followed by a serum test) or three tests (rapid, serum, and RNA). On average, people received 1.6 HIV tests each day they were HIV tested. As these are all part of the same testing event, all HIV tests on a given day may be considered as one single test (or testing event). Thus over the same five years, public health conducted 61,160 testing events for 36,081 individuals.

Exclusions (for analyses of test outcomes): because HIV tests done as part of a research project are not reportable, when known, research-related tests were excluded (N=296). Unconfirmed screening tests (N=58) and indeterminate Western blots (N=39) were also excluded. Anonymous tests are also excluded from analyses of test outcomes, as it is not possible to de-duplicate these.

Figure 1a: Numbers of HIV tests performed by Public Health—Seattle & King County, 2007-2011

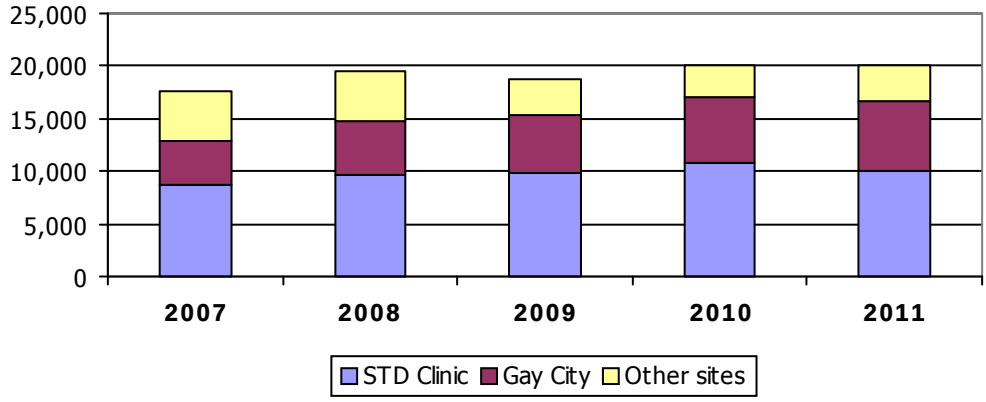


Figure 1b: Numbers of people receiving an HIV test performed by Public Health—Seattle & King County, 2007-2011

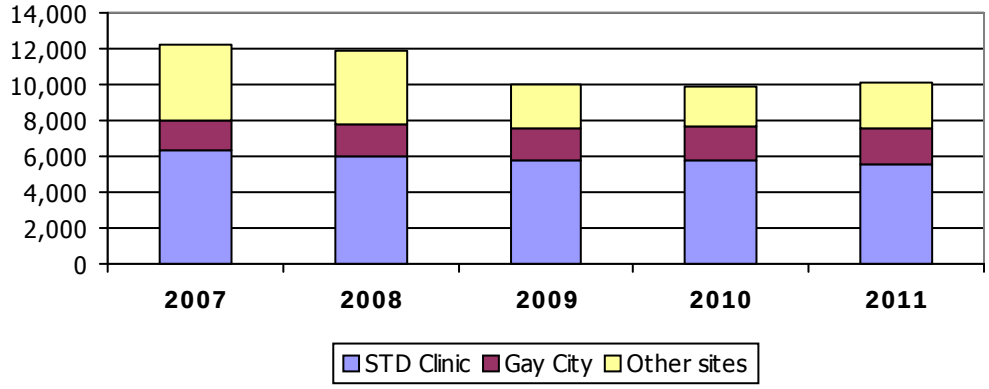
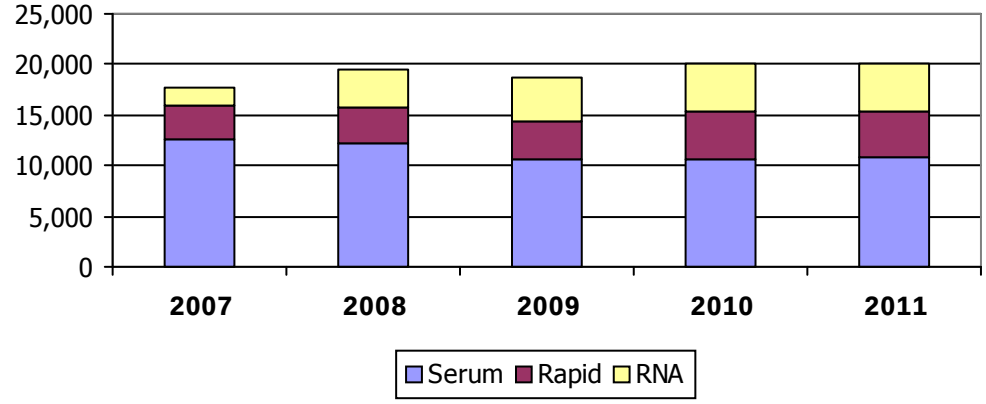


Figure 2: Types of HIV tests—serum, rapid, or pooled RNA—performed by Public Health—Seattle & King County, 2007-2011



Results

Each year from 2007 through 2011, public health conducted an average of 19,220 HIV tests on an average of 8,966 individuals (**Figures 1a and 1b**). Over three quarters of HIV tests were conducted at two sites – the HIV/STD Program's STD Clinic at Harborview Medical Center and at the Gay City Health Project Wellness Center. Most tests were serologic (59%), followed by rapid (21%) and RNA (20%) (**Figure 2**).

Figure 3 illustrates the numbers of tests, testing events (hereafter referred to as tests, and limited to one test per person per day) and unduplicated confidential testers. Anonymous tests, where the person getting an HIV test does not disclose their name, comprised 18% of HIV tests and 82% were name-based confidential tests (**Figure 4**).

Publicly funded HIV testing identifies approximately 100 individuals infected with HIV each year. Not all of these individuals are newly diagnosed, tested confidentially, and reside in King County; these are the criteria which make HIV tests reportable to King County's HIV surveillance system. On average, publicly funded tests comprise about 73 (24%) of the roughly 308 cases reported each year in the past 5 years (**Figure 5**). Data from 2011 are incomplete, and the cases are likely to rise, perhaps disproportionately so from non-public health testing sites.

Sex, race/ethnicity, age, and HIV risk group are given for unduplicated cases testing confidentially over the five year period, stratified by HIV status in **Figures 6a through 6d**. HIV-infected (positive testers) were more likely to be men who had sex with men relative to those testing negative ($p < .0001$). Another way to describe this disparity is that 81% of positive tests were among MSM including MSM-IDU whereas 24% of testers were MSM. Mean ages of negative testers was 32 years relative to 34 years for positive testers. ($p < .0001$).

Rates of new HIV diagnoses per 100 testers are given in **Figure 7**. Overall the annual rate of people testing positive was 1.2%. There were no statistically significant trends in these rates over the five years, although the decrease in the rate for MSM was of borderline significance (X^2_{trend} p value = 0.09). The average annual rates for testing positive for HIV among MSM testing through Public Health funded programs were 3.5%, IDU 0.3%, MSM-IDU 5.1%, and all others 0.3%. The all other category includes individuals reporting sex with an HIV-infected person; sex with an IDU, and women having sex with a bisexual man (HIV positive rate 0.9%), individuals with any other reported risk including an STD or multiple sexual partners (0.2%) and those with missing risk information (0.6%). On average, 81 MSM, 10 MSM-IDU, 1 IDU, and 19 others are diagnosed with HIV infection each year through Public Health funded programs.

Figure 3. Numbers of tests, testing events, and confidential tests for unduplicated individuals

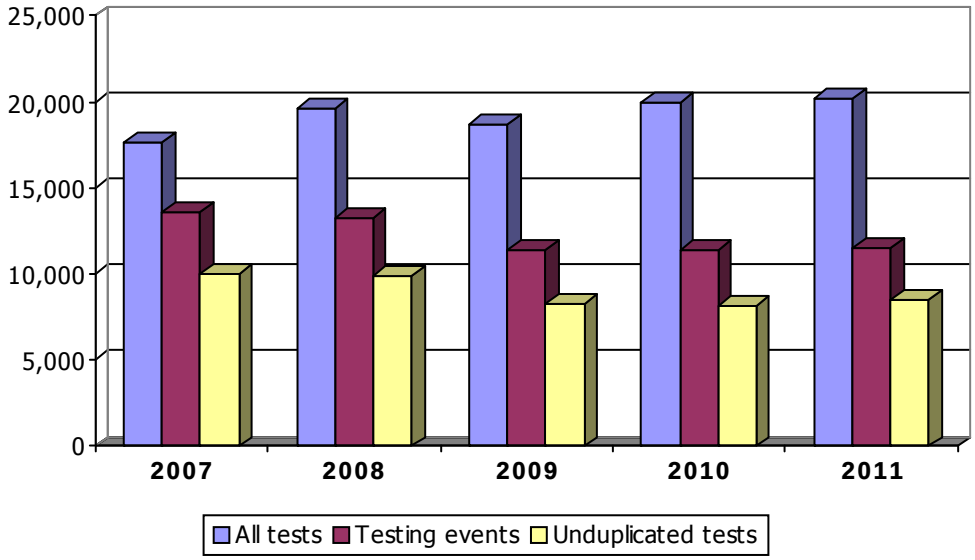


Figure 4: Types of HIV tests/testing events—anonymous or confidential—performed by Public Health—Seattle & King County, 2007-2011

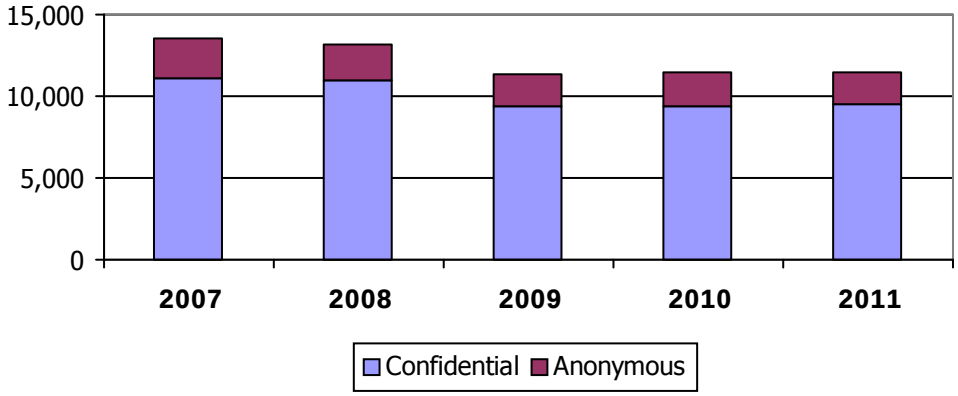
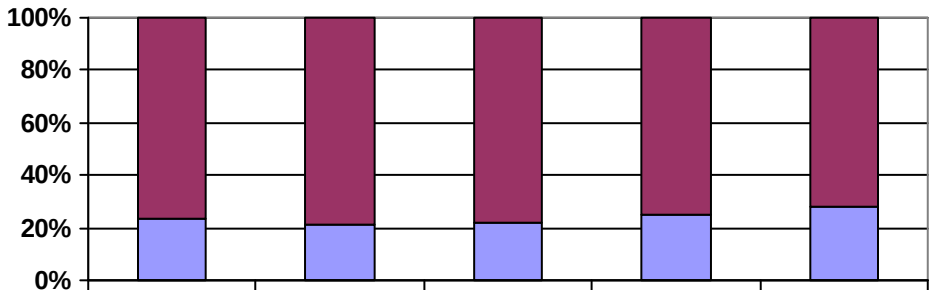


Figure 5: Proportion of HIV diagnoses made (or confirmed) by publicly funded HIV test sites (confidential HIV tests only)



	2007	2008	2009	2010	2011
Other HIV testing	244	249	238	242	198
Publicly funded testing	76	66	67	82	76

Figure 6. HIV risk characteristics of individuals testing for HIV at publicly funded HIV test sites

Figure 6a. HIV risk categories of unduplicated confidential public health HIV tests, 2007-2011

Negative Testers **Positive Testers**

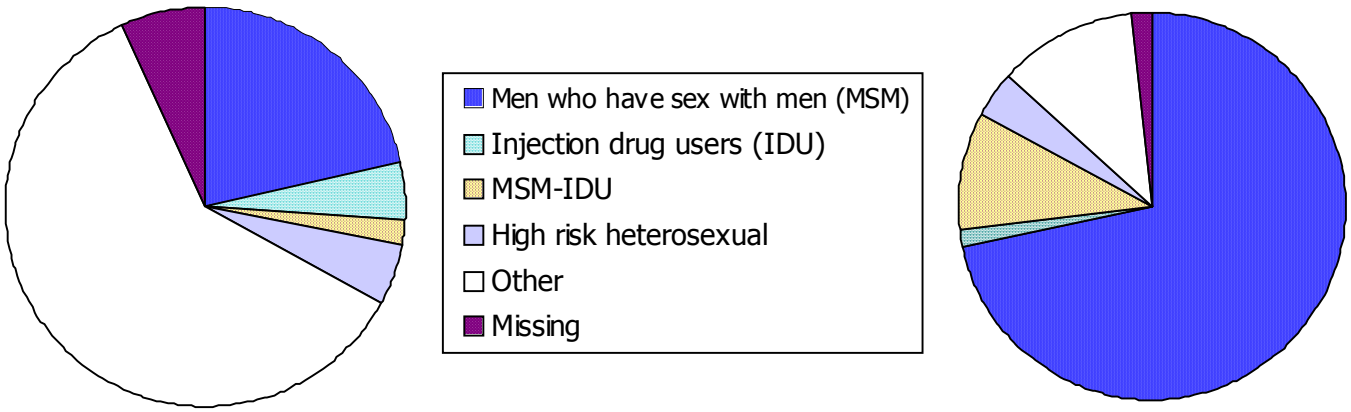


Figure 6b. Race/ethnicity of unduplicated confidential public health HIV tests, 2007-2011

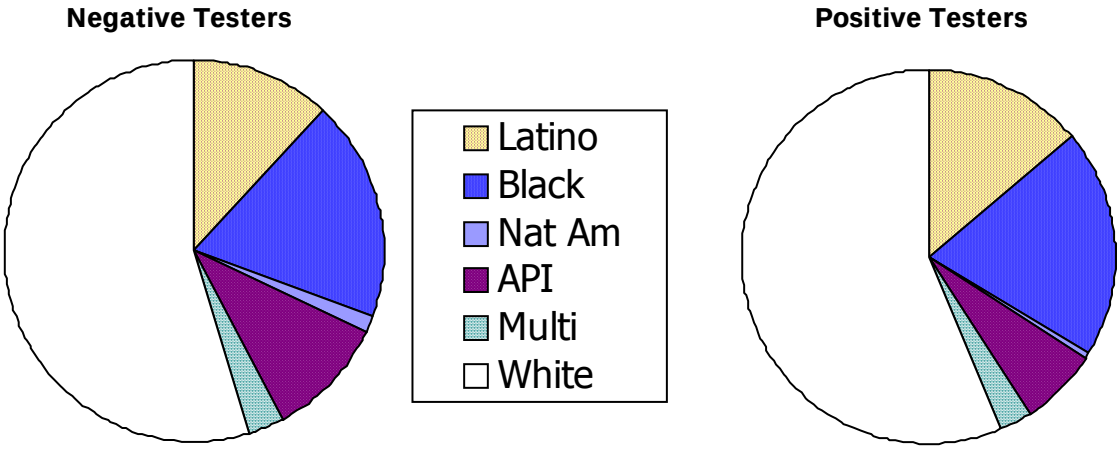


Figure 6c. Gender of unduplicated confidential public health HIV tests, 2007-2011

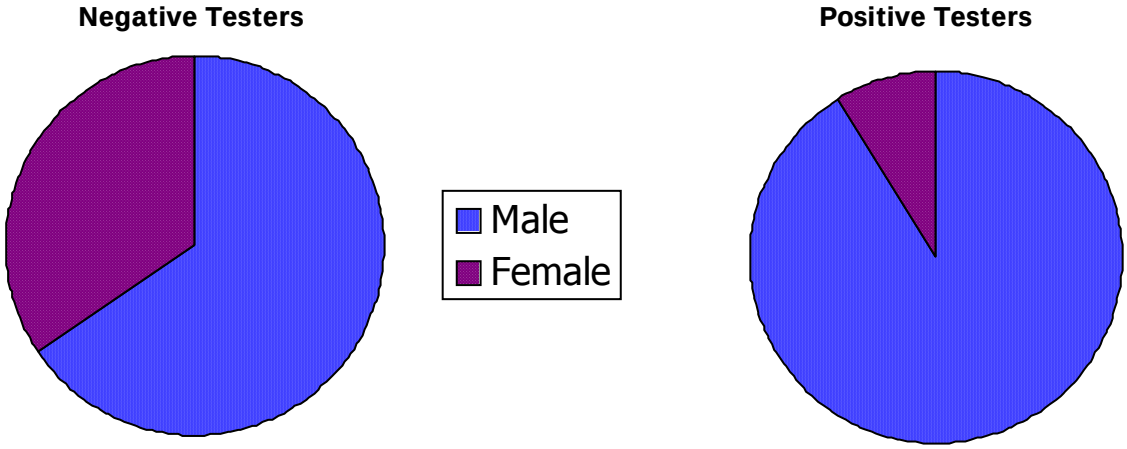


Figure 6d. Age distribution for most recent test for those testing negative or first positive test, unduplicated confidential public health HIV tests, 2007-2011

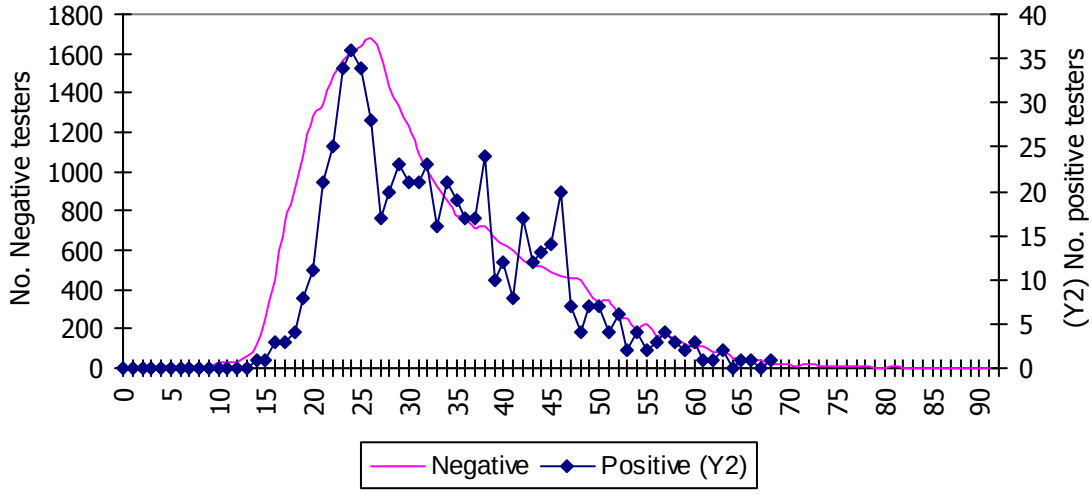
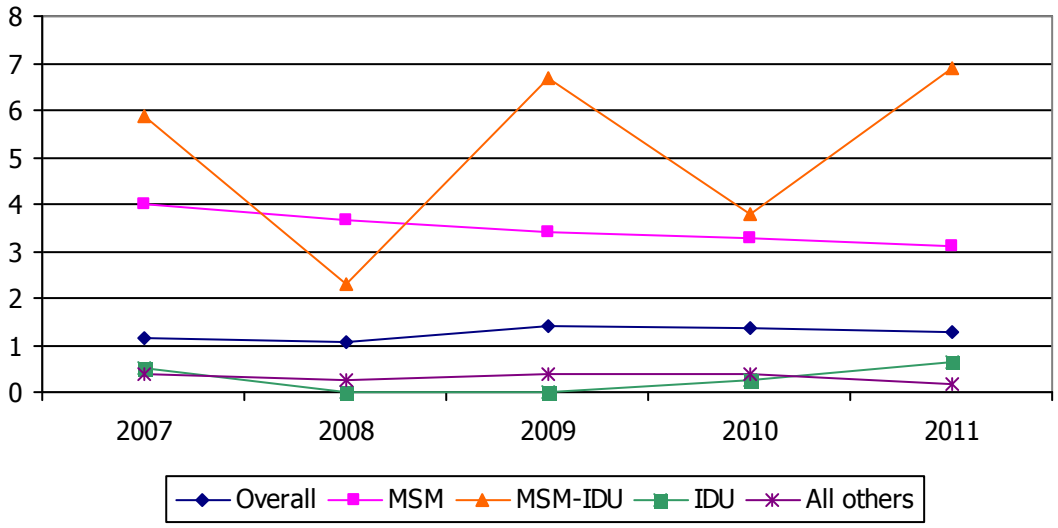


Figure 7. Annual percent of individuals testing positive, excluding people with a self reported positive HIV test more than six months earlier among unduplicated confidential public health HIV tests, 2007-2011



Discussion

A large volume of publicly funded HIV tests (nearly 20,000 per year) are conducted each year for roughly 9,000 people/year. These account for roughly one quarter of reported HIV cases for King County. Due to anonymous testers who establish care outside of publicly funded case sites, the actual proportion of HIV cases which were initially screened by public health-funded testing sites is likely to be higher. As expected, MSM, and especially MSM-IDU were more likely to test HIV positive relative to those in other risk categories. MSM (including MSM IDU) were 81% of individuals testing positive for HIV but only 23% of those testing negative. This discrepancy speaks to the need of continued efforts to promote and fund HIV testing among MSM. Locally, the infection rate among publicly tested IDU is similar to the HIV rate among all others not reporting MSM risk.

Nearly 20 people were diagnosed with HIV each year who did not report MSM or IDU exposures, speaking to the importance of universal testing as per the CDC guidelines.[1]

Although individuals testing for HIV at publicly funded testing sites may not be representative of the general population, trend data show a relative stability in numbers of tests, numbers of positive tests, and rates of positive tests over the past five years.

Limitations of these data include not having overall test data for the county, not being able to de-duplicate anonymous testers, missing data, and other potential data quality problems.

- *Submitted by Susan Buskin, Joanne Stekler, and Christina Thibault*

[1]Branson BM et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep 2006;(RR-14):1-17.
[2]Stekler JD et al. HIV testing in a high-incidence population: is antibody testing alone good enough? Clin Infect Dis. 2009;49:444-53.

Perceived and Internal Stigma Among Men Attending a Gay Pride Event in Seattle

Background

There has been widespread interest in whether sexual identity related stigma is a driver in HIV transmission. However, there are few studies showing that sexual identity related stigma among men who have men (MSM) leads to risky sexual behavior, decreased HIV testing frequency or higher HIV prevalence.

Many studies have shown that MSM of color experience more sexual identity related stigma, but few have looked at whether stigma is a driver of possible HIV transmission among this population.[1-6] In a study of Black gay, lesbian, bisexual and transgender people who attended one of nine "Black Gay Pride" festivals held in U.S. cities in 2000, 43% reported experiences of homophobia.[2] One study showed that internalized homophobia was more common among black than white MSM and MSM who reported that homosexuality was wrong were less likely to test for HIV.[7] One study of Latino men found that experiences of social oppression on account of sexual orientation are strongly correlated with risky sexual behavior. One study of young African American MSM did not find an association between sexual orientation or HIV stigma and the frequency of unprotected sex in the last 30 days, but did find an that HIV stigma was associated with higher frequency of unprotected sex while using drugs or alcohol.[8]

The current analysis seeks to better understand how sexual orientation related stigma affects sexual behavior, HIV testing and HIV prevalence among MSM and explore the differences between white and non-white MSM.

Methods

In June 2010 and 2011, 349 and 346 MSM completed face-to face interviews at the Seattle Gay Pride parade. Men were eligible to complete the survey if they self-identified as a male and ever had sex with another man. Attendees at the Gay Pride event were approached by staff from Public Health-Seattle & King County and asked to complete a brief survey. Participants were given a $5 coffee card for completing the survey. The interviews consisted of yes/no and multiple choice questions and collected data on subject demographics, health insurance status, HIV testing history and status, sexual risk behavior, substance use, knowledge and interest in taking PrEP. The men were asked two questions related to sexual orientation stigma. One question regarding internal stigma asked, "How comfortable or uncomfortable do you feel about your sexual identity?". Another question asked about community stigma (perceived stigma), "How accepting are most people in your community of gay and bisexual people?". Answers were recorded on a five point scale of very uncomfortable/unaccepting to very comfortable/accepting.

Results

The vast majority of men (91%) self-identified as homosexual or bisexual. Eighty-seven percent of the men who had an HIV test reported that they were HIV negative, 12% reported they were HIV positive. Three-quarters of the men were white. Other general characteristics of the respondents have been described previously.[9] Overall, the majority of men (90%) felt that most people in their community were somewhat accepting to very accepting of gay and bisexual men (perceived stigma) and 83% of participants reported that they were somewhat to very comfortable about their sexual identity (internal stigma).

Comparing sexual behavior between whites and non-whites, whites were more likely to have three or more sex partners in the last 12 months (**Table 1**), however, there was no significant difference in the number of unprotected anal sex partners. Whites were more likely to have had unprotected anal intercourse with a partner whose HIV status was unknown or discordant.

Non-whites were more likely to report experiencing perceived stigma OR 2.98 (95% CI 1.47-6.05). A higher proportion of non-whites reported experiencing internal stigma but this was not statistically significant. Non-whites who experienced perceived stigma were more likely to not to have any sex partners in the last 12 months OR 3.55 (95% CI 1.17-10.76) (**Table 2**). Among non-whites who reported experiencing internal stigma, a higher percentage reported having three or more sexual partners in the last 12 months relative to whites OR 2.82 (95% CI 1.10-7.19). Among non-whites, there was no difference among those experiencing either type of stigma with recent HIV testing or HIV status. There were no statistically significant differences among sexual behavior, testing or HIV status

Table 1. Sexual risk behavior among White and Non-white men who have sex with men, Seattle Pride Survey, 2010 & 2011

	White N=511	Non-White N=184
Number of sex partners last 12 months		
0	17%	15%
1	41%	45%
2	15%	16%
≥3	29%	22%*
Number of unprotected sex partners last 12 months		
0	31%	37%
1	48%	50%
2	7%	6%
≥3	17%	11%
Unprotected sex with an unknown or discordant HIV status partner last 12 months		
Yes	22%	10%*

Table 2. Sexual risk behavior among White and Non-white men who have sex with men and stigma, Seattle Pride Survey, 2010 & 2011

	Whites perceived community stigma N=76	Whites no perceived community stigma N=435	Non-whites perceived community stigma N=42	Non-whites no perceived community stigma N=142
Number of sex partners last 12 months				
0	21%	21%	42%	17%*
1	34%	35%	11%	45%
2	13%	13%	11%	14%
≥3	29%	26%	26%	20%
Missing	3%	4%	11%	4%
Number of unprotected sex partners last 12 months				
0	29%	26%	44%	34%
1	45%	39%	44%	46%
2	7%	6%	0	5%
≥3	18%	13%	11%	8%
Missing	1%	16%	22%	4%
Unprotected sex with an unknown or discordant HIV status partner last 12 months				
Yes	21%	21%	0	11%
Yes	29%	21%	14%	10%

Table 2 (Continued): Sexual risk behavior among White and Non-white men who have sex with men and stigma, Seattle Pride Survey, 2010 & 2011

	Whites internal stigma N=65	Whites no internal stigma N=436	Non-whites internal stigma N=31	Non-whites No internal stigma N=147
Number of sex partners last 12 months				
0	28%	22%	32%	16%
1	26%	37%	23%	46%
2	3%	13%	7%	17%
≥3	29%	28%	35%	16%*
Missing	0	0	3%	5%
Number of unprotected sex partners last 12 months				
0	23%	32%	25%	39%
1	34%	48%	45%	51%
2	12%	6%	10%	5%
≥3	15%	15%	15%	5%
Missing	0	0	5%	0
Unprotected sex with an unknown or discordant HIV status partner last 12 months				
Yes	29%	21%	14%	10%

Figure 1. Sexual behavior among non-Whites, internal stigma

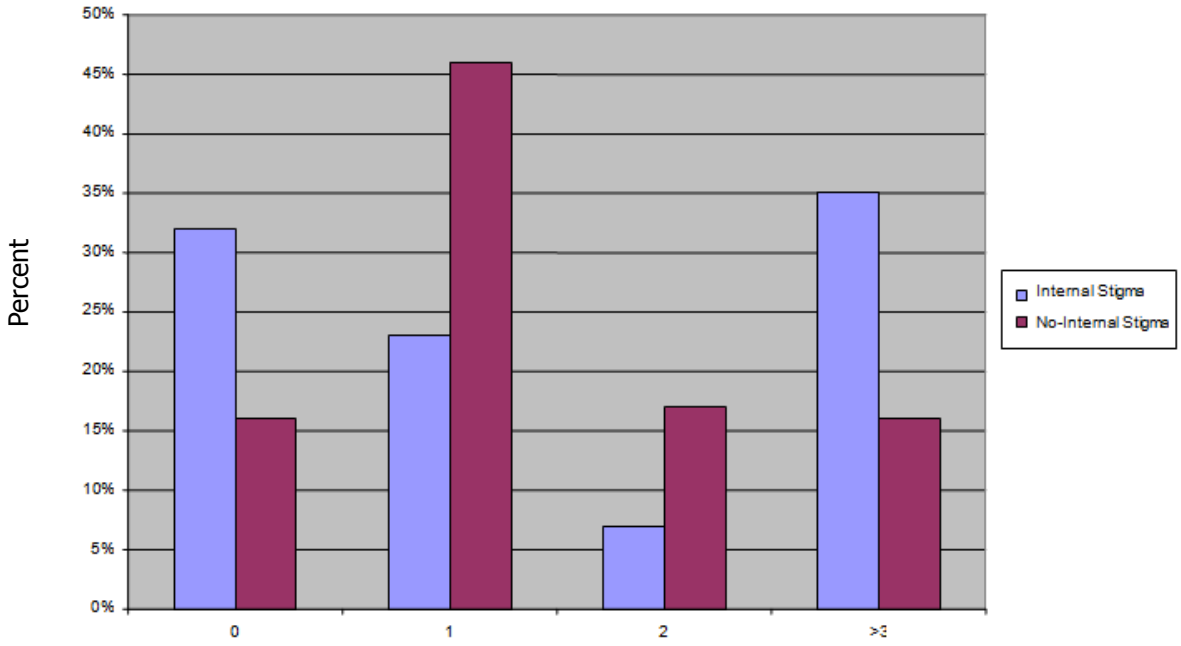
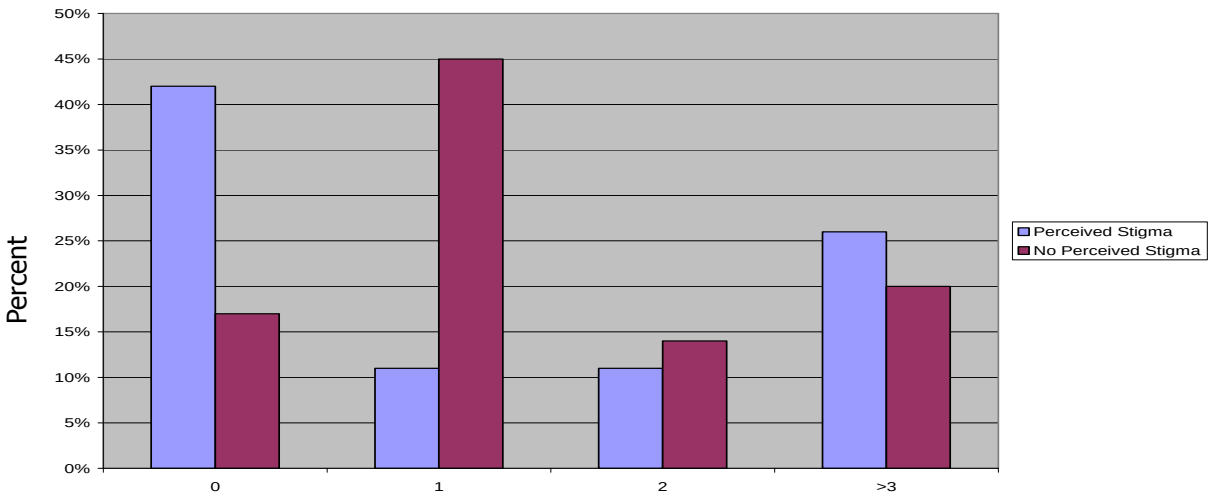


Figure 2. Sexual behavior among non-Whites, perceived stigma



Number of anal sex partners last 12 months

comparing whites who did and did not experience either type of stigma.

Conclusions

Overall, most of the men in this sample felt comfortable with their sexual orientation and felt their community was accepting of gay and bisexual people. We found that there is some evidence to support the hypothesis that internal stigma may promote sexual risk behavior among non-white MSM. However, the observed observations were complex. We did not find a consistent association between the two types of stigma and sexual risk taking behavior. We believe that perceived community and internal stigma are unique and may have different affects on sexual behavior.

This data does have some limitations. First, attendees at a Gay Pride event may be less likely to experience, or report, stigma as men who do experience sexual identity related stigma may be less likely to attend this type of event and therefore were probably underrepresented in this sample. In addition, due to low numbers, race categories had to be combined and categories were limited to white and non-white. There may be important distinctions between different races that were collapsed into the non-white group and cannot be assessed in this analysis.

There is a need for ongoing study of sexual orientation related stigma among MSM with a more representative population of MSM that includes a large sample of MSM of color. Additional research is needed to focus on different types of stigma and what facets of stigma are important in HIV related risk taking behavior among MSM.

- *Contributed by Elizabeth Barash, MPH*

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Seattle HIV Vaccine Trials Unit: *Hope Takes Action*

The world needs an HIV vaccine to prevent new infections; and vaccines have historically been among the best tools in preventing infectious diseases. But HIV has proven itself to be a very challenging virus, as shown by more than 20 years of HIV vaccine research. However, recent scientific findings show we are closer than ever to finding an effective vaccine.

As of the summer of 2011, the enrollment for HVTN 505 study, *Hope Takes Action*, has been expanded from 1,350 to 2,200 HIV-negative men and transgender women who have sex with men.

By increasing the size of the trial, we will be able to answer the question of whether this vaccine regimen can reduce the number of new HIV infections, in addition to the original questions about vaccine regimen and confirming that the vaccine is safe. It is the next logical step, given other recent advances in the prevention field:

- The Thai vaccine trial (RV144) results, announced in 2009, showed a modest but largely unexpected effect on preventing HIV infection by 31% - showing once again that we cannot predict the results of human vaccine trials.
- The Thai trial studied different vaccines than the vaccines in HVTN 505, but some of the immune responses seen to the vaccines in the Thai study were similar to some of the immune responses in other studies that test the HVTN 505 vaccines.
- CAPRISA 004 (vaginal microbicide) and iPrEX (pre-exposure prophylaxis) have placed the idea of using anti-HIV drugs for prevention (not just treatment) in the spotlight. Both of these trials achieved moderate protection from HIV infection, and show the importance of evaluating prevention of HIV infection in human trials, wherever and whenever possible. Since combination approaches are emerging as an important area of HIV prevention research, we have made some changes to HVTN 505 to better understand how people view PrEP (pre-exposure prophylaxis), and how it might work in combination with this vaccine regimen in those who voluntarily choose to take PrEP.

HVTN 505, *Hope Takes Action*, is an active study that is designed to answer three specific questions:

1. **Can the vaccine regimen protect against HIV infection?** Our thinking about this vaccine regimen has changed and evolved as a result of recent developments in other HIV vaccine studies, and in pre-clinical studies with animal models. Since we now have data that were not available when HVTN 505 was originally designed, there is good scientific justification to ask whether the vaccine regimen can reduce the likelihood of new infections.
2. **Can this vaccine regimen lower viral load among people who do become infected?** Typically, the lower the viral load, the longer it may take before a person develops symptoms of AIDS. Having a lower viral load may also reduce the chances of passing HIV to others. A vaccine that could lower viral load might still have tremendous public health benefits, even if it could not prevent HIV infection.
3. **Is the vaccine regimen safe and well-tolerated?** Safety is always a primary concern, and an objective of the study is to evaluate tolerability and safety in people receiving the vaccine.

While this vaccine regimen is not on a path to licensure, the results of HVTN 505 will help us to better understand the human immune response to vaccines, and how to develop vaccines that are better able to produce the best immune response.

We will continue our efforts with the support of our invaluable volunteers and local community partnerships, but the fight against HIV/AIDS is far from over. A comprehensive program to fight this disease must include prevention, treatment and access to care. But as history demonstrates, a vaccine is our best long-term hope for ending this epidemic.

- *Contributed by Ro Yoon*

For more information about our work at Seattle HIV Vaccine Trials Unit, please visit us at www.seattlevaccines.org or contact our community educator, Ro Yoon, at (206) 667-5487.

Next Steps in Pre-exposure Prophylaxis (PrEP) Research

There have been major new, at times confusing, developments in pre-exposure prophylaxis (PrEP) research the past two years. Antiretroviral (ARV) prophylaxis has been the standard of care to reduce perinatal transmission of HIV since the landmark ACTG 076 study in 1996. The first study which showed efficacy of antiretroviral prophylaxis to reduce the sexual transmission of HIV was the CAPRISA 004 study conducted in South Africa. Tenofovir 1% gel, applied vaginally within 12 hours before and after sex, reduced the risk of HIV acquisition by 39% overall and by 54% in women with high gel adherence. Subsequent results reported the effectiveness of oral tenofovir and emtricitabine (FTC)/ tenofovir(TDF) (Truvada) in reducing sexual transmission of HIV in both high risk men who have sex with men (MSM) and HIV discordant heterosexual couples.

The iPrEx study was conducted in 2,499 high-risk HIV-negative MSM in the United States and countries in Africa, Asia and South America. The results, published in the New England Journal of Medicine in November 2010, showed that Truvada reduced the risk of HIV acquisition overall by 44 percent and by up to 73 percent among men who reported taking the drug consistently (at least 90 percent of days). Among men who had detectable drug in their blood, the risk was reduced by more than 90 percent.

The Partners PrEP study was conducted among 4,758 heterosexual serodiscordant couples in Kenya and Uganda. Results were presented at the 6th International AIDS Society Conference in July 2011. Oral Truvada reduced their risk of HIV acquisition by 73 percent, and oral tenofovir reduced HIV acquisition by 63% compared with placebo. Presented at the same conference were the preliminary results of the CDC-sponsored Botswana TDF2 trial in 1,200 HIV-negative heterosexual men and women. Oral Truvada for PrEP reduced HIV acquisition by 63% in this study.

There have been some notable disappointments though in the PrEP research arena. The FEM-PrEP study was stopped early in April 2011 because the trial would not be able to establish the efficacy of Truvada among 1,951 HIV-negative women in sub-Saharan Africa. The VOICE trial is a study conducted by the Microbicide Trials Network (MTN) in sub-Saharan Africa as well. This study had five arms, comparing vaginal and oral daily dosing of tenofovir 1% gel, oral tenofovir and oral Truvada to vaginal or oral placebo in 5,029 women at 15 trial sites in Uganda, South Africa and Zimbabwe. The tenofovir gel and oral tenofovir arms were stopped early due to a lack of efficacy in September and November 2011, respectively. The oral Truvada versus oral placebo arms are ongoing and the last study visits are scheduled for August 2012, with results expected in early 2013.

On December 15, 2010, Gilead Sciences submitted a supplemental New Drug Application to the FDA for the approval of Truvada for a new indication for PrEP. A review of that application by the FDA is scheduled for May 2012.

South Africa is conducting a confirmatory study of the CAPRISA 004 finding, the FACTS 001 study, which began enrollment in October 2011. The study will enroll a minimum of 2,200 HIV-negative women.

Studies will soon begin to investigate other ARVs for PrEP, including a vaginal dapivirine ring, and oral maraviroc. The MTN is planning a study to prevent HIV infection with a vaginal ring containing the ARV NNRTI drug dapivirine for extended 28-day use. The study will enroll approximately 3,475 women at several sites in Africa beginning mid-2012 and will take approximately two years to conduct, with results anticipated late 2014 or early 2015.

The HIV Prevention Trials Network, in collaboration with the AIDS Clinical Trials Group, will soon initiate a safety and tolerability study in 400 MSM and 200 women in the U.S. comparing four oral PrEP regimens: maraviroc (MVC) 300 mg + *FTC placebo + TDF placebo* orally once daily; MVC 300 mg + FTC 200 mg + *TDF placebo* orally once daily; MVC 300 mg + *FTC placebo* + TDF 300 mg orally once daily; and *MVC placebo* + FTC 200 mg + TDF 300 mg orally once daily. Maraviroc is an FDA-approved drug to treat HIV that blocks a host cell receptor (CCR5) that HIV needs to enter and infect CD4-+ T cells. The University of Washington AIDS Clinical Trials Unit is one of the 12 sites in the U.S. that will be conducting this trial.

In all of the above studies no major safety concerns were noted with topical or systemic PrEP. The PrEP research field is very dynamic and the major studies noted above should help clarify the conflicting efficacy data that has been observed to date and hopefully diversify the tenofovir-based regimens that have been investigated most extensively to date.

University of Washington AIDS Clinical Trials Unit
325 9th Avenue, 2-West Clinic; Box 359929
Seattle, WA 98104
206-744-3184 (voice); 206-744-3483 (fax); www.uwactu.org

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

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

March 2012

Antiretroviral Studies

Study 5280 The Vitamin D Study

Eligibility	Study Purpose	Study Drug or Treatment
• HIV-positive and 18 years or older • Have never taken anti-HIV medication • Have an HIV viral load greater than 1000 copies/ml • HIV genotype shows no evidence of resistance to Atripla • Are not taking more than 800 IU/day of Vitamin D • Are not using calcium supplement greater than 500 mg/day • Are not pregnant, breast feeding, or planning pregnancy • Do not have very low levels of Vitamin D or a history of osteoporosis (weak bones)	To evaluate if high-dose vitamin D and calcium supplements can decrease bone loss associated with starting HIV medications.	**Medications While on Study:** • Atripla® • (efavirenz/emtricitabine/tenofovir) • Vitamin D3 or placebo (dummy pill) • Calcium carbonate or placebo o Volunteers will be randomized to take Vitamin D3 and calcium carbonate or placebos. o **All subjects will receive Atripla**. **Length of Study**: About 48 weeks **Schedule of Study Visits**: Screening, entry and weeks 12, 24, 36, and 48. **Reimbursement:** Clinical exams, study medications, and lab tests are provided at no cost. You will receive $20 per visit starting at entry. DEXA $15 per test at entry and week 48.

Rescue Studies (none currently available)

Eligibility	Study Purpose	Study Drug or Treatment

Study 5251 The Telephone Support Study

Eligibility	Study Purpose	Study Drug or Treatment
• Age 18 or older • Enrolled in an approved ACTG study • Virologic failure on antiretroviral therapy within 16 weeks of entry • History of earlier non-compliance to antiretroviral regimen • HIV RNA = 400 copies/mL • Starting new antiretroviral regimen	To determine if nursing telephone support can improve adherence and improve response to HIV medications.	**Length of Study**: Approximately 72 weeks (1.5 years) **Schedule of Study Visits**: Screening, pre-entry, entry. Study visits at weeks 12, 24, 48 and 72, which will be scheduled at the same time as visits for the partner study. **Telephone calls** from nurse: one a week for 8 weeks and every other week for 40 weeks. **Medications Administered During Study:** None **Reimbursement:** Subjects will receive $20 for each visit, starting with entry.

Complications of HIV and Other Conditions		
Study 5275 The Inflammation Study		
Eligibility	Study Purpose	Study Drug or Treatment
• HIV positive people age 18 or older • Currently on a protease inhibitor as part of your anti-retroviral therapy for at least 6 months and no plans to change medications • Undetectable HIV viral load • Not on any cholesterol lowering medication • LDL greater than 70 and less than 130mg/dl • Women should not be pregnant, breast feeding, or planning pregnancy • No active hepatitis B or C	To see if treatment with atorvastatin (Lipitor®) is effective at reducing markers of inflammation in the blood that may contribute to heart disease and cancer in HIV infected people.	**Medications while on study:** Atorvastatin and placebo will be provided while on this study. Subjects will take each drug for 20 weeks and no drugs for 4 weeks in between. **Length of study:** 48 weeks **Schedule of study visits:** Screening, pre-entry, entry, 2, 4, 8, 12, 20, 21, 24, 26, 28, 32, 36, 44, 45, and 48 weeks **Reimbursement:** Clinical exams, atorvastatin/placebo, and lab tests are provided at no cost. $20 per visit starting at entry.
Study 5272 Oral HPV Study		
Eligibility	Study Purpose	Study Drug or Treatment
• HIV+ men and women, age 18 and up, starting HIV meds for the 1st time • Viral load above 1,000 copies/Ml • Have not previously taken HIV meds for more than 10 days • Have not received HPV vaccine or plan to receive it within 6 months • Have not taken entecavir to treat hepatitis B for longer than 2 months • Have not taken HIV vaccines or any investigational meds within 1 month • Have not taken other medications that affect the immune system within 1 month • Lab values within acceptable limits	To see if human papillomavirus (HPV) and warts are in people's mouths before and after beginning to take HIV medicines for the 1st time.	**Medications while on study:** No study medications given **Length of Study:** About 2 years **Schedule of Study Visits:** Screening, entry, and week 4, one visit between weeks 12-18, and visits at weeks 24 and 48. Visits include physical exams, blood draws and questionnaires. Saliva (spit) is collected at all visits except weeks 4 and 48. **Reimbursement:** Exams and lab tests are provided at no cost. HIV meds are not provided by the study. Participants will receive $20.00 per study visit, starting at entry.
Study 5293 The Cholesterol Study		
• HIV+ men and women, age 18 or older • On HIV medications for at least 2 years • CD4 (T-cell) count ≥100 with an undetectable viral load • Fasting HDL ("good") cholesterol ≤ 50 mg/dL for women • Fasting triglycerides 200-800 mg/dL and LDL ("bad") cholesterol below 160 mg/dL • Do not have diabetes or heart disease • Are not pregnant, breastfeeding or planning pregnancy • Are not taking certain medications to lower cholesterol	To see if high-density lipoprotein (HDL or "good") cholesterol is increased in HIV-infected people treated with extended-release niacin or fenofibrate, and to see if the reaction of an artery in the arm improves with these medications.	**Medications while on study:** Extended-release niacin and aspirin or fenofibrate will be provided at no cost **Length of Study:** About 24 weeks (6 months) **Schedule of Study Visits:** Screening, entry, and at weeks 4, 8, 12, 16 and 24 **Reimbursement:** Clinical exams and lab tests are provided at no cost. You will receive $20 per visit starting at entry and $15 for each ultrasound test of the artery in your arm.

Study 5296 The Immune Activation Study		
Eligibility	Study Purpose	Study Drug or Treatment
• Are HIV infected and 18 years of age or older • Can not have been infected within the past 6 months • Are not taking anti-HIV medication • Have not taken them within the past 6 months • And do not plan to start them during the study • Have an HIV viral load greater than 50 copies/mL • Have a CD4 (T-cell count) above or equal to 400 cells/mm^3 • Are not pregnant, breast feeding, or planning pregnancy • Do not have a history of swallowing problems, intestinal blockage or severe constipation • Do not have severe kidney or liver disease • Do not plan to change lipid (cholesterol) lowering medications	To see if sevelamer (a medication used for people with kidney failure) can reduce endotoxin levels and inflammation in HIV-infected people who aren't taking anti-HIV medication. Endotoxin is a part of bacteria in the gut that can cross into the blood and cause inflammation.	**Medications While on Study:** Sevelamer carbonate – 2 tablets 3 times a day for 8 weeks (2 months) **Length of Study**: About 16 weeks (4 months) **Schedule of Study Visits**: Screening, pre-entry, entry and weeks 1, 2, 4, 6, 12 and 16. All visits except screening are fasting. **Reimbursement:** Clinical exams, study medications, and lab tests are provided at no cost. You will receive $20 per visit starting at entry.
HIV and Women Studies		
Study 5283 The Contraception Study		
Eligibility	Study Purpose	Study Drug or Treatment
• Are an HIV-1 positive woman 18 years of age or older • Are taking Kaletra as part of your anti-retroviral therapy • Are not planning to change anti-retroviral therapy • Have an HIV-1 viral load under 400 copies/mL • Have CD4+ T cells greater than 200 • Are premenopausal with normal ovarian function • Have had a Pap smear in the last year • Have not received Depo-Provera in the last 6 months and no other hormonal therapy for 1 month • Are willing to abstain from grapefruit products • Are not pregnant, breast feeding, or planning pregnancy • Have not had a blood clot in your legs or lungs	To see if the level of Depo-Provera in the blood is affected by Kaletra (lopinavir/ritonavir [LPV/r]). It is not known whether taking Depo-Provera together with Kaletra changes the amount of Kaletra in the blood, so this study will also look at the levels of HIV and Kaletra before and after a shot of Depo-Provera is given.	**Medications while on Study:** Depo-Provera at entry visit with the option of a second dose at week 12 **Length of Study**: About 12 weeks **Schedule of Study Visits**: Screening, pre-entry, entry, and weeks 2, 4, 6, 8, and 12. These study visits will last about 1 hour except entry and week 4 visits which will last between 11-12 hours. **Reimbursement:** Clinical exams, Depo-Provera injections, and lab tests are provided at no cost. Participants receive $100 for completion of the entry and week 4 visits and $20 for all other study visits.

Visit our new website at www.uwactu.org and find out about our latest studies, meet our staff, and find out about our outreach programs.

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