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

Summary Tables and Figures

HIV/AIDS Epidemiology and Surveillance News

HIV/AIDS Epidemiology publications are also on the internet at:
www.kingcounty.gov/healthservices/health/communicable/hiv/epi.aspx
Alternative formats provided upon request. To be included on the mailing list or to request address corrections, please call (206) 296-4645.

***Suggested citation**: HIV/AIDS Epidemiology Unit, Public Health–Seattle & King County and the Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. HIV/AIDS Epidemiology Report, Second Half 2008: Volume 73.*

Credits

This 73rd edition of the HIV/AIDS Epidemiology report includes data through the end of December 2008. This report is produced jointly by Public Health – Seattle & King County and the Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. It is funded partly by a Centers for Disease Control and Prevention cooperative agreement for HIV/AIDS surveillance. We thank the medical providers caring for people with HIV/AIDS and the clinics and patients participating in epidemiologic projects. Their cooperation with public health department HIV/AIDS control efforts permits the collection of data included in this report which are used for further prevention and planning efforts. We also wish to acknowledge the outstanding assistance of our staff, including Faythe Crosby, Tom Jaenicke and Christy Johnson (disease investigation), Sandy Hitchcock (data entry and quality assurance), Shirley Zhang and Leslie Pringle (data management), and Amy Bauer and Christina Thibault (epidemiologists).

HIV/AIDS Epidemiology Report Co-editors:

HIV/AIDS Epidemiology Program
Susan Buskin, PhD, MPH and Jim Kent, MS
Senior Epidemiologists, PH—S & KC
400 Yesler Way, 3rd Floor; Seattle, WA 98104
(206) 296-4645

IDRH Assessment Unit
Maria Courogen, MPH
Section Manager & Lead Epidemiologist
Washington State Department of Health
PO Box 47838; Olympia, WA 98504-7838

Public Health
Seattle & King County

Washington State Department of Health

Contributors To This Issue

Public Health – Seattle & King County
- Amy Bauer, MPH, Epidemiologist
- Hanne Thiede, DVM, MPH, Senior Epidemiologist
- Nadine Snyder, Project Program Manager
- Richard Burt, PhD, Epidemiologist
- Christina Thibault, MPH, Epidemiologist
- Shonita Savage, Research Data Specialist
- Rebecca Hutcheson, MSW, LICSW

Washington State Department of Health
- Todd E Rime, MA, Research Investigator

University of Washington
- Shelia Dunaway, MD
- Christina Marra, MD
- David Lee, MSW, MPH
- Mary Annese, MSPA, Program Evaluator
- Laurie Conratt, MBA, Program Manager

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, online http://apps.leg.wa.gov/WAC/default.aspx?cite=246-101.

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

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

For further information about HIV/AIDS reporting requirements, please call your local health department or the Washington State Department of Health at 1 (888) 367-5555. In King County, call (206) 296-4645.

Table 1: Surveillance of reported[1] HIV/AIDS cases, deaths, and people living with HIV/AIDS—reported as of 12/31/2008—King County, other Washington counties, all Washington State, and U.S.

		Adult/Adolescent		Pediatric[2]	
		HIV	AIDS	HIV or AIDS	Total
King County	New cases reported in 2nd half 2008	116	83	0	199
	Cases reported year-to-date	244	187	2	433
	Cumulative cases	2,921	7,823	35	10,779
	Cumulative deaths	152	4,280	9	4,441
	Persons living (prevalent cases)	2,769	3,543	26	**6,338**
Other Counties	New cases reported in 2nd half 2008	73	78	0	151
	Cases reported year-to-date	155	179	1	335
	Cumulative cases	1,653	4,547	39	6,239
	Cumulative deaths	121	2,342	12	2,475
	Persons living (prevalent cases)	1,532	2,205	27	**3,764**
Washington State	New cases reported in 2nd half 2008	189	161	0	350
	Cases reported year-to-date	399	366	3	768
	Cumulative cases	4,574	12,370	74	17,018
	Cumulative deaths	273	6,622	21	6,916
	Persons living (prevalent cases)	4,301	5,748	53	**10,102**
United States[3]	Estimated cases as of 12/31/2007				
	Cumulative cases	265,062	1,009,220	9,209	1,283,491
	Cumulative deaths	8,699	557,376	5,417	571,492
	Persons living (prevalent cases)	256,363	451,844	3,792	**711,999**

1. An estimated 11,000 to 12,000 persons are living in Washington with HIV infection including AIDS. These include the 10,102 prevalent cases reported above. In King County, there are an estimated 7,200 to 7,800 persons living with HIV infection including AIDS. These include the 6,338 prevalent cases reported above. The difference between the estimated cases and the reported prevalent cases include three groups:
   a. A small number of persons diagnosed with AIDS but not yet reported (probably fewer than 5% of the total AIDS reports).
   b. An unknown number of persons diagnosed with HIV infection but not yet reported.
   c. An unknown number of persons (10-20% of the total) infected with HIV but not yet diagnosed or reported.
2. Pediatric cases are persons under age 13 at the time of diagnosis with HIV or AIDS.
3. U.S. data reporting includes:
   a. HIV data from the 34 states requiring confidential, named-based HIV infection reporting since at least 2003.
   b. AIDS data from 50 states plus D.C., and excludes U.S. dependent areas with totals of 32,051 cumulative AIDS and 20,178 AIDS deaths.
   c. Pediatric AIDS only cases.

Table 2: Cumulative HIV/AIDS case counts and deaths by resident county and AIDSNet region at diagnosis—reported as of 12/31/2008—Washington State

		Cumulative Cases	Deaths		Presumed Living			
			No.	(%)[1]	HIV	AIDS	Total	(Total %)[2]
	Adams	6	1	(17)	1	4	5	(0.0)
	Asotin	21	8	(38)	2	11	13	(0.1)
	Columbia	7	4	(57)	1	2	3	(0.0)
	Ferry	7	6	(86)	0	1	1	(0.0)
	Garfield	1	0	(0)	1	0	1	(0.0)
	Lincoln	4	2	(50)	0	2	2	(0.0)
	Okanogan	36	9	(25)	9	18	27	(0.3)
	Pend Orielle	9	6	(67)	0	3	3	(0.0)
	Spokane	707	314	(44)	158	235	393	(3.9)
	Stevens	26	14	(54)	7	5	12	(0.1)
	Walla Walla	63	31	(49)	6	26	32	(0.3)
	Whitman	18	4	(22)	3	11	14	(0.1)
Region 1	**Subtotal**	**905**	**399**	**(44)**	**188**	**318**	**506**	**(5.0)**
	Benton	124	39	(31)	33	52	85	(0.8)
	Chelan	64	26	(41)	17	21	38	(0.4)
	Douglas	5	2	(40)	1	2	3	(0.0)
	Franklin	77	21	(27)	23	33	56	(0.6)
	Grant	49	21	(43)	9	19	28	(0.3)
	Kittitas	24	10	(42)	4	10	14	(0.1)
	Klickitat	16	6	(38)	7	3	10	(0.1)
	Yakima	248	89	(36)	55	104	159	(1.6)
Region 2	**Subtotal**	**607**	**214**	**(35)**	**149**	**244**	**393**	**(3.9)**
	Island	80	36	(45)	14	30	44	(0.4)
	San Juan	25	12	(48)	6	7	13	(0.1)
	Skagit	97	41	(42)	23	33	56	(0.6)
	Snohomish	986	362	(37)	244	380	624	(6.2)
	Whatcom	231	93	(40)	57	81	138	(1.4)
Region 3	**Subtotal**	**1,419**	**544**	**(38)**	**344**	**531**	**875**	**(8.7)**
Region 4	**King**	**10,779**	**4,441**	**(41)**	**2,790**	**3,548**	**6,338**	**(62.7)**
	Kitsap	309	127	(41)	76	106	182	(1.8)
	Pierce	1,541	638	(41)	418	485	903	(8.9)
Region 5	**Subtotal**	**1,850**	**765**	**(41)**	**494**	**591**	**1,085**	**(10.7)**
	Clallam	80	38	(48)	18	24	42	(0.4)
	Clark	647	236	(36)	187	224	411	(4.1)
	Cowlitz	143	60	(42)	39	44	83	(0.8)
	Grays Harbor	83	34	(41)	18	31	49	(0.5)
	Jefferson	38	18	(47)	9	11	20	(0.2)
	Lewis	53	27	(51)	8	18	26	(0.3)
	Mason	111	30	(27)	24	57	81	(0.8)
	Pacific	31	12	(39)	11	8	19	(0.2)
	Skamania	7	6	(86)	0	1	1	(0.0)
	Thurston	262	92	(35)	61	109	170	(1.7)
	Wahkiakum	3	0	(0)	1	2	3	(0.0)
Region 6	**Subtotal**	**1,458**	**553**	**(38)**	**376**	**529**	**905**	**(9.0)**
Total		**17,018**	**6,916**	**(41)**	**4,341**	**5,761**	**10,102**	**(100.0)**

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

Table 3: Demographic characteristics of people presumed living with HIV/AIDS—reported as of 12/31/2008—King County, other Washington counties, all Washington State, and U.S.

	King County		Other Counties		Washington State		Estimated U.S.AIDS[1]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Sex								
Male	5,698	(90)	3,021	(80)	8,719	(86)	349,180	(77)
Female	640	(10)	743	(20)	1,383	(14)	106,456	(23)
Age Group at HIV Diagnosis								
Under 13	28	(0)	36	(1)	64	(1)	3,792	
13-19	118	(2)	107	(3)	225	(2)	*Not known*	
20-29	1,832	(29)	1,129	(30)	2,961	(29)	*Not known*	
30-39	2,685	(42)	1,345	(36)	4,030	(40)	*Not known*	
40-49	1,296	(20)	824	(22)	2,120	(21)	*Not known*	
50-59	316	(5)	252	(7)	568	(6)	*Not known*	
60 and over	63	(1)	71	(2)	134	(1)	*Not known*	
Current Age as of 12/31/2008								
Under 13	7	(0)	9	(0)	16	(0)	889	(0)
13-19	20	(0)	25	(1)	45	(0)	3,340	(1)
20-29	354	(6)	285	(8)	639	(6)	20,736	(5)
30-39	1,281	(20)	809	(21)	2,090	(21)	84,866	(19)
40-49	2,644	(42)	1,413	(38)	4,057	(40)	190,315	(42)
50-59	1,549	(24)	910	(24)	2,459	(24)	117,289	(26)
60 and over	483	(8)	313	(8)	796	(8)	38,201	(8)
Race/Ethnicity[2]								
White	4,323	(68)	2,666	(71)	6,989	(69)	159,338	(35)
Black	1,051	(17)	457	(12)	1,508	(15)	199,124	(44)
Hispanic	611	(9)	422	(11)	1,033	(10)	86,244	(19)
Asian & Pacific Islander	196	(3)	108	(3)	304	(3)	4,828	(1)
Asian	*183*	*(3)*	*62*	*(2)*	*245*	*(2)*	*4,398*	
Native Hawaiian & Other PI	*13*	*(0)*	*17*	*(0)*	*30*	*(0)*	*430*	
Native American or Alaskan Native	84	(1)	83	(2)	167	(2)	1,700	(0)
Multiple Race	59	(1)	11	(0)	70	(1)	4,402*	(1)
Unknown Race	14	(0)	17	(0)	31	(0)	*included in multiple race	
HIV Exposure Category								
Male-male sex	4,377	(69)	1,844	(49)	6,221	(62)	213,510	(47)
Injection drug use (IDU)	336	(5)	484	(13)	820	(8)	97,167	(21)
IDU & male-male sex	537	(8)	302	(8)	839	(8)	28,691	(6)
Heterosexual contact[3]	621	(10)	662	(18)	1,283	(13)	106,865	(23)
Blood product exposure[4]	36	(1)	45	(1)	81	(1)	*N/A* [4]	
Perinatal exposure	21	(0)	29	(1)	50	(1)	3,592	(1)
Other/undetermined[4]	410	(6)	398	(11)	808	(8)	5,811	(1)
Total	**6,338**	**(100)**	**3,764**	**(100)**	**10,102**	**(100)**	**455,636**	**(100)**

1. U.S. AIDS-only data for 50 states and Washington D.C. were reported as of 12/31/2007; detailed summaries of the 246,909 living HIV cases reported from states and areas with confidential name-based HIV infection reporting were not readily available. Hemophilia and blood product numbers were included in the 'Undetermined / other' category.
   a. CDC data for age at diagnosis were grouped differently by CDC, and could not adequately be redistributed to agree with Washington state intervals. The current age data were calculated as of 12/31/2005.
   b. Includes hemophilia, blood transfusion, and risk not reported or not identified.
2. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, and Pacific Islanders were grouped due to small cell sizes.
3. 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).
4. 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 a bisexual male. One King/WA case was probably infected via occupational exposure. For U.S. data, blood product exposure is included in category 'Other/undetermined'.

Table 4: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category—reported as of 12/31/2008—King County

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Male												
Male-male sex	3,398	(79)	363	(35)	410	(67)	128	(65)	33	(39)	4,377	(69)
Injection drug use (IDU)	110	(3)	67	(6)	31	(5)	5	(3)	6	(7)	222	(4)
IDU & male-male sex	424	(10)	42	(4)	37	(6)	4	(2)	17	(20)	537	(8)
Heterosexual contact	45	(1)	105	(10)	24	(4)	5	(3)	1	(1)	180	(3)
Blood product exposure	15	(0)	3	(0)	2	(0)	1	(1)	0	(0)	21	(0)
Perinatal exposure	2	(0)	5	(0)	0	(0)	1	(1)	0	(0)	8	(0)
Undetermined/other	101	(2)	154	(15)	62	(10)	28	(14)	3	(4)	353	(6)
Male Subtotal	**4,095**	**(95)**	**739**	**(70)**	**566**	**(93)**	**172**	**(88)**	**60**	**(71)**	**5,698**	**(90)**
Female												
Injection drug use	58	(1)	37	(4)	3	(0)	1	(1)	13	(15)	114	(2)
Heterosexual contact[5]	148	(3)	226	(22)	34	(6)	18	(9)	10	(12)	441	(7)
Blood product exposure	4	(0)	9	(1)	2	(0)	0	(0)	0	(0)	15	(0)
Perinatal exposure	3	(0)	7	(1)	2	(0)	1	(1)	0	(0)	13	(0)
Undetermined/other	15	(0)	33	(3)	4	(1)	4	(2)	1	(1)	57	(1)
Female Subtotal	**228**	**(5)**	**312**	**(30)**	**45**	**(7)**	**24**	**(12)**	**24**	**(29)**	**640**	**(10)**
Total	**4,323**	**(68)**	**1,051**	**(17)**	**611**	**(10)**	**196**	**(3)**	**84**	**(1)**	**6,338**	**(100)**

Table 5: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category—reported as of 12/31/2008—Washington State

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Male												
Male-male sex	4,859	(70)	492	(33)	576	(56)	175	(58)	57	(34)	6,221	(62)
Injection drug use (IDU)	342	(5)	107	(7)	65	(6)	8	(3)	15	(9)	541	(5)
IDU & male-male sex	668	(10)	63	(4)	59	(6)	6	(2)	26	(16)	839	(8)
Heterosexual contact	129	(2)	156	(10)	58	(6)	13	(4)	7	(4)	363	(4)
Blood product exposure	42	(1)	3	(0)	7	(1)	1	(0)	1	(1)	54	(1)
Perinatal exposure	8	(0)	9	(1)	2	(0)	2	(1)	1	(1)	22	(0)
Undetermined/other	295	(4)	208	(14)	124	(12)	38	(13)	6	(4)	679	(7)
Male Subtotal	**6,343**	**(91)**	**1,038**	**(69)**	**891**	**(86)**	**243**	**(80)**	**113**	**(68)**	**8,719**	**(86)**
Female												
Injection drug use (IDU)	170	(2)	63	(4)	15	(1)	4	(1)	25	(15)	279	(3)
Heterosexual contact[5]	405	(6)	326	(22)	109	(11)	45	(15)	27	(16)	920	(9)
Blood product exposure	7	(0)	14	(1)	3	(0)	3	(1)	0	(0)	27	(0)
Perinatal exposure	10	(0)	11	(1)	5	(0)	2	(1)	0	(0)	28	(0)
Undetermined/other	54	(1)	56	(4)	10	(1)	7	(2)	2	(1)	129	(1)
Female Subtotal	**646**	**(9)**	**470**	**(31)**	**142**	**(14)**	**61**	**(20)**	**54**	**(32)**	**1,383**	**(14)**
Total	**6,989**	**(69)**	**1,508**	**(15)**	**1,033**	**(10)**	**304**	**(3)**	**167**	**(2)**	**10,102**	**(100)**

1. And not Hispanic. All race and ethnicity categories are mutually exclusive.
2. Due to small cell sizes, data have been combined for Asians, Native Hawaiians, and other Pacific Islanders.
3. Native American or Alaskan Native.
4. Totals include 59 King County and 70 Washington State persons classified as multiple race, and 14 King County and 31 Washington State persons with missing race.
5. Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status and HIV risk behaviors are unknown).

Table 6: People presumed living with HIV/AIDS by gender and age at HIV diagnosis—reported as of 12/31/2008—King County and Washington State

Age at HIV Diagnosis	King County				Washington State			
	Male		Female		Male		Female	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Under 13 years	13	(0)	15	(2)	29	(0)	35	(3)
13-19 years	85	(1)	33	(5)	151	(2)	74	(5)
20-29 years	1,614	(28)	218	(34)	2,491	(29)	470	(34)
30-39 years	2,470	(43)	215	(34)	3,586	(41)	444	(32)
40-49 years	1,197	(21)	99	(15)	1,877	(22)	243	(18)
50-59 years	264	(5)	52	(8)	468	(5)	100	(7)
60 years and over	55	(1)	8	(1)	117	(1)	17	(1)
Total	**5,698**	**(100)**	**640**	**(100)**	**8,719**	**(100)**	**1,383**	**(100)**

Table 7: People presumed living with HIV/AIDS by race or ethnicity and place of birth[1]—reported as of 12/31/2008—King County and Washington State

Race / Ethnicity	King County				Washington State			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
White, non-Hispanic	4,037	(97)	106	(3)	6,530	(98)	156	(2)
Black, non-Hispanic	647	(63)	374	(37)	995	(68)	468	(32)
Male black, non-Hispanic	*514*		*201*		*763*		*239*	
Female black, non-Hispanic	*133*		*173*		*232*		*229*	
Hispanic	235	(42)	325	(58)	373	(40)	565	(60)
Asian & Pacific Islander, non-Hispanic	51	(28)	129	(72)	88	(32)	189	(68)
Native American, non-Hispanic	76	(94)	5	(6)	157	(96)	6	(4)
Multiple or unknown race, non-Hispanic	60	(90)	7	(10)	80	(88)	11	(12)
TOTAL	**5,106**	**(84)**	**946**	**(16)**	**8,223**	**(85)**	**1,395**	**(15)**

1. Table 7 does not include 286 King County and 484 Washington cases missing place of birth information.

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and persons living with HIV/AIDS at end of three year intervals—reported as of 12/31/2008—King County

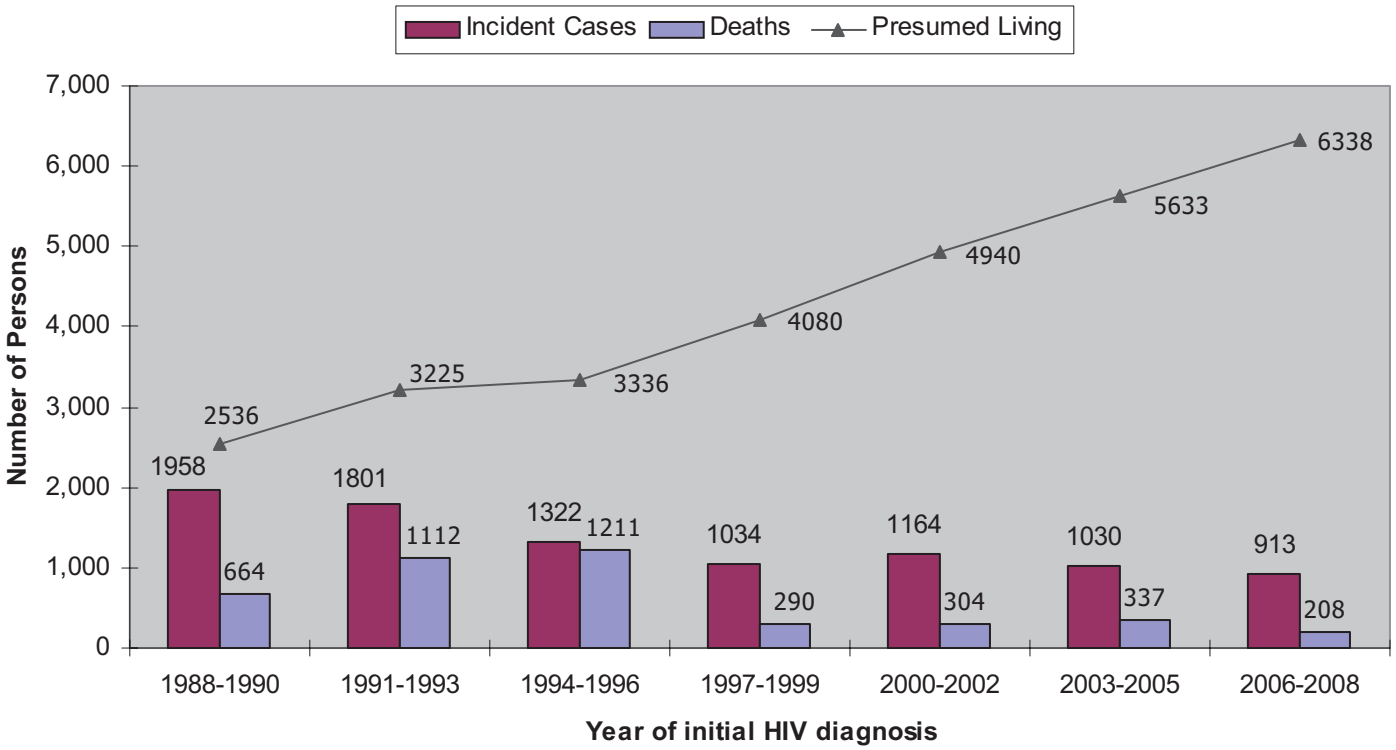


Figure 2: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS at end of three year intervals—reported as of 12/31/2008—Washington State

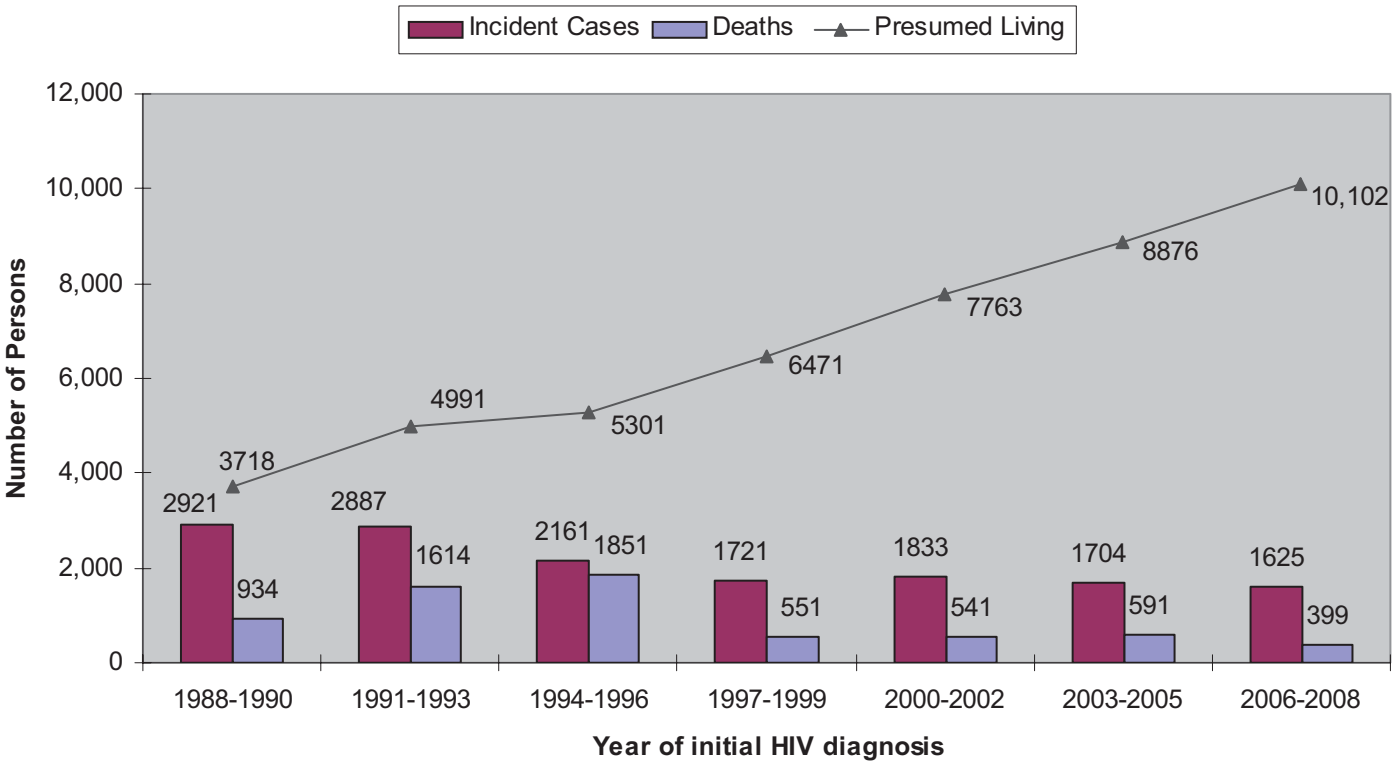


Table 8: Demographic characteristics of King County residents diagnosed 1982-2008 and reported through 12/31/2008, by date of HIV diagnosis

	1982-1999		2000-2002		2003-2005		2006-2008[1]		Trend[2]
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	2000-2008
TOTAL	**7,672**	**(100)**	**1,164**	**(100)**	**1,030**	**(100)**	**913**	**(100)**	
HIV Exposure Category									
Men who have sex with men (MSM)	5,761	(75)	730	(63)	652	(63)	561	(61)	up
Injection drug user (IDU)	427	(6)	88	(8)	52	(5)	37	(4)	down
MSM-IDU	797	(10)	93	(8)	79	(8)	68	(7)	
Heterosexual contact[3]	350	(5)	175	(15)	134	(13)	96	(11)	down
Blood product exposure	94	(1)	8	(1)	5	(0)	1	(0)	
Perinatal exposure	25	(0)	2	(0)	0	(0)	1	(0)	
SUBTOTAL- known risk	*7,454*		*1,096*		*922*		*765*		
Undetermined/other[4]	218	(3)	68	(6)	108	(10)	148	(16)	
Sex & Race/Ethnicity[5]									
Male	*7,212*	*(94)*	*1,018*	*(87)*	*910*	*(88)*	*798*	*(87)*	
White Male	5,847	(76)	678	(58)	575	(56)	486	(53)	down
Black Male	693	(9)	171	(15)	155	(15)	117	(13)	
Hispanic Male	432	(6)	106	(9)	112	(11)	122	(13)	up
Other Male	240	(3)	63	(5)	68	(7)	73	(8)	up
Female	*460*	*(6)*	*146*	*(13)*	*120*	*(12)*	*115*	*(13)*	
White Female	232	(3)	47	(4)	28	(3)	36	(3)	
Black Female	161	(2)	73	(6)	71	(7)	64	(7)	
Hispanic Female	26	(0)	14	(1)	10	(1)	5	(1)	
Other Female	41	(1)	14	(1)	11	(1)	10	(1)	
Race/Ethnicity[5]									
White	6,079	(79)	725	(62)	603	(59)	522	(57)	
Black	854	(11)	242	(21)	226	(22)	181	(20)	
Hispanic	458	(6)	120	(10)	122	(12)	127	(14)	up
Asian & Pacific Islander	132	(2)	40	(3)	38	(4)	59	(6)	up
Native American or Alaskan Native	111	(1)	18	(2)	16	(2)	6	(1)	
Multiple Race	35	(0)	17	(1)	21	(2)	13	(1)	
Unknown Race	3	(0)	2	(0)	4	(0)	5	(1)	
Place of Birth									
Born in U.S. or Territories	6,959	(91)	905	(78)	768	(75)	637	(70)	down
Born outside U.S.	519	(7)	229	(20)	226	(22)	227	(25)	up
Birthplace unknow n	194	(3)	30	(3)	36	(3)	49	(5)	
Age at diagnosis of HIV									
0-19 years	141	(2)	16	(1)	9	(1)	17	(2)	
20-29 years	2,089	(27)	257	(22)	217	(21)	248	(27)	up
30-39 years	3,414	(44)	533	(46)	425	(41)	308	(34)	down
40-49 years	1,522	(20)	273	(23)	287	(28)	222	(24)	
50-59 years	408	(5)	73	(6)	77	(7)	86	(9)	up
60+ years	98	(1)	12	(1)	15	(1)	32	(4)	up
Residence									
Seattle residence	6,630	(86)	924	(79)	768	(75)	671	(73)	down
King County residence outside Seattle	1,042	(14)	240	(21)	262	(25)	242	(27)	up

1. Due to delays in reporting, data from recent years are incomplete.
2. Chi-square statistical trends ($p < .05$) were calculated for cases with known characteristics for the periods 2000-2002, 2003-05, and 2006-08.
3. Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
4. Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.
5. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, and Pacific Islanders were grouped due to small cell sizes.

Table 9: Demographic characteristics of Washington State residents diagnosed 1982-2008 and reported through 12/31/2008, by date of HIV diagnosis

	1981-1999		2000-2002		2003-2005		2006-2008[1]		Trend[2]
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	2000-2008
TOTAL	**11,280**	**(100)**	**1,852**	**(100)**	**1,712**	**(100)**	**1,765**	**(100)**	
HIV Exposure Category									
Men who have sex with men (MSM)	8,023	(68)	1,047	(57)	949	(56)	967	(55)	up
Injection drug user (IDU)	1,048	(9)	201	(11)	139	(9)	117	(7)	down
MSM-IDU	1,217	(10)	136	(7)	127	(7)	139	(8)	
Heterosexual contact[3]	824	(7)	305	(17)	279	(16)	240	(14)	
Blood product exposure	224	(2)	11	(1)	7	(0)	6	(0)	
Perinatal exposure	57	(0)	3	(0)	2	(0)	4	(0)	
SUBTOTAL- known risk	*11,393*		*1,703*		*1,555*		*1,473*		
Undetermined/other[4]	463	(4)	130	(7)	157	(9)	292	(17)	
Sex & Race/Ethnicity									
Male	*10,793*	*(91)*	*1,547*	*(84)*	*1,441*	*(85)*	*1,363*	*(84)*	
White Male[5]	8,786	(74)	1,050	(57)	961	(56)	861	(53)	down
Black Male[5]	958	(8)	234	(12)	21	(13)	190	(12)	
Hispanic Male	682	(6)	168	(9)	167	(10)	205	(13)	up
Other Male[5]	367	(3)	95	(5)	97	(6)	107	(7)	
Female	*1,063*	*(9)*	*286*	*(16)*	*263*	*(15)*	*262*	*(16)*	
White Female[5]	620	(5)	124	(7)	99	(6)	111	(7)	
Black Female[5]	268	(2)	103	(6)	101	(6)	101	(6)	
Hispanic Female	86	(1)	28	(2)	32	(2)	31	(2)	
Other Female[5]	89	(1)	31	(2)	31	(2)	19	(1)	
Race/Ethnicity									
White[5]	9,406	(79)	1,174	(64)	1,060	(62)	972	(60)	down
Black[5]	1,226	(10)	337	(18)	317	(19)	291	(18)	
Hispanic	768	(6)	196	(11)	199	(12)	236	(15)	up
Asian & Pacific Islander[5]	202	(2)	65	(4)	63	(4)	80	(5)	up
Native American or Alaskan Native[5]	199	(2)	36	(2)	39	(2)	21	(1)	
Multiple Race[5]	40	(0)	18	(1)	22	(1)	19	(1)	
Unknown Race[5]	15	(0)	7	(0)	4	(0)	6	(0)	
Place of Birth									
Born in U.S. or Territories	10,764	(91)	1,450	(79)	1,332	(78)	1,159	(71)	down
Born Outside U.S.	802	(7)	311	(17)	321	(19)	331	(20)	up
Birthplace Unknown	290	(2)	72	(4)	51	(3)	135	(8)	
Age at diagnosis of HIV									
0-19 Years	280	(2)	30	(2)	19	(1)	46	(3)	
20-29 Years	3,330	(28)	392	(21)	375	(22)	424	(26)	up
30-39 Years	5,071	(43)	793	(43)	626	(37)	505	(31)	down
40-49 Years	2,325	(20)	450	(25)	489	(29)	408	(25)	
50-59 Years	652	(5)	131	(7)	158	(9)	178	(11)	up
60+ Years	198	(2)	37	(2)	37	(2)	64	(4)	up
Residence[6]									
Region 1- Spokane area	607	(5)	106	(6)	94	(6)	98	(6)	
Region 2- Yakima area	384	(3)	70	(4)	72	(4)	81	(5)	
Region 3- Everett area	966	(8)	132	(7)	165	(10)	156	(10)	up
Region 4- Seattle area	7,672	(65)	1,164	(64)	1,030	(60)	913	(56)	down
Region 5- Tacoma area	1,256	(11)	200	(11)	187	(11)	207	(13)	
Region 6- Olympia area	971	(8)	161	(9)	156	(9)	170	(10)	

1. Due to delays in reporting, data from recent years are incomplete.
2. Chi-square statistical trends ($p < .05$) were calculated for cases with known characteristics for the periods 2000-2002, 2003-05, and 2006-08.
3. Includes presumed heterosexual cases (females who deny injection drug use but have sex with men not known to be HIV-infected).
4. Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), patients still under investigation, patients whose only risk was heterosexual contact and where the risk of the sexual partner (s) was (were) undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.
5. All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, and Pacific Islanders were grouped due to small cell sizes.
6. The counties and regions are: Region 1- Adams, Asotin, Columbia, Ferry, Garfield, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman; Region 2- Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima; Region 3- Island, San Juan, Skagit, Snohomish, and Whatcom; Region 4- King; Region 5- Kitsap and Pierce; Region 6- Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum.

Results from the National HIV/AIDS Behavioral Survey of persons at high risk for heterosexually transmitted HIV in the Seattle area, 2007

In 2006, an estimated 11,584 HIV/AIDS cases were classified as heterosexually transmitted, as reported to The U.S. Centers for Disease Control and Prevention (CDC) in the 33 states with name-based HIV reporting, constituting 32% of all reported cases.[1] The number of cases attributed to high risk heterosexual contact remained stable between 2003 and 2006. CDC defines heterosexually transmitted HIV as heterosexual contact with a person known to have HIV infection or be at high risk for HIV infection; that is, an injection drug user (IDU), a man who had sex with men (MSM) since 1977, or a transfusion or transplant recipient before 1985. Note that the CDC definition does not include heterosexual cases transmitted from persons not specifically known to be HIV-infected, IDU or MSM and so likely underestimates the full contribution of heterosexual transmission to the epidemic. In addition to cases included in the CDC definition, Washington State now includes females in the heterosexual exposure category who deny injection drug use but have sex with men not known to be HIV infected. Using the expanded categorization, an estimated 14% of the HIV/AIDS cases reported in King County between 1999 and 2007 were classified as being exposed by heterosexual contact.[2] There is no evidence for a change in this proportion over this time period.

We examined the demographic characteristics of heterosexually transmitted HIV/AIDS cases diagnosed in King County and reported from 2001 through 2006, including female cases with no reported risk behavior. Of these 220 cases, 117 (53%) were foreign born. Among the foreign born cases, 85 (73%) were Black and 23 (20%) were Hispanic. Of the Black foreign born cases 59 (69%) were female and of the Hispanic cases 8 (35%) were female. Among the 103 U.S. born cases, 52 (51%) were White, 38 (37%) Black and 5 (5%) Hispanic. Females predominated within each race of U.S. born cases: 56% among Whites, 68% among Blacks and 100% among Hispanics. Two zip codes in downtown Seattle had the highest rates of heterosexually transmitted cases, followed by zip codes encompassing areas of the Central District, Rainier Valley and Beacon Hill. Little is known about the distribution of education, income or other social and behavioral characteristics of local heterosexually transmitted HIV/AIDS cases in King County since these data are not collected on case reports.

The CDC-sponsored National Behavioral Surveillance (NHBS) system surveys characteristics and behaviors associated with HIV transmission among IDU, MSM and high risk heterosexuals in successive years.[3] In 2007, the Seattle area was one of 23 sites participating in the NHBS survey of persons at high risk for heterosexually transmitted HIV/AIDS (NHBS-HET1). We report here data on socio-demographic characteristics, risk and preventive behaviors, and HIV prevalence among participants in this survey.

Methods

The 2007 NHBS-HET1 survey was conducted through venue-day-time sampling, a systematic venue-based methodology. First, five census tracts were identified that were judged to be tracts with disproportionate numbers of persons at elevated risk of heterosexually transmitted HIV/AIDS. The selection was based on combining information on the zip codes with the highest rates of reported heterosexually transmitted HIV/AIDS cases with 2000 Census data of census tracts with the highest poverty rates. Over 400 venues for potential recruitment within these five census tracts were identified and from these a subset of 46 venues was chosen as appropriate and feasible. Recruitment venues included street locations, social service organizations, retail locations, and special events. Every month somewhere between 14 and 18 venues were randomly selected, which created a monthly sampling and recruitment calendar.

Following a standardized CDC protocol, persons who appeared eligible were systematically approached at the recruitment venues by study staff and invited to participate in the survey. Those who met the study eligibility requirements of being 18 to 50 years of age, having had sex with an opposite sex partner in the past 12 months and being able to complete the survey in English were invited to participate. After participants provided informed consent, study interviewers administered a standardized CDC questionnaire using a hand-held computer. No personal identifiers were collected. Those who consented to HIV testing were counseled about HIV transmission and prevention. We used rapid HIV testing and provided results at the end of the survey session.

Confirmatory testing was offered for those with reactive results on the rapid HIV test. Participants received a monetary incentive ($25 for the interview and an additional $25 for HIV testing) and information about HIV prevention services. For the purpose of this report we excluded from analysis participants who reported male-to-male sex or injection of illegal drugs in the 12 months previous to the interview.

Results

Socio-demographic characteristics

A total of 509 participants eligible for this analysis were recruited from March 6, 2007 through October 26, 2007. The NHBS-HET1 study population was younger than the population for King County as a whole, with 32% (vs. 17% for King County) between 18 and 24 years of age and 50% (vs. 33%) below 30 years old (see Table 1). The majority of the study population were Black (53% vs. 5% in King County), while Whites (19% in NHBS-HET1 vs. 76% in the County) and Asians (2% vs. 11% in King County) were represented at levels well below the corresponding figures for the county. A higher proportion of study participants reported multiple races (13%) than seen in the census data and among participants reporting multiple races, 63% reported Native American as one of the races, phenomena we have previously observed among Seattle area IDU.[4]

The NHBS-HET1 study population reported lower levels of education than census data indicated for King County as a whole, with 44% (vs. 71% for King County) reporting any post high school education. The disparity in household income levels was even more pronounced, with 39% reporting below $10,000/year in NHBS-HET1 (vs. 3% in King County). Indices of social marginalization were substantial in NHBS-HET1: 18% reported being unemployed, 14% currently homeless, 25% having been incarcerated in the previous year and 40% lacking health insurance. Ten percent of NHBS-HET1 participants reported ever having injected drugs (though not in the previous year) and 30% reported non-injection use of cocaine in the last 12 months. The pattern of census tract of residence of NHBS-HET1 participants is illustrated in Figure 2. The highest concentration of participants resided in the Central District, Capitol Hill and Downtown Seattle, with secondary concentrations in the Rainier Valley, Beacon Hill and scattered through south Seattle and south King County. Figure 3 represents the case reporting rates by census tract for gonorrhea among females in King County, based on cases reported from 2001 through 2005. There appears to be a broadly similar pattern of census tract of residence between the female gonorrhea cases and NHBS participants.

Sexual behavior

NHBS-HET1 participants reported substantially higher numbers of sexual partners than seen in two other sources of information (Table 2): the Knowledge, Attitudes and Behavior (KAB) survey of 2,050 Washington residents 18 and older in 2006 and the National Survey of Family Growth (NSFG), a national survey of sexual behavior among 12,571 persons 18 to 44 years of age in 2002.[5, 6] While 40% of NHBS-HET1 males and 32% of NHBS-HET1 females reported three or more sexual partners within the previous 12 months, the corresponding figures for NSFG were 10% for males and 7% for females. In the KAB survey 16% of single and 2% of married participants reported 2 or more partners.

All males in NHBS-HET1 reported heterosexual sexual orientation (after exclusion of 17 males reporting recent male-to-male sex from analysis). Among NHBS-HET1 females, 11% reported bisexual orientation. This figure was strikingly higher than seen in the females in NSFG (3%), KAB (4% homosexual or bisexual) and the Behavioral Risk Factor Surveillance System (BRFSS) survey (3% homosexual or bisexual), the latter a random digit dialed survey of Washington State residents.[6] We have consistently observed comparably high proportions of bisexual females in studies of Seattle area IDU,[4, 7] and this has been reported from IDU studies in other U.S. locations.

Overall, only 13% of NHBS-HET1 participants reported no unprotected anal or vaginal sex in the past year. Fifteen percent reported having had both vaginal and anal sex without a condom. Sexual behavior with NHBS-HET1 participants' last sexual partner was examined in more detail. Seventy-three percent of participants reported that their last partner was a main partner, 25% a casual partner and 2% an exchange partner (i.e. someone they had sex with in exchange for things like money and drugs). Females were more likely than males to report a main partner as their last sex partner. Knowledge of partner's HIV status was reported by 55% of participants. Participants reporting a main partner as their last sexual contact were more likely to know their partner's HIV status (65%) than those reporting a casual partner (31%) or an exchange partner (18%).

Condom use at last sexual contact was reported by 31% of participants (37% of males and 24% of females), figures that are comparable with those from the NSFG study (40% for males and 22% for females). Condom use at last sexual contact was more likely to be reported by participants reporting that their contact was with a casual partner (55%) than a main (23%) or exchange partner (30%).

Combining condom use with knowledge of a partner's HIV status and participants' self-report of their own HIV status, we constructed a high risk sex variable, defined as unprotected sex with a partner of opposite or unknown HIV status at last sexual contact. This was reported by 37% of participants. Drug use (illicit drugs either alone or in combination with alcohol) at last sexual contact was reported by 17% of participants.

Associations of high risk sexual behavior at last sexual contact were investigated in logistic regression analyses. These analyses were conducted in a series of models, each controlled for race, U.S. versus non-U.S. nativity, exchange sex, and cocaine use, which were all found to be independently associated with condom use ($p \leq .07$) (Table 3). All variables enumerated in Tables 1 and 2 were evaluated in these analyses, except condom use and knowledge of last sex partner's HIV status, which were components of the outcome variable. High risk sex was found to be reported more frequently by Hispanics (OR=2.74 with respect to Whites), Asians (OR=10.70) and participants who reported any exchange sex (OR=2.30) or cocaine use within the previous 12 months (OR=1.79). No other variable entered the models with a p-value less than 0.12. In particular, no association was found with the number of participant's sexual partners, the practice of anal sex or amphetamine use. Despite a strong tendency for participants whose last partner was a main partner to be less likely to report condom use ($p<.001$, data not shown), little difference existed in the likelihood of high risk sexual behavior by main partner versus casual partner. Evidently, the increased knowledge of main partner's HIV status compensated for the lower levels of condom use with main partners.

HIV prevalence

As confirmatory testing was not conducted on all participants with reactive rapid test results, we report the preliminary results. Five participants (1.1% of the total consenting to a test) tested HIV positive (Table 4). Two of the five HIV positive participants (40%) self-reported a previous positive test (Table 4), though interviewers were skeptical that one of the presumptive newly discovered positives was truly unaware of his/her HIV positive status. HIV prevalence levels were significantly higher among Native Americans than persons of other races (6.7%, $p=.03$), and there was suggestive evidence that prevalence was also higher among those who reported multiple races (3.3%, $p=.07$) and amphetamine users (5.5%, $p=.07$).

HIV testing

Eighty percent of participants reported ever having had an HIV test and 39% reported a test in the previous 12 months (Table 4). These figures indicate HIV testing levels substantially above those seen in the national NSFG data for testing in the last year (15% for males, 17% for females) and Washington State data from both the BRFSS study (12% for males, 10% females) and the KAB study (27%). [Note that in BRFSS, the time for HIV testing was not a uniform 12 months for all subjects and in KAB, HIV testing was fro 2005 or 2006 and thus often exceeded 12 months] NHBS-HET1 participants were asked an open-ended question eliciting where their last HIV test was performed. Responses were very specific and appeared credible. A wide variety of testing locations were named. Harborview Medical Center was the most frequently mentioned location, indicated by over 20% of the responses. Many different locations within Harborview were mentioned: the Public Health's STD Clinic, Emergency Department, Family Clinic, and Women's Clinic.

Characteristics associated with reporting an HIV test within the previous 12 months were evaluated in logistic regression models, controlling for the variables found to be significant. Income, insurance status, incarceration, binge drinking and high risk sex with last sex partner were all independently associated with having a recent HIV test. None of the additional variables enumerated in Tables 1 and 2 entered a model containing these variables with a p-value less than 0.19. HIV testing showed a bimodal relation with income levels, with participants at the lowest and third categories (of 4 categories) being most likely to report a test. The small number of participants enrolled in Medicaid, along with those reporting incarceration,

reported higher testing levels than others. Participants reporting frequent binge drinking (but not any measure of drug use) were less likely to report a recent HIV test, as were those reporting high risk sexual behavior at last sexual contact.

Comments

The risk behaviors we report among the NHBS-HET1 study population constitute a status report for this population and provide a baseline with which to evaluate information collected on future trends and HIV intervention efforts. We noted that NHBS-HET1 participants reported substantially higher sexual risks both in terms of numbers of sexual partners and high risk sex at last sexual contact relative to other surveys of King County residents. The level of drug use, particularly non-injected cocaine use, was substantial. While HIV prevalence was close to 1% in the NHBS-HET1 population, the potential exists for increases in HIV prevalence in this population.

On the other hand, 55% of NHBS-HET1 participants reported knowing the HIV status of their last sex partner and 39% reported an HIV test within the previous 12 months. The weak associations of most socio-demographic variables in the logistic regression analysis argue that HIV testing was widespread within the population surveyed and not narrowly restricted to certain subpopulations. The wide variety of locations at which participants reported receiving their last HIV test further strengthens the impression of widespread acceptance of HIV testing among the study population. These findings also indicate good access to HIV testing, especially considering that 40% had no health insurance.

The extent to which the 2007 Seattle area NHBS-HET1 population truly represents a population at elevated risk for heterosexually transmitted HIV remains something of an open question. The study population was characterized by low levels of education and income, disproportionately Black race, and high levels of indices of social marginalization. The geographic pattern of their census tracts of residence bore a similarity to that seen for gonorrhea case rates in King County. Published reports suggest that Black race, low income and low education are associated with elevated risk for heterosexually transmitted HIV.[8-10] However, these reports were based on data disproportionately derived from southern states, where heterosexually transmitted HIV is more common. In King County the majority of HIV/AIDS cases have been attributed to male-male sex, and it remains unclear whether these socio-economic measures accurately characterize persons at risk for heterosexually transmitted HIV here.

The Medical Monitoring Project (MMP) interviews persons diagnosed with HIV to get a better understanding of their socio-demographics, drug use and sexual behaviors, among other characteristics. More detailed information than is currently available on the characteristics of persons diagnosed with heterosexually transmitted HIV in the Seattle area will be available through the MMP and will provide information on how representative the NHBS-HET1 population is of persons who acquired HIV through heterosexual transmission in King County and help guide recruitment in future NHBS heterosexual surveys.

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

We would like to acknowledge the following interviewers who recruited and interviewed the participants: Donna Bland, Stefanie Fox, Chuckie Gooding, Shira Hasson-Schiff, Lindsay Jenkins, Anna Kashner, Elizabeth Mack, Martin Ndegwa, Patricia Phillips, and Laramie Smith.

Table 1: Socio-demographic characteristics and drug use behaviors of participants in the Seattle area 2007 NHBS-HET1 survey

	2007 NHBS Het Population		King County 2000 Census
	N	%	%
Total	**509**		
Age in Years			*(Oldest age category below is 45 – 49)*
18 – 24	164	32%	17%
25 – 29	91	18%	16%
30 – 34	52	10%	17%
35 – 39	63	12%	17%
40 – 44	73	14%	17%
45 – 50	66	13%	15%
Median Age	29		
Race/Ethnicity			*(Data below are for people 18 years and above)*
White	99	19%	76%
Black	270	53%	5%
Hispanic	38	8%	5%
Native American	16	3%	1%
Asian/Pacific Islander	10	2%	11%
Other Race	11	2%	0.2%
Multiple Races	65	13%	3%
Gender			
Male	251	49%	51%
Female	258	51%	49%
Foreign Born	51	10%	15%
African born	26	5%	1%
Latin American born	7	1%	2%
Education			*(Of those 25 years or older)*
Post High School	225	44%	71%
High School graduate	187	37%	19%
< High School graduate	97	19%	10%
Yearly Income			
< $5,000	105	21%	} 3%* *(*Family income below $10,000)*
$5,000 - $9,999	91	18%	
$10,000 - $19,999	128	25%	5%
$20,000 +	178	35%	91%
Employment status			
Full time	156	31%	
Part time	95	19%	
Unemployed	93	18%	4.5%
Other	161	32%	
Insurance Status			
None	198	40%	
Private insurance	282	57%	
Medicaid	11	2%	
Homeless, currently	73	14%	
Incarcerated, last 12 months	128	25%	
Ever injected	53	10%	
Non-injected drug use, 12 months			
Amphetamines	19	4%	
Cocaine	151	30%	
Ecstasy	68	13%	
Binged on alcohol ≥ 4 times/mo.	136	27%	

Table 2: Sexual behavior of participants in the Seattle area 2007 NHBS-HET1 survey

	Males		Females		Total	
N	**251**		**258**		**509**	
Sexual Partners, 12 months	**N**	**%**	**N**	**%**	**N**	**%**
1	94	38%	114	44%	208	41%
2	59	24%	60	23%	119	23%
3—6	69	28%	60	23%	129	25%
7+	29	12%	24	9%	53	10%
Median	2		2		2	
Sexual Orientation						
Heterosexual	251	100%	225	88%	476	94%
Homosexual	0		2	1%	2	0.4%
Bisexual	0		28	11%	28	5%
Other	0		2	1%	2	0.40%
Ever male-to-male sex	9	4%				
Any exchange sex, 12 months	19	8%	21	8%	40	8%
No unprotected anal or vaginal sex	45	18%	20	8%	65	13%
Partner at last sexual contact						
Heterosexual main	173	69%	197	77%	370	73%
Heterosexual casual	73	29%	54	21%	127	25%
Heterosexual exchange	5	2%	6	2%	11	2%
Knew HIV status of last sex partner						
Overall	142	57%	137	54%	279	55%
Heterosexual main	118	68%	120	62%	238	65%
Heterosexual casual	24	33%	15	28%	39	31%
Heterosexual exchange	0		2	33%	2	18%
Condom use at last sexual contact						
Overall	91	37%	61	24%	152	31%
Heterosexual main	48	28%	34	18%	82	23%
Heterosexual casual	42	59%	25	48%	67	55%
Heterosexual exchange	1	25%	2	33%	3	30%
Unprotected sex with partner of opposite or unknown HIV status at last sexual contact						
Overall	82	33%	101	41%	183	37%
Heterosexual main	57	33%	77	40%	134	37%
Heterosexual casual	22	31%	20	39%	42	34%
Heterosexual exchange	3	75%	3	50%	6	60%
Drug use at last sexual contact						
Overall	49	20%	35	14%	84	17%
Heterosexual main	23	13%	20	10%	43	12%
Heterosexual casual	33	30%	12	22%	34	27%
Heterosexual exchange	4	80%	3	50%	7	64%

Table 3: Associations with high risk sex (unprotected sex with partner of opposite or unknown HIV status at last sexual contact) among participants in the Seattle area 2007 NHBS-HET1 survey: logistic regression analysis controlled for race, foreign birth, exchange sex and cocaine use

	N In Category	% High Risk Sex	OR	95% Confidence Interval	p-value
Total	449	36%			
Race					.02
White	97	32%	1.00		
Black	264	37%	1.27	(0.76 – 2.14)	
Hispanic	37	51%	2.74	(1.18 – 6.37)	
Native American	16	38%	1.20	(0.39 – 3.69)	
Asian	10	70%	10.70	(2.25 – 50.78)	
Other race	11	36%	1.76	(0.38 – 8.09)	
Multiple races	61	30%	0.91	(0.45 – 1.87)	
Foreign born					.07
No	447	37%	1.00		
Yes	49	33%	0.49	(0.22– 1.10)	
Any exchange sex, 12 months					
No	457	35%	1.00		.02
Yes	39	59%	2.30	(1.16 – 4.59)	
Any cocaine use, 12 months					
No	350	33%	1.00		.002
Yes	146	47%	1.79	(1.18 – 2.26)	

Figure 1: Census tracks targeted for the Seattle area 2007 NHBS-HET1 survey

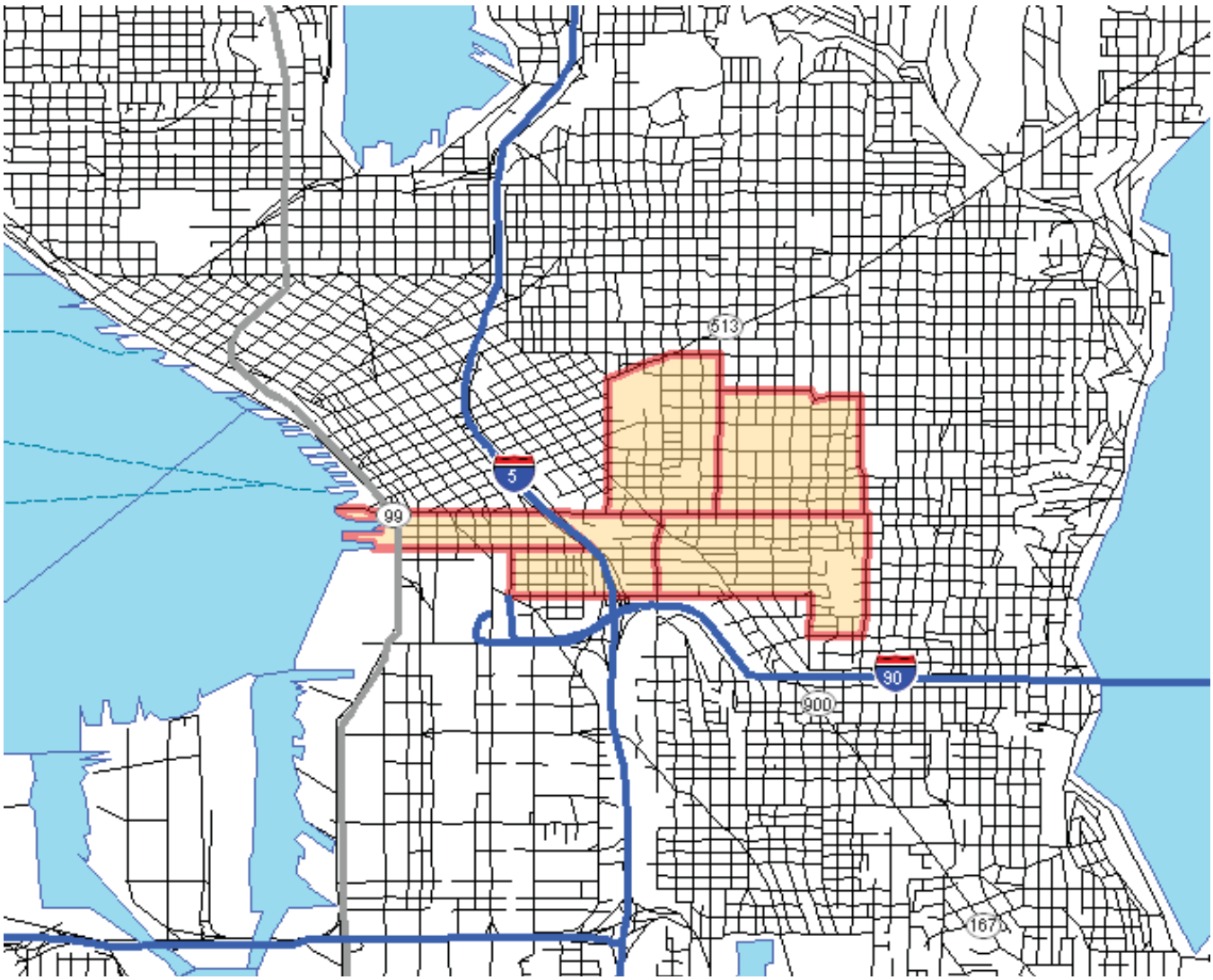


Figure 2: Census tracts of residence of participants in the Seattle area 2007 NHBS-HET1 survey

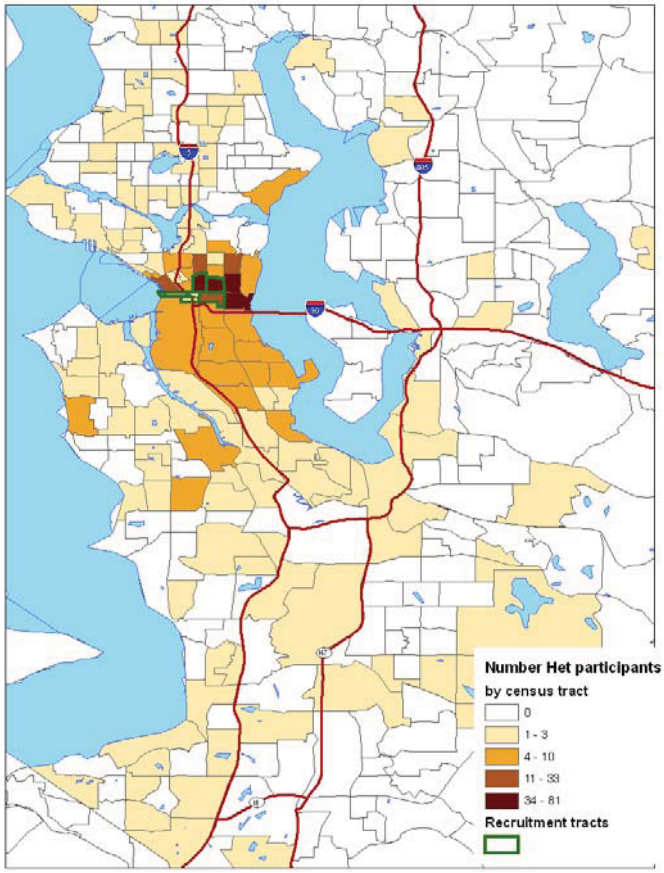
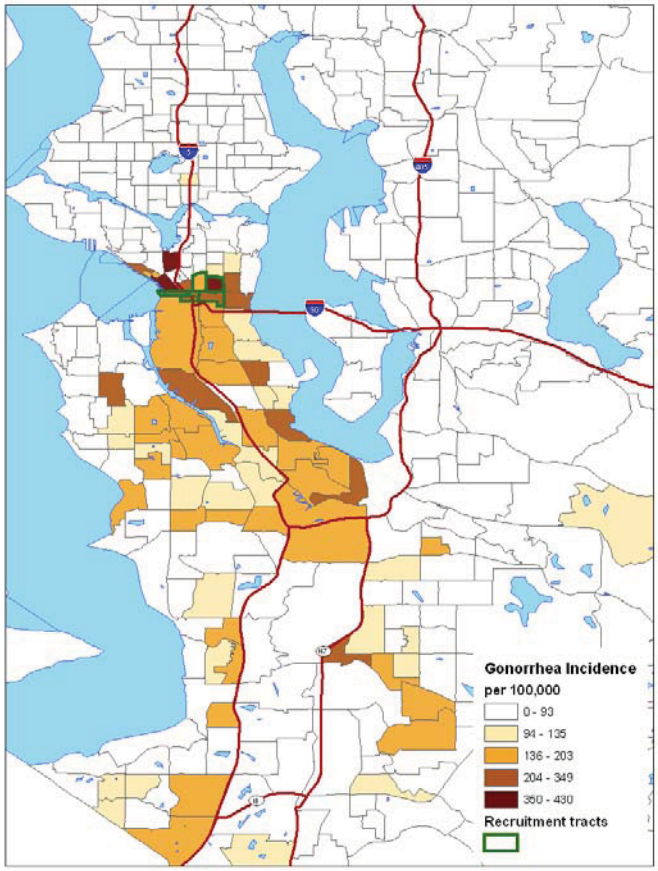


Figure 3: Female gonorrhea case report rates in King County 2001-2005, by census tract



1. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2006.Vol.18. *Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports*. 2008.
2. HIV/AIDS Epidemiology Unit. Public Health Seattle & King County and the Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. HIV/AIDS Epidemiology Report, 1st half 2008. *Available at: http://www.kingcounty.gov/healthservices/health/communicable/hiv/epi/%7e/media/health/publichealth/documents/hiv/1st_half_2008.ashx* 2008;**72**.
3. Gallagher K, Sullivan PS, Lansky A, Onorato I. Behavioral surveillance among people at risk for HIV infection in the U.S.: The National HIV Behavioral Surveillance System. *Public Health Rep.* 2007;**122**:32-8.
4. Burt RD,.Thiede H. Results from the National HIV/AIDS Survey of injection drug users in the Seattle area, 2005. *Washington State/Seattle-King County HIV/Aids Epidemiology Report, First half, 2007.Available at: http://www.metrokc.gov/health/apu/epi/1st-half-2007.pdf*. 2007;17-22.
5. Mosher WD, Chandra A, Jones J. Sexual behavior and selected health measures: men and women 15-44 years of age, United States, 2002. *Adv.Data* 2005;1-55.
6. Rime TE. HIV/AIDS-related knowledge, policy preferences and behaviors of the general public: Results form the 2006 Washington State Knowledge, Attitudes and Beliefs Survey. *Washington State/Seattle-King County HIV/Aids Epidemiology Report, First half, 2007.Available at: http://www.metrokc.gov/health/apu/epi/2nd-half-2006.pdf*. 2007;17-22.
7. Burt RD, Hagan H, Garfein RS, Sabin K, Weinbaum C, Thiede H. Trends in hepatitis B virus, hepatitis C virus, and human immunodeficiency virus prevalence, risk behaviors, and preventive measures among Seattle injection drug users aged 18-30 years, 1994-2004. *J.Urban.Health* 2007;**84**:436-54.
8. Centers for Disease Control and Prevention. Heterosexual transmission of HIV - 29 states, 1999-2002. *MMWR* 2004;**53**:125-9.
9. Espinoza L, Hall HI, Hardnett F, Selik RM, Ling Q, Lee LM. Characteristics of persons with heterosexually acquired HIV infection, United States 1999-2004. *Am J Public Health* 2007;**97**:144-9.
10. Adimora AA, Schoenbach VJ, Martinson FE, *et al*. Heterosexually transmitted HIV infection among African Americans in North Carolina. *J Acquir.Immune.Defic.Syndr.* 2006;**41**:616-23.

Table 4: HIV and health related characteristics among participants in the Seattle area 2007 NHBS-HET1 survey

	N	Percent	
Total	509		
HIV status			
Negative by serology[1]	462	98.9%	
Positive by serology	5[2]	1.1%	
Refused Testing	42	(8.3%)	
Self-reported HIV positive	2[3]	(40%)[4]	
HIV prevalence in subpopulations			**p-value**
Gender			
Male	3	1.3%	.60
Female	2	0.8%	
Race			
White	0		
Black	2	0.8%	.59
Hispanic	0		
Native American	1	6.7%	.03
Asian	0		
Other	0		
Multiple Races	2	3.3%	.07
Ever injected	1	1.9%	.53
Ever MSM	0		
Non-injected drug use			
Amphetamines	1	5.5%	.07
Cocaine	2	1.4%	.66
Ecstasy	0		
HIV testing			
Ever	406	80%	
Months since last HIV test			
0-3	72	14%	} =39%, 12 months
4-6	47	9%	
7-12	82	16%	
13-24	78	16%	
25-60	70	14%	
>60	49	10%	
Never tested	101	20%	
STD, 12 months	**48**	**9%**	
Self-reported hepatitis C positive	**15**	**3%**	
Hepatitis B vaccination	**185**	**42%**	
Hepatitis C test	**287**	**64%**	
Drug or alcohol treatment			
Ever	203	40%	
Previous 12 months	93	18%	

1. HIV test results are based on the preliminary HIV test. Of the 9 participants with reactive results in this test, 5 contributed specimens for confirmatory testing; all 5 were positive in the confirmatory test.
2. HIV status was determined on the basis of the results of a preliminary HIV test. Confirmatory testing was performed on 3 of the 5 participants positive on the preliminary test, all of whom were confirmed positive.
3. Study interviewers believe one HIV positive participant incorrectly self-reported HIV negative status because "At end of interview, respondent disclosed that he had appt at clinic that exclusively treats HIV+ patients".
4. 40% of participants determined to be HIV positive by serology self-reported being positive.

Table 5: Associations with having had an HIV test within the previous 12 months among participants in the Seattle area 2007 NHBS-HET1 survey, controlled for income, insurance status, incarceration, binge drinking and high risk sex with last sex partner

	N in Category	% HIV Test, 12 mo.	OR	95% Confidence Interval	p-value
Total	499	40%			
Yearly income					
< $5,000	102	47%	1.00		.001
$5,000 - $9,999	87	33%	0.45	(0.23 – 0.85)	
$10,000 - $19,999	125	47%	1.10	(.63 – 1.96)	
$20,000 +	177	34%	0.46	(0.27 -0.80)	
Insurance status					
None	196	37%	1.00		.02
Private insurance	276	42%	1.40	(0.91 – 2.14)	
Medicaid	11	73%	6.43	(1.54 – 26.81)	
Incarcerated, last 12 months					.01
No	372	38%	1.00		
Yes	125	49%	1.84	(1.15 – 2.95)	
Binged on alcohol ≥ 4 times/mo.					
No	365	43%	1.00		.03
Yes	132	34%	0.59	(0.37 – 0.94)	
Unprotected sex with partner of opposite or unknown HIV status at last sexual contact					
No	308	49%	1.00		<.001
Yes	177	25%	0.31	(0.20 – 0.48)	

HIV testing in the Washington State general adult population: findings from the 2007 Behavioral Risk Factor Surveillance System (BRFSS)

Since the beginning of the HIV epidemic, over 16,700 people have been diagnosed with HIV infection in Washington State, with approximately 560 new HIV diagnoses among Washington residents each year. As of December 31, 2008, there were 10,102 people living in Washington who were reported as having HIV or AIDS. However, the actual number living with HIV is estimated to be between 11,000 and 12,000. An estimated 10%-20% of individuals who are HIV positive in Washington do not know their status[1]. People who are infected with HIV, but are unaware of it are not able to take advantage of medical care that could reduce their risk for HIV-related illness and death. Furthermore, once aware they are HIV-infected, many people decrease behaviors that could transmit infection to sexual or needle-sharing partners.[2]

In April 2003, the CDC announced a refocused commitment to HIV prevention through the funding of the Advancing HIV Prevention (AHP) initiative[3]. This initiative emphasized increased HIV testing in medical and non-medical settings to identify infected people not aware of their infection, and to get them into treatment and prevention services. Then, in September 2006, the CDC released the "Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings". These new recommendations advised for routine HIV screening of all adults, adolescents, and pregnant women in health care settings in the United States[4]. The Washington State Department of Health and the State Board of Health are examining existing rules regarding HIV testing to make those rules more consistent with CDC recommendations for routine HIV testing in health care facilities. Revised rules are expected to be finalized by the end of 2009.

Estimates of HIV testing in the general population can provide a broad picture of testing in a variety of settings, among those at both high and low risk. Data from the Behavioral Risk Factor Surveillance System (BRFSS) have been used to describe prevalence and trends in HIV testing in the United States in order to evaluate the reach of HIV testing strategies and policies. The following report describes findings from the Washington State 2007 BRFSS HIV/AIDS-related data, including trends from previous BRFSS surveys.

Methods

The BRFSS is the largest annual telephone health survey in the world. It enables the Centers for Disease Control and Prevention (CDC), state health departments, and other health agencies to monitor health risk behaviors, clinical preventive health practices, and health care access. BRFSS consists of a core section facilitated by the CDC with questions asked in all states, as well as state-added sections for additional state-specific questions. The HIV/AIDS section is in the BRFSS core. The 2007 HIV/AIDS core section asks respondents ages 18-64 if they have ever been HIV tested (excluding blood donations), the date of their last HIV test, the facility where they were last tested, and, if tested within the last 12 months, if they had a rapid test. In this report, a person is considered to have tested "recently" if they tested in the survey year or one year previous (2006 or 2007 in the 2007 BRFSS).

The BRFSS sampling method in Washington is a disproportionate stratified sample. Adults (people aged 18 years or older) who live in households having a telephone are randomly selected for interviews. In 2007, 25,881 Washington State adults answered the BRFSS core; 17,864 were ages 18-64. Once collected, the data are weighted for probability of selection of telephone number, the number of adults in a household, and the number of telephones in a household. Post-stratification adjustments are also created for non-response and households without telephones. The BRFSS questionnaire is asked only in English and Spanish in Washington; adults not able to be interviewed in English or Spanish are not included in the sample. In addition, individuals without telephones are not contacted. As a result, BRFSS findings can only be generalized to English or Spanish-speaking adults living in households with telephones.

Findings reported from BRFSS include a 95% confidence interval (CI) with most findings to show where the true value of each measure would fall, with 95% certainty, if all Washington adult residents had been surveyed. Differences in two proportions were

statistically significant (at the .05 probability level) if the 95% confidence interval of one did not include the other.

Results

Table 1 displays the 2007 HIV testing in the general population by demographic and behavioral characteristics. Approximately 40% (CI=39-41) of adults ages 18-64 indicated they have ever been tested; 12% (CI=11-12) indicated testing recently. Overall, females were significantly more likely to indicate ever being tested (43%, CI 42-44), compared to males (37%, CI=35-38). Examining sex and age groups, females ages 18-24 had the highest proportion of recent testing. They were also significantly more likely than their male counterparts to have ever tested (37%, CI=32-42 and 21%, CI=16-26 respectively) and to have tested recently (24%, CI=20-29 and 15%, CI=11-19 respectively). Females ages 25-34 had the highest proportion reporting ever testing (62%, CI=59-65), significantly higher than males ages 25-34 (49%, CI=45-53). Females also had a higher proportion indicating recent testing when compared to their male counterparts (21%, CI=19-24 and 16%, CI=13-19 respectively). Females ages 35-44 were significantly more likely to report ever testing (59%, CI=57-62), when compared to males ages 35-44 (48%, CI=44-51). The percent of persons ages 35-44 reported testing recently (12%, CI=11-13) did not vary significantly by sex. In regard to residents ages 45-64, 29% (CI=25-32) reported ever HIV testing, 5% (CI=4-5) tested recently. These proportions also did not vary significantly by sex.

HIV testing results by race and ethnicity indicated that African-American and Native American or Alaskan Native residents were significantly more likely to report ever testing (58%, CI=49-65 and 53%, CI=44-61 respectively) when compared to Whites, Asian or Pacific Islanders and Hispanics. They were also more likely to indicate recent testing (29%, CI=22-37 and 22%, CI=15-30 respectively) when compared to other racial and ethnic groups. Whites and Asian or Pacific Islanders were least likely to indicate ever testing (39%, CI=38-40 and 34%, CI=28-40 respectively) as well as testing recently (10%, CI=9-10 and 10%, CI=7-15 respectively).

According to 2007 BRFSS data, HIV testing in Washington State did not vary greatly by region. Approximately 40% reported ever testing and just over 10% reported testing recently inside and outside of King County. Residents in AIDSNET Region 2 (Chelan, Douglas, Grant, Kittitas, Yakima, Benton, Franklin and Klickitat counties) had the lowest proportion reporting ever testing (33%, CI=30-36). Region 2 and Region 1 (Okanogan, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Adams, Whitman, Walla Walla, Columbia, Garfield, and Asotin counties) also had the lowest percent of residents indicating testing recently (10%, CI=8-12). AIDSNET Region 5 (Pierce and Kitsap counties) had the highest proportion indicating ever testing (45%, CI=42-48) and testing recently (15%, CI=13-18).

Rates of HIV testing were found to be significantly higher among groups that may be at higher risk for contracting HIV. Fifty-two percent (CI=47-56) of residents indicating that they were single with at least one sex partner the last 12 months reported ever being HIV tested; 26% (CI=22-30) indicated recent testing. Of all residents who indicated two or more sex partners the past 12 months, 54% (CI=48-61) reported ever testing and 33% (CI=27-40) tested recently. The proportions of single sexually active residents and those with two or more sex partners indicating recent testing have not changed significantly since 2001, when 24% (CI=20-28) and 33% (CI=26-40) respectively reported testing recently. BRFSS 2007 respondents were asked to say if any of a series of high risk factors applied to them (see list under Table 1). Out of those indicating at least one risk factor, 65% (CI=60-69) reported ever HIV testing and 31% (CI=27-35) tested recently. Beginning in 2003, Washington State added a sexual orientation question to BRFSS, asking respondents to classify their orientation as heterosexual, homosexual, bisexual or other. In 2003, men indicating that they were homosexual or bisexual reported ever HIV testing at a rate of 86% (CI=78-91), and 45% (CI=36-55) reported recent testing. In 2007 the proportions were down (not significantly) to 77% (CI=67-84) ever testing and 36% (CI=22-52) testing recently.

When first asked in the 1993 BRFSS if they were ever tested for HIV, approximately 31% (CI=28-33) of Washington State adults ages 18-64 said they had. This percentage increased significantly by 1995 to 44% (CI=42-46), and then to 49% (CI=47-51) by the year 2001. Figure 1 illustrates the trend in proportion ever tested 2001 through 2007, by gender. The overall rate decreased significantly to a low in 2006 of 37% (CI=36-38) and then increased to 40% (CI=39-41) by 2007. Females had consistently higher proportions reporting ever HIV testing when compared to males each year 2001 to 2007. Fifty-two percent (CI=49-54) of females reported ever testing in 2001, down significantly to 43% (CI=42-44) in 2007. Likewise, males reported ever testing at a rate of 46% (CI=43-49) in 2001, decreasing significantly

to 37% (CI=35-38) by 2007.

In 1995, 21% (CI=19-23) of Washington adult residents ages 18-64 indicated they were HIV tested recently. The proportion testing recently significantly decreased to 16% (CI=14-17) in the 2001 BRFSS. Figure 2 illustrates the trend in recent testing 2001-2007, by age. The overall rate decreased significantly to 10% (CI=9-11) by 2006, and then increased to 12% (CI=11-12) in 2007. Residents ages 18-34 had the largest decrease in recent testing, significantly dropping from 25% (CI=22-28) in 2001 to 19% (CI=17-21) in 2007. Ages 35-44 also decreased from 15% (CI=13-18) to 12% (CI=11-14) in 2007. Ages 45-64 had the lowest recent testing rates, dropping slightly from 7% (CI=5-8) in 2001 to 5% (CI=4-5) in 2007.

Table 2 displays the location of the last HIV test for Washington residents ages 18-64 tested within the past 12 months. The largest proportion reported testing at a private doctor or HMO (39%, CI=35-44). The other most common settings were at a clinic (28%, CI=24-33) or hospital (18%, CI=15-22). Females tested in the previous 12 months were significantly more likely than males to report testing at a private doctor or HMO (52%, CI=47-58 compared to 27%, CI=22-32 respectively). Males were significantly more likely to have had their last test in a hospital (24%, CI=19-30), when compared to female residents (12%, CI=9-16). Whether or not the person being tested had health insurance was also significantly associated with where they were tested. Forty-three percent (CI=39-48) of residents with health insurance tested at a private doctor or HMO and 25% (CI=21-29) tested at a clinic. Conversely, 23% (15-33) of those without health insurance reported testing at a private doctor or HMO; 44% (33-55) tested at a clinic.

A rapid HIV test -- where patients can receive results within an hour -- was approved by the Food and Drug Administration in November 2002. The CDC's Advancing HIV Prevention Initiative[3] makes rapid HIV tests available to health departments and community-based organizations for use in local HIV prevention to ensure that people testing would receive the results of their HIV tests as quickly as possible. Standard HIV test results can take up to a week, and patients do not always return for their results, nor do they always provide valid contact information so the health care facility can inform non-returning patients of positive test results. A question was added to the 2006 BRFSS HIV/AIDS core asking people who tested within the past 12 months if their last test was a rapid test. In 2006, 13% (CI=10-17) of residents tested in the previous 12 months indicated they had a rapid test. This finding did not change in 2007 (13%, CI=10-16). Table 2 also displays the proportion of respondents indicating rapid testing by location of last test. About 7% (CI=4-12) of residents testing within the past 12 months at a private doctor or HMO reported rapid testing. A higher proportion of those tested in a hospital (16%, CI=10-23) and clinic (19%, CI=13-28), indicated that their last test was a rapid test.

Conclusions

BRFSS findings from 18-64 year olds in Washington who have ever tested for HIV are highly similar to those found in the national 2007 BRFSS. Forty percent of the United States general population (ages 18-64) reported ever HIV testing; 37% of males and 43% of females. Nationwide, 14% reported testing recently compared to 12% in Washington State. Findings from the 2007 National Health Interview Survey (NHIS) also demonstrated similar proportions of United States residents ever HIV testing[5]. Both national survey results also mirrored Washington findings that, for age groups 18-24 years, 25-34 years, and 35-44 years, women were significantly more likely than men to have ever had an HIV test. One possible reason for this finding is that females ages 44 and under enter the health care system more often than males for reproductive health and family planning related services, where they are more likely to be tested for HIV. In 2002, Washington adopted an opt-out testing policy for pregnant women seeking prenatal care[6]. This opt-out policy states that an HIV test will be provided unless the pregnant woman refuses to give consent. This replaced an opt-in policy. Increased testing of pregnant women may contribute to higher HIV testing rates for women of reproductive ages. In regard to race and ethnicity, African-Americans were most likely to report ever having been tested for HIV. In 2007, the rate for African-Americans ages 18 and older was 58% (CI 49-65) in the Washington BRFSS; 60% in the national BRFSS; and 52% in the NHIS. African-Americans also had a higher rate of testing recently compared to other races or ethnicities; 31% in the national BRFSS and 29% (CI=22-37) in the Washington BRFSS.

The finding in Washington of a decreasing trend in adults ages 18-64 ever testing (49% in 2001 to 40% in 2007) was also found in the national BRFSS data (47% in 2001 to 40% in 2007). A similar decrease was found for those tested recently; 16% in 2001 to 12% in 2007 for Washington, and 18% in 2001 to 14% in 2007 in the national BRFSS. Conversely, the NHIS surveys, which include

adults of all ages (18 and over), show an increase in the proportion ever HIV tested in the United States from 33% in 2001 to 37% in 2007[5].

On a positive note, groups considered to be at higher risk for contracting HIV in Washington State (i.e. sexually active singles, people with two or more sex partners, and men having sex with men) have not had significant decreases in testing rates and continue to test at a much higher rate than the general population. Public Health officials recommend that Washington continue the CDC's 2006 initiative for a stronger commitment to routine HIV testing for all adults. Then, perhaps testing rates will increase in coming years, reducing the number of HIV infected persons who are not aware of their HIV infection. In Washington, already an increase has occurred in the percentage of 18-64 year olds who ever have tested for HIV and who have tested recently, reversing the trend of the past several years.

In the 2007 national BRFSS, 19% (CI=18-20) of adults ages 18-64 tested in the previous 12 months indicated that their last HIV test was a rapid test. The proportion was only 13% (CI=10-16) in Washington. Increased utilization of rapid testing is recommended so that those tested will be more likely to receive their test results and know their HIV status.

The BRFSS surveys rely on self-reported data and have certain limitations. Many times, respondents have the tendency to underreport some behaviors that may be considered socially unacceptable or unhealthy (like numerous sex partners). On the other hand, respondents may over report behaviors that are considered desirable (such as HIV testing). Some information is also affected by the ability of the respondent to recall past behaviors and respond accordingly. The validity of survey results depends on the accuracy of the responses to the survey questions from recalled past behaviors.

[1]Office of Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. Washington State HIV Surveillance Report: 1st Quarter 2008.

[2]Cleary PD, et al. Behavior changes after notification of HIV infection. Am J Pub Health 1991;81:1586--90.

[3]Janssen RS et al. Advancing HIV Prevention: New Strategies for a Changing Epidemic --- United States, 2003. MMWR 2003: April 18, 52 (15); 329-332.

[4]Branson BM et al. Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings. MMWR 2006: September 22, 55 (RR14); 1-17.

[5] Heyman KM et al. Early release of selected estimates based on data from the 2007 National Health Interview Survey. Hyattsville, MD: U.S. Department of Health and Human Services, CDC, National Center for Health Statistics; 2008.

[6]Counseling Standard – AIDS Counseling, Washington Administrative Code 246-100-208.

- *Contributed by Todd E. Rime, MA*

Table 1: Washington State adult residents who ever tested for HIV and who tested recently by selected characteristics, BRFSS 2007

		Ever HIV Tested		HIV Tested Recently (2006 or 2007)	
Sex & Age	**N-size**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Male 18-24	387	21%	(16-26)	15%	(11-19)
Female 18-24	493	37%	(32-42)	24%	(20-29)
Male 25-34	857	49%	(45-53)	16%	(13-19)
Female 25-34	1,633	62%	(59-65)	21%	(19-24)
Male 35-44	1,441	48%	(44-51)	13%	(11-15)
Female 35-44	2,426	59%	(57-62)	12%	(10-13)
Male 45-64	4,082	31%	(29-32)	6%	(5-7)
Female 45-64	6,545	27%	(26-29)	3%	(3-4)
Race-Ethnicity					
Hispanic	1,039	40%	(35-44)	15%	(12-18)
Black	252	58%	(49-65)	29%	(22-37)
Native American/AK Native	257	53%	(44-61)	22%	(15-30)
Asian/Pacific Islander	446	34%	(28-40)	10%	(7-15)
White	15,138	39%	(38-40)	10%	(9-10)
Region					
Outside King County	14,647	39%	(38-40)	12%	(11-13)
AIDSNET Region 4 (King)	3,217	41%	(39-44)	11%	(9-13)
AIDSNET Region 1*	2,818	36%	(33-39)	10%	(8-12)
AIDSNET Region 2*	2,212	33%	(30-36)	10%	(8-12)
AIDSNET Region 3*	3,398	41%	(39-43)	12%	(10-14)
AIDSNET Region 5*	2,124	45%	(42-48)	15%	(13-18)
AIDSNET Region 6*	4,095	38%	(36-40)	11%	(10-12)
HIV Risk Groups					
Single, sexually active	1,302	52%	(47-56)	26%	(22-30)
2+ partners past 12 months	440	54%	(48-61)	3%	(27-40)
High risk**	1,196	65%	(60-69)	31%	(27-35)
Homosexual/bisexual men	71	77%	(67-84)	36%	(22-52)
Overall Washington State	**17,864**	**40%**	**(39-41)**	**12%**	**(11-12)**

*AIDSNET Region counties: 1=Okanogan, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Adams, Whitman, Walla Walla, Columbia, Garfield, and Asotin; 2=Chelan, Douglas, Grant, Kittitas, Yakima, Benton, Franklin and Klickitat; 3= Snohomish, Skagit, Whatcom, San Juan, and Island; 5=Pierce and Kitsap; 6=Clallam, Jefferson, Grays Harbor, Mason, Thurston, Pacific, Lewis, Wahkiakum, Cowlitz, Clark, and Skamania

** High Risk is 'yes' to any of these: 1. You have hemophilia and have received clotting factor concentrate; 2. You have had sex with a man who has had sex with other men, even just one time; 3. You have taken street drugs by needle, even just one time; 4. You traded sex for money or drugs, even just one time; 5. You have tested positive for HIV; 6. You have had sex (even just one time) with someone who would answer "yes" to any of the above; 7. You had more than two sex partners in the past year

Figure 1: Washington State adult residents ages 18-64 who ever tested for HIV by sex, BRFSS 2001-2007 elected

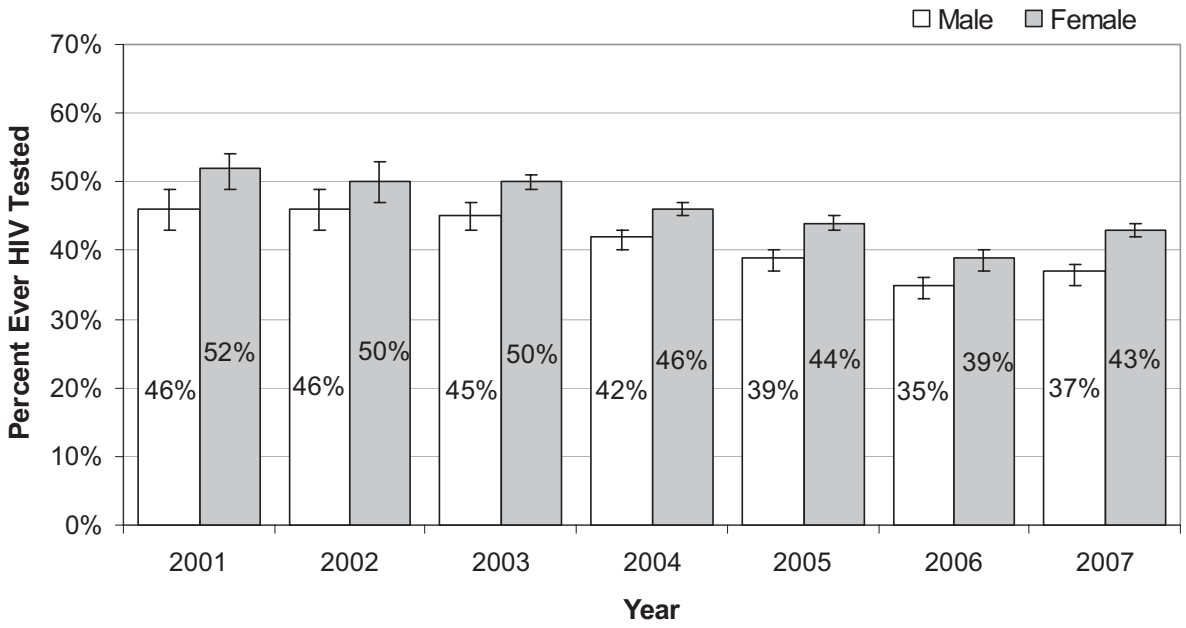


Figure 2: Washington State adult residents ages 18-64 who recently tested for HIV (in survey year or year previous) by age, BRFSS 2001-2007

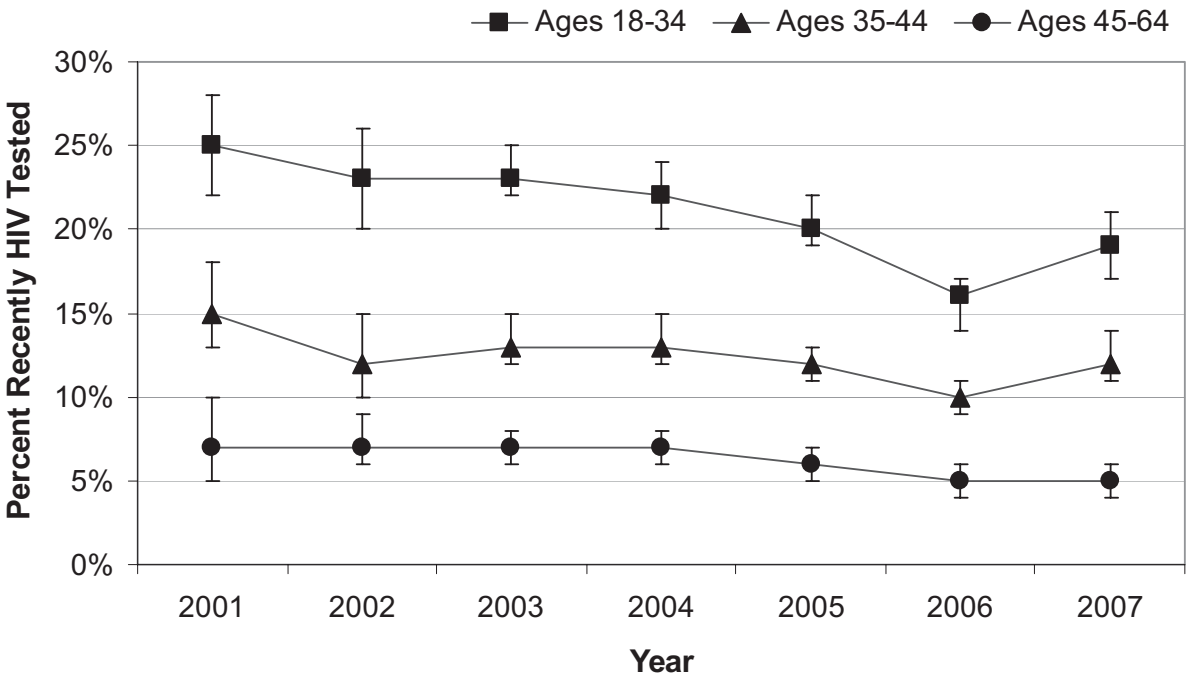


Table 2: Percent of Washington adults ages 18-64 who tested for HIV in the past 12 months by location of last HIV test with percent rapid tested, BRFSS 2007

Location of last HIV test	N size	Percent of those tested past 12 months		Percent Rapid Tested	
		Estimate	95% CI	Estimate	95% CI
Private doctor/HMO	459	39%	35-44	7%	4-12
Counseling & testing site	21	2%	1-4	24%	9-50
Hospital	173	18%	15-22	16%	10-23
Clinic	267	28%	24-33	19%	13-28
Jail/prison	6	1%	1-3	0%	-
Drug treatment facility	52	5%	4-8	12%	5-27
Other	58	5%	4-7	3%	1-13

Behavioral risk needs assessment of Black men who have sex with men: the STEAM survey results

Introductions

HIV prevalence and incidence rates are significantly higher for Black men who have sex with men (MSM) than for other racial/ethnic groups of MSM in the United States. A 2004/2005 study conducted in five large U.S. cities, found that HIV prevalence among Black MSM (46%) was more than twice that among White MSM (21%).[1] The Seattle HIV/AIDS Planning Council created a needs assessment in an effort to assess HIV risk behaviors among this population. Results from this assessment will be used to inform the Council's prevention prioritization process and to help guide development of targeted local prevention programs.

Methods

During the fall of 2008, throughout King County, Public Health-Seattle & King County recruited and interviewed 369 Black men who reported ever having sex with men. This assessment sought to reach both gay and non-gay-identified men. Participants were recruited from a variety of venues, including bars, parks, community organizations and HIV clinics. After completing the 25 minute interviewer-administered survey, men were paid $25 for their time.

Statistical methods

Statistical comparisons were made comparing subjects in three different dichotomies: MSM who did and did not also have sex with women; who did and did not use stimulants (including crack, cocaine and methamphetamines); and who were or were not gay-identified. Chi square p-values (Epi Info version 6.04d January 2001, Centers for Disease Control and Prevention, Atlanta, GA, USA) were calculated for various characteristics across these dichotomies and p-values <.05 were considered statistically significant.

Results

Demographics

The vast majority of men identified as male, with 4% identifying as transgender (Table 1). Most of the participants were born in the United States (94%). The participant age range was nearly an even split between under 40 years of age (53%) and over 40 (47%). Sixty percent of the participants lived in downtown, central or south Seattle (data not shown). Thirty-eight percent had a high school education or less, 42% had attended some college or had an Associate's degree, 20% had graduated from college or had more than a 4 year college degree. Over one-third of the participants reported an income of less than $10,000 last year and 41% worked full time. One-quarter of the participants reported having been homeless in the last 12 months. Fifteen percent of the participants had been incarcerated in the last 12 months.

Sexual identity and sexual behavior

Over one-third of the participants (37%) reported only ever having sex with men and 63% had sex with both men and women in their lifetime (Table 2). The majority of the men identified as gay (57%), 30% identified as bisexual, 7% straight and 6% as other. Nearly all (96%) of the men reported oral or anal sex with a man in the last 12 months and 77% reported anal sex with a man in the last 12 months. The median number of male sex partners in the last 12 months was three. Almost half of the men (48%) reported unprotected anal sex with at least one male partner in the last 12 months and 27% reported unprotected anal sex with two or more male partners in the last year. Forty-three percent reported sex with a male partner of unknown HIV status in the last 12 months.

Of the men who were incarcerated in jail or prison in the last 12 months, 25% engaged in oral sex and 18% engaged in anal sex while incarcerated.

Nearly two-thirds (63%) of the men reported that their last male sex partner was a casual partner, 72% reported anal sex at last sex and 35% reported no condom use during their last anal sex encounter (Table 2). Nearly one-third of participants (29%) did not know the HIV status of their last male sex partner. Forty-eight percent of respondents reported using drugs and/or alcohol at last sex with a man, the most common being alcohol. Among those reporting drug use, crack was by far the most frequently used drug (48%).

Just over one-third of the participants reported sex with a woman in the last 12 months (Table 2). Participants who had sex with a woman in the last 12 months reported a median of two female sex partners in the last 12 months. Sixty-two percent of the participants who had sex with a woman reported unprotected sex with a female partner in the last 12 months. Half of the participants (50%) had sex with a female of unknown HIV status in the last 12 months. One-third of the participants told their female sex partners that they also have sex with men.

When comparing men who reported sex with a woman in the last 12 months with those who did not, there were no differences in the number of male sex partners in the last 12 months between the two groups and no difference in the numbers of male partners with whom they did not use a condom (Table 3). Men who had sex with a woman were twice as likely to have sex with a male whose HIV status they did not know in the last 12 months. MSM who had sex with women were also more likely to have used crack or cocaine in the last 12 months and also more likely to have used drugs at last sex with a man. HIV testing rates in the last 12 months were not statistically significantly different between the two groups.

Health

Nearly all of the participants had tested for HIV (93%) and over half (52%) had tested in the last year, 38% had tested in the last six months and 21% had tested in the last three months (Table 4). About one quarter (26%) of the participants were HIV-infected. Over three-quarters of the participants reported that they had a regular health care provider (Table 5). Over one-quarter (28%) of the participants had been diagnosed with a mental health condition in their lifetime; of these, depression was the most common condition (89%). Eleven percent of the men had been diagnosed and/or treated for a STD in the last 12 months.

Comparing those participants who reported using any stimulants (cocaine, crack and/or methamphetamine) in the last 12 months with those who did not, we found stimulant-using participants were more likely to be 50 years or older and less likely to have completed an education beyond high school (Table 7). Stimulant users were less likely to identify as gay; more likely to have been homeless in the past 12 months; and more likely to have been incarcerated in the last 12 months. Stimulant users were also more likely to have had unprotected sex with both men and women in the last 12 months and have sex with an unknown HIV status male partner. In addition, stimulant users were less likely to report an HIV test in the last 12 months compared with non-stimulant users.

Sexual identity and differences in risk behavior

There were some interesting differences between men who identified as gay with those who identified as straight or bisexual (Table 8). Men who identified as gay were more likely to report an HIV test in the last 12 months. Gay-identified men were more likely to report three or more sex partners in the last 12 months, but there were no significant differences in condom use between gay-identified and non-gay-identified participants. Gay-identified participants were more likely to know the HIV status of their last sex partner. Non-gay-identified men were more likely to use stimulants in the last 12 months and were more likely to report using drugs or alcohol at last sex.

Discussion

Local Public Health recommends that MSM engaging in high risk behavior know their own and their sexual partners' HIV sero-status, use condoms and get tested for HIV every three months. Almost half of the participants had unprotected anal sex with a male partner in the last 12 months and nearly the same number had sex with an unknown HIV status male partner. Many of these participants were engaging in high risk sexual behavior, but only 21% had tested in the last three months.

In addition to having sex with men, over a third of the participants had also had sex with a woman in the last 12 months. Much of the sex with women was also unprotected and half of the participants had sex with a woman whose HIV status they did not know. Two-thirds of participants did not tell their female partners they were also having sex with men. Having sex with women did not seem to have any bearing on the number of male sex partners or whether they used a condom with their male sex partners.

The participants who reported using stimulants were more likely to engage in high risk sexual behavior such as having unprotected sex with both men and women or sex with an unknown status male partner and were less likely to have tested for HIV in the past 12 months.

Like other surveys, we did not find that non-gay-identified men engaged in higher risk sexual behavior across the board, but they were less likely to know the status of their last male sex partner.

Like other surveys, we did not find that non-gay-identified men engaged in higher risk sexual behavior across the board, but they were less likely to know the status of their last male sex partner.

To summarize, several focus areas may help reduce HIV incidence for Black MSM and their sexual partners. Prevention efforts should promote more frequent HIV testing, consistent condom use, and sero-status disclosure with both male and female partners. Black MSM who have sex with women should be encouraged to tell their female partners that they also have sex with men. In addition, prevention programs need to also focus on the issue of stimulant use and how it influences HIV risk behavior.

- *Submitted by Elizabeth Barash*

1. CDC. HIV prevalence, unrecognized infection, and HIV testing among men who have sex with men—five U.S. cities, June 2004–April 2005. MMWR 2005;54:597–601.

Table 1: Demographic characteristics of STEAM participants

	Overall (N=369)
Gender	
Male	355 (96%)
Transgender	13 (4%)
Country of birth	
U.S.	348 (94%)
Other	21 (6%)
Age	
18-24	51 (14%)
25-29	52 (14%)
30-39	92 (25%)
40-49	98 (27%)
≥ 50	74 (20%)
Missing	2 (1%)
Education	
Some HS or less	39 (11%)
HS graduate	100 (27%)
Some college/AA degree	155 (42%)
College graduate-4 year	51 (14%)
More than 4 year degree	22 (6%)
Income	
≤ $10,000	129 (35%)
$10,000-$20,000	70 (19%)
$20,000-$30,000	64 (17%)
≥$30,000	102 (28%)
Homeless last 12	
No	274 (74%)
Yes	92 (25%)
Missing	3 (1%)
Employment status	
Employed full-time	152 (41%)
Employed part-time	49 (13%)
Full-time student	12 (3%)
Retired	9 (2%)
Disabled	64 (18%)
Unemployed	64 (18%)
Other	19 (5%)
Incarcerated last 12 months	
Yes	55 (15%)
No	314 (85%)

Table 2: Sexual identity and sexual behavior among STEAM participants

Sexual identity	Overall (N=369)
Lifetime sex partners	
Men only	136 (37%)
Both men and women	231 (63%)
Sexual identity	
Straight	27 (7%)
Gay	209)57%)
Bisexual	111 (30%)
Other	22 (6%)
Number of male oral and anal sex partners last year	
0	15 (4%)
1	81 (22%)
2	79 (21%)
3-4	87 (24%)
>5	106 (29%)
Number of male anal sex partners last year (n=354)	
0	58 (16%)
1	101 (29%)
2	125 (35%)
3-4	66 (19%)
>5	4 (1%)
Number of male anal sex partners last year no condom (n=292)	
0	154 (53%)
1	61 (21%)
2-3	46 (16%)
>4	31 (11%)
Unprotected anal sex last year with male unknown status partner (n=138)	
Yes	59 (43%)
No	79 (57%)
Last sex with a male	
Last sex - partner type	
Main partner	130 (35%)
Casual partner	233 (63%)
Don't know	6 (2%)
Last sex - anal	
Yes	264 (72%)
No	102 (28%)
Refused/Don't know	3 (1%)
Last sex - know partner's HIV status?	
Yes	248 (67%)
No	107 (29%)
Missing/unknown	14 (4%)
Last anal sex - condom used (n=264)	
Yes	171 (65%)
No	93 (35%)

Table 2: (continued)

Last sex—drugs/alcohol	
Alcohol only	70 (19%)
Drugs only	34 (9%)
Both alcohol and drugs	71 (19%)
Neither	191 (52%)
Drugs used last sex (n=105)	
Crack	50 (48%)
Marijuana	35 (33%)
Meth	19 (18%)
Poppers	15 (14%)
Cocaine	11 (10%)
Ecstasy	5 (5%)
Heroin	4 (4%)
Sex while incarcerated (n=55)	
Oral	14 (25%)
Anal	10 (18%)

Sex with females	
Number of vaginal, oral and anal sex female partners last 12 months	Overall (N=369)
0	238 (65%)
1	49 (13%)
2-3	44 (12%)
>4	35 (9%)
Don't know	3 (<1%)
Number of vaginal and/or anal sex female partners last 12 months (n=128)	
0	8 (6%)
1	50 (39%)
2-3	41 (32%)
>4	29 (23%)
Number of vaginal or anal female sex partners last 12 months no condom (n=120)	
0	46 (38%)
1	38 (32%)
2-3	25 (21%)
>4	11 (9%)
Unprotected vaginal or anal sex last 12 months with female unknown status partner	
Yes	37 (50%)
No	33 (45%)
Don't know	4 (5%)
Tell female sex partner also had sex with men (n=128)	
Yes	42 (33%)
No	85 (66%)
Refused	1 (1%)

Table 3: Comparing STEAM participants who had sex with a woman with those who did not in the last 12 months

	Sex with women last 12 months (N=128)	No sex with women last 12 months (N=241)	p-value*
Sexual identity			
Gay	12 (9%)	197 (82%)	} NS
Straight	25 (20%)	2 (<1%)	
Bisexual	80 (63%)	31 (13%)	
Other	11 (9%)	11 (5%)	
Number of male anal sex partners last 12 months			
0	31 (24%)	45 (19%)	} NS
1	36 (28%0	65 (27%)	
2	21 (16%)	33 (14%)	
≥ 3	40 (31%)	98 (41%)	
Number of male unprotected anal sex partners			
0	78 (61%)	153 (63%)	} NS
1	20 (16%)	41 (17%)	
2	13 (10%)	14 (6%)	
≥ 3	17 (13%)	33 (14%)	
Unprotected sex with unknown status male partner			
Yes	31 (24%)	28 (12%)	
No	97 (76%)	213 (88%)	<.05
Stimulant use last 12 months			
Crack	57 (45%)	36 (15%)	<.05
Cocaine	32 (25%)	28 (12%)	<.05
Methamphetamine	15 (12%)	24 (10%	NS
Any stimulant	73 (57%)	55 (23%)	<.05
Used drugs last sex with man	59 (46%)	46 (19%)	<.05
HIV test last 12 months	51 (40%)	115 (48%)	NS

*p-values derived from chi-square comparing categories shown (when there is more than one row) or persons with and without the characteristic with a single row; NS indicates not statistically significant at p<.05

Table 4: HIV testing behavior among STEAM participants

Ever tested for HIV	**N=369**
Yes	345 (93%)
No	21 (6%)
Unknown	3 (1%)
HIV test last 12 months	
Yes	191 (52%)
No	178 (48%)
HIV test last 6 months	
Yes	141 (38%)
No	228 (62%)
HIV tested last 3 months	
Yes	78 (21%)
No	291 (79%)
Result of last HIV test	
Negative	248 (67%0
Positive	96 (26%)
Indeterminate	1 (<1%)
Don't know	24 (7%)

Table 5: Other health conditions among STEAM participants

Regular health care provider	**N=369**
Yes	283 (77%)
No	86 (23)
Diagnosed with mental health problem	
Yes	102 (28%)
No	267 (72%)
Specific mental health problem	**N=102**
Depression	91 (89%)
Anxiety	52 (51%)
Other mood disorder	37 (36%)
Psychosis	19 (19%)
Other	13 (13%)
Sexually transmitted infections last 12 months	
Syphilis	22 (6%)
Gonorrhea	21 (6%)
Chlamydia	15 (4%)

Table 6: Drug use among STEAM participants

	Overall N=369
Used any drugs last 12 months	
Yes	175 (47%)
No	194 (53%)
Ever inject drugs	
No	302 (82%)
Yes	66 (18%)
Injected in last 12 months	
No	345 (93%)
Yes	24 (7%)
Share needles last 12 months (n=24)	
Never	11 (46%)
Rarely	11 (46%)
About half the time	2 (8%)
Type of drugs used last 12 months (n=175)	
Marijuana	112 (64%)
Crack	93 (53%)
Cocaine	60 (34%)
Methamphetamine	39 (22%)
Poppers	33 (19%)
Ecstasy	26 (15%)
Heroin	12 (7%)
GHB	6 (3%)
Drink alcohol	
Yes	266 (72%)
Ex-drinker	63 (17%)
No	40 (11%)
Last 30 days how often ≥ 5 drinks in a sitting	
0	155 (42%)
1-2	57 (15%)
3-4	45 (12%)
≥ 5	68 (18%)
Don't know	4 (1%)

Table 7: Stimulant Users (cocaine, crack and/or methamphetamine) compared with non-stimulant users STEAM survey

	Stimulant use last 12 months (N=128)	No stimulant use last 12 months (N=241)	p-value*
Age			
<50	89 (70%)	207 (86%)	
≥50	39 (30%)	34 (14%)	<.05
Education			
Some HS or less	21 (16%)	18 (7%)	
HS graduate or higher	107 (84%)	221 (93%)	<.05
Sexual identity			
Gay-identified	49 (38%)	160 (66%)	
Non-gay-identified	79 (62%)	81 (34%)	<.05
Homeless last 12 months			
Yes	64 (50%)	28 (12%)	<.05
No	64 (50%)	210 (87%)	
Incarcerated last 12 months			
Yes	36 (28%)	19 (8%)	<.05
No	92 (72%)	221 (92%)	
Unprotected anal sex last 12 months with male partner	60 (47%)	79 (33%)	<.05
Sex with unknown status male partner last 12 months	34 (27%)	25 (10%)	<.05
Sex with female last 12 months	72 (56%)	55 (23%)	<.05
Unprotected anal or vaginal sex last 12 months female partner	48/72 (67%)	26/55 (47%)	<.05
Sex with unknown status female partner last 12 months	22/72 (31%)	11/55 (20%)	NS
Ever tested for HIV	119 (93%)	226 (94%)	NS
HIV test last 12 months	52 (41%)	139 (58%)	<.05

*NS—not statistically significant at p<.05

Table 8: Comparing risk behavior based on sexual identity among STEAM participants

	Gay-identified (N=209)	Non-gay-identified (N=138)	p-value
HIV test last 12 months	123 (59%)	57 (41%)	<.05
Number of male sex partners last 12 months			
0	6 (3%)	9 (7%)	
1	44 (21%)	30 (22%)	
2	35 (17%)	43 (31%)	
>3	124 (59%)	56 (41%)	<.05
Unprotected anal sex last 12 months	73 (35%)	54 (39%)	NS
Sex with unknown status male partner last 12 months	165 (79%)	75 (54%)	<.05
Stimulant use last 12 months	23%	50%	<.05
Used drugs or alcohol at last sex with male	76 (36%)	87 (63%)	<.05
Alcohol only at last sex	34 (16%)	31 (23%)	NS
Crack used at last sex	12 (6%)	36 (26%)	<.05

Brief updates from Public Health

How many men who have sex with men live in King County?

When public health epidemiologists calculate HIV incidence or prevalence rates we rely heavily on the U.S. census to provide denominator data. But what about risk groups, such as men who have sex with men (MSM) and injection drug users (IDU)? These characteristics are not part of the U.S. census. Sometimes behavioral surveys (such as the National BRFSS, Behavioral Risk Factor Surveillance System, see related article in this issue) capture information about injection drug use or men who have sex with men. However, these surveys don't use consistent definitions or methods. For example, behavioral surveys may capture men who identify as gay but miss men who identify as straight and still have sex with men. Or they may capture men who had sex with another man in the past year, but the period of interest for HIV risk extends beyond one year. A group of local public health experts met in December 2008 to review behavioral data and create an estimate of the number of MSM living in King County, as our previous estimate (32,000-53,000 with a midpoint of 42,500) was more than a decade old. We concluded that we currently believe there are 41,000 MSM living in King County (that's the midpoint of a plausible range of 37,000 to 45,000) including about 2,000 MSM-IDU (range 1500 - 2700). This is a very modest decrease from the previous estimate.

- *Contributed by Susan Buskin*

Testing and treatment history completeness campaign

The HIV Incidence Surveillance system requires collection of HIV testing and antiretroviral treatment history (TTH) data to produce HIV incidence estimates. We attempt to collect this information on all reported cases, including via medical record review when completing an HIV case report. To produce more robust incidence estimates, we are seeking TTH data from HIV cases reported in 2007 and 2008. Medical providers may be receiving phone calls or emails requesting TTH data, which includes:

(1) When, if ever, was the most recent negative HIV test?
(2) When is the first positive HIV test by self (patient) report)?
(3) How often did the patient test in the two years before they were diagnosed?
(4) Prior to testing positive for HIV, had the patient used any antiretrovirals, such as PEP, PrEP, or for treatment of hepatitis?

Our work has brought 2008 TTH completeness levels (any of the 4 questions above completed) from 70% to 89%.

- *Contributed by Christina Thibault*

Know your score: CD4 and viral load knowledge campaign

In January, 2009, the PH-S&KC HIV/AIDS Program Ryan White Part A Quality Management Program launched a consumer awareness campaign to encourage people with HIV to talk to their HIV care providers if they do not know their CD4 and viral load counts or if they do not understand what those lab values mean. The campaign is called "What's Your Score?" and includes posters, informational postcards, and buttons for providers to wear to reinforce the message and encourage conversations with clients. The design was developed by students in the Graphic Design Student Studio at the Art Institute of Seattle and vetted by consumers and providers at various King County HIV care agencies. "What's Your Score" is the first of four quarterly awareness campaigns planned for 2009. The remainder of 2009 campaigns will focus on improving system-wide performance around adherence, renewing EIP (Early Intervention Program) on time to avoid lapses in coverage for medical care and medications, and increasing the number of HIV-infected women who have annual pap smears. The topics for the campaigns were selected after reviewing results from recent PH-S&KC HIV/AIDS epidemiology surveys, lab data, clinic data, and the 2007 Planning Council Consumer Needs Assessment. If the evaluations of the 2009 campaigns indicate they are an effective system level intervention for improvement in the selected areas, we will target four new areas in 2010.

- *Contributed by Rebecca Hutcheson and Shonita Savage*


WHAT's YOUR SCORE?
CD4
500
0:00
Viral Load
<50
BONUS
Quarter
2
BONUS
Stay in the game. Talk to your provider.
Know your CD4 and Viral Load test results.

Northwest AIDS Education and Training Center (NWAETC) Update

The Northwest AIDS Education and Training Center (NWAETC) is part of a national network of AETCs funded by the Health Resources and Services Administration (HRSA) to provide HIV/AIDS education and training for health professionals and organizations in Washington, Alaska, Montana, Idaho, and Oregon (WAMIO region). The NWAETC also receives Minority AIDS Initiative (MAI) funding to target health professionals who serve minorities. We are one of eleven regional training centers in the United States. Situated within the School of Medicine at the University of Washington, we have a central office in Seattle, WA and ten Local Performance Sites (LPS) scattered throughout the WAMIO region. Our goal is to increase the capacity of our region's health professionals to provide high quality HIV/AIDS care and treatment. The NWAETC uses the following training technologies to deliver HIV/AIDS training and education:

1. Didactic lectures and seminars
2. Interactive workshops
3. Case-based presentations
4. Clinical preceptorships
5. E-mail, phone and on-site clinical consultations
6. Capacity-building
7. Web-based learning modules
8. Educational videos
9. Technical assistance regarding clinical systems of care

Our target audience includes physicians, nurses, nurse practitioners, physician assistants, dental professionals, clinical pharmacists, and other health care professionals in diverse practice settings. These include Ryan White HIV/AIDS Treatment Modernization Act-funded agencies, federally-funded community and migrant health centers, tribal health clinics, state and local health departments, correctional settings, and private practice settings, among others.

Washington State training programs are coordinated primarily by staff at four Local Performance Sites, including the WA State LPS, and African Americans Reach and Teach Health Ministry in Seattle, South Puget Intertribal Planning Agency in Shelton, and the Yakima Valley Farm Workers Clinic/Proyecto Cultivar in Yakima.

During 2008, multiple trainings in Washington took place in Spokane, Omak, Walla Walla, Kennewick, Yakima, Seattle, Bellingham, Olympia, Shelton, and Longview, covering much of the state and serving over 1,100 health care professionals.

The 2008 NWAETC statistics show that we provided 66 didactic and case-based trainings and 6 preceptorships to a variety of health professionals. We provided 44 clinical consultations (individual and group consultations) and technical assistance to 10 services sites. We hosted an annual nurses conference with 90 attendees, an HIV in Corrections conference with over 50 attendees, a routine HIV testing symposium for 70 providers, the South Puget Intertribal Planning Agency Medical Conference for over 70 tribal providers, and the Barriers Ethics Sensitivity Assessment Facts and Encounters (BE SAFE) cultural competency training for almost 100 health professionals. We hosted a symposium titled 'Implementing Routine HIV Testing in the Clinical Setting' with guest presenter, Dr. Bernard Branson, Centers for Disease Control and Prevention with over 70 local providers in attendance.

Under the leadership of David Spach, MD, Clinical Director, and Robert Carroll, PhD(c), ACRN, Program Director, we are happy to help with your training needs. Training is provided at limited to no cost to participants and we offer continuing education units for many of our courses (there is a small registration fee for the annual nurses' conference and accrediting body fees for continuing education). Please visit us at www.nwaetc.org for additional information.

- *Submitted by Mary Annese, Laurie Conratt, David P. Lee*

HIV-associated dementia: An Update from the AIDS Clinical Trials Unit (ACTU)

Potent antiretroviral therapy has dramatically improved morbidity and mortality in people infected with HIV. However, cognitive impairment continues to be a significant problem. This impairment can range from mild to severe, and mild impairment may lead to more severe problems, including HIV-associated dementia.

HIV-associated dementia is characterized by moderate to severe cognitive impairment that causes significant difficulty with day-to-day activities. Risks factors for HIV-associated dementia include high levels of HIV in the blood or cerebrospinal fluid (CSF), low CD4+ T cells, low educational level, advanced age, and anemia. In the current treatment era, the incidence of HIV-associated dementia has declined, but the prevalence is increasing, as people infected with HIV live longer. Potent treatment may delay the onset of dementia.

Preliminary findings from the "CHARTER (CNS HIV Antiretroviral Therapy Effects Research)" study, which is currently being conducted at the University of Washington AIDS Clinical Trials Unit (ACTU) and at other U.S. sites, confirm that cognitive impairment is still common in HIV-infected individuals treated with antiretroviral medications. These findings will be presented at the *2009 Conference of Retrovirals and Opportunistic Infections* February 8-11, 2009, in Montreal, Canada. "Comorbidities" such as head trauma, recreational drug use, and psychiatric disease increase the risk of cognitive abnormalities.

The etiology of HIV-associated dementia still is not fully understood. Several studies show that HIV proteins, particularly gp120 and Tat, are neuro-toxic. However, neurons are not infected. This finding suggests that factors other than direct infection by the HIV virus play a role in causing dementia. The most common pathological finding in HIV-associated dementia is an increase in brain macrophages and microglia. These cells make proinflammatory cytokines, which are small molecules that can impair the function of neurons and the brain cells that support them. Viral proteins and cytokines can also trigger apoptosis, or programmed cell death.

Antiretroviral medications are currently the only standard treatment for HIV-associated dementia, but not all patients have improvement or stabilization of cognitive abilities. Several studies have investigated whether adjuvant therapies might be beneficial for HIV-related cognitive impairment.

A promising study currently open at the ACTU is exploring the use of minocycline for HIV-related dementia. Minocycline is an antibiotic that has been used extensively to treat acne, rheumatoid arthritis, and many different types of infections. This antibiotic has both anti-inflammatory effects and a direct anti-HIV effect. Based on what we know about possible causes of HIV-associated dementia, minocycline may prove beneficial for HIV infected individuals with cognitive impairment. The study, called ACTG 5235, will randomize volunteers to receive minocycline or placebo for 24 weeks, followed by an open-label phase where all subjects may receive minocycline for an additional 24 weeks.

The University of Washington ACTU continues to conduct other studies as well to evaluate treatment strategies both for the initial therapy of HIV and rescue studies. We are also conducting studies in HIV+ people of two of the newest vaccines to prevent herpes zoster (shingles) and human papilloma virus (HPV) infection which is associated with cervical cancer. For more information visit our web site at www.uwactu.org or call us at (206) 744-3184.

- *Submitted by Shelia Dunaway, MD and Christina Marra, MD*

University of Washington AIDS Clinical Trials Unit
325 9th Avenue, 2-West Clinic; Box 359929
Seattle, WA 98104
(206) 731-3184 (voice); (206) 731-3483 (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.**

February 2009

Antiretroviral Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• Acquired HIV-1 infection within the past 6 months • HIV viral load at least 500 copies/ml • CD4 T cells at least 350 cells/mm^3 • No prior HIV treatment • No HIV progression to CDC category B or C disease • No history of pancreatitis	**(Study 5217)** To compare the safety and effectiveness of 36 weeks of treatment versus no treatment.	Screening, pre-entry, entry and weeks 1, 2, 4, and then every 4 weeks. Up to 96 weeks. Visits include physical exams, blood draws, and questionnaires Randomized (like flipping a coin) to either: **Group A**: Treatment with Emtricitabine/Tenofovir & lopinavir/ritonavir for 36 weeks (provided by study). After 36 weeks, participants will stop taking study medications. **or** **Group B**: No treatment (observation) At any time during the study, participants who are not on anti-HIV drugs may be encouraged to begin or restart based on symptoms or lab results.
Rescue Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**

• HIV infected people at least 16 years of age
• HIV viral load (HIV level) currently 1000 copies/mL or higher
• Currently on an HIV drug regimen that includes a protease inhibitor (PI)
• Have resistance to multiple types of HIV medications
• Had exposure to multiple types of HIV medications
	(Study 5241)
	To determine if adding nucleoside analogue reverse transcriptase inhibitors (NRTIs) to a novel antiretroviral regimen for volunteers who are triple-class antiretroviral-experienced or resistant is beneficial
	
	Two strategies will be evaluated: 1) including or not including NRTIs in a new regimen and 2) the use of continuous phenotype susceptibility (cPSS) score to help choose study regimens. The treatment response will then be observed.
	
	The study will make available several new drugs, including raltegravir, darunavir, tipranavir, etravirine, enfuvirtide and, if a subject has R5-tropic HIV, maraviroc
		<u>Part 1 – Continue current medications</u>
		• Genotype/phenotype/ tropism assays performed – these tests determine what HIV medications would be effective
		• A regimen is identified with a sum of at least 2 active mediations
		• Study clinician, primary health care provider, and volunteer select study regimen and NRTIs from among options identified
		<u>Part 2 - New Study Regimen</u>
		• Randomization if cPSS >2.0 (greater than 2 active HIV medications)
		  ○ Arm A: Study Regimen plus NRTIs for 48 weeks
		  ○ Arm B: Study Regimen **without** NRTIs for 48 weeks
		• Registration if cPSS ≤2.0 (Observational Arm)
		  ○ Arm C: Study Regimen plus NRTIs for 48 weeks
		  ○ Up to 100 subjects may be enrolled
		
		Screening, Part 2 pre-entry, Part 2 entry and then at weeks 1, 4, 8, 12, 16, 24, 36 and 48. Visits include physical exams and blood draws.

Complications of HIV and Other Conditions		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• HIV-positive men and women 18 to 65 years old with memory or thinking problems • Worsening mental function • On stable HIV regimen for at least 16 weeks that doesn't include atazanavir. • Not pregnant or breast feeding • Able to sit or stand for at least 2 hours • Willing to have two spinal taps	**(Study #5235)** Study will evaluate if minocycline is safe and effective for treatment of thinking problems in people infected with HIV.	Subjects are randomized at entry to minocycline or placebo. At the end of 24 weeks, may receive open-label minocycline for an additional 24 weeks. Minocycline provided by study. Anti-HIV treatment not provided. **Length of Study:** Step 1 – 24 weeks. Step 2 – 24 weeks (Optional Open Label).

HIV & Women's Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• HIV positive, female, age 13-45. • Any CD4 count and any viral load • On stable HIV medications, or not on any HIV medications, for at least 12 weeks before joining the study. • No history of cervical cancer, very abnormal Pap smear, or genital warts within 6 months • Have never received an HPV vaccine • Not pregnant or planning pregnancy, and willing to use birth control if needed. • Not breast feeding	**(Study #5240)** To see if the HPV vaccine is safe and effective in HIV-positive women and girls and to check if the HPV vaccine can help develop immunity to help fight off HPV infection.	**Medications while on study:** The HPV vaccine (Gardasil) will be provided to you by the study. **Length of Study:** 72 weeks. **Schedule of Study visits:** Screening, entry, and visits at 4, 8, 12, 24, 28, 52, and 72 weeks**.** **Reimbursement:** Exams, the HPV vaccine and lab tests are provided at no cost. You will receive $20-50* per visit, or up to $250 total if you complete all study visits.

Visit www.uwactu.org to find out about our latest studies and outreach programs and to meet our staff.

Key to Terms
3TC: lamivudine (Epivir)
ABC: abacavir (Ziagen)
ACTU: AIDS Clinical Trials Unit
APV: amprenavir (Agenerase)
AZT: zidovudine (Retrovir)
d4T: stavudine (Zerit)
EFV: efavirenz (Sustiva)
FTC: emtricitabine
HAART: highly active antiretroviral therapy
HCV: hepatitis C
LPV/r: lopinavir/ritonavir (Kaletra)
NFV: nelfinavir (Viracept)
NNRTI: non-nucleoside reverse transcriptase inhibitor
NRTI: nucleoside reverse transcriptase inhibitor
PI: protease inhibitor
RTV: ritonavir (Norvir)
TDF: tenofovir
UWMC: University of Washington Medical Center
> : greater than
< : less than
≥ : greater than or equal to
+ : positive

Research Helps - Help Research