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

Summary Tables and Figures

HIV/AIDS Epidemiology and Surveillance News

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Suggested Citation: *HIV/AIDS Epidemiology Unit, Public Health - Seattle & King County, and Infectious Diseases and Reproductive Health Assessment Unit, Washington State Department of Health. HIV/AIDS Epidemiology Report. Second half 2004_2nd.pdf.*

Credits

This sixty-fifth edition of the HIV/AIDS Epidemiology Report, in general, includes data through the end of 2004. The report is produced jointly by Public Health - Seattle & King County and the Washington State Infectious Disease and Reproductive Health Assessment Unit. It is funded in part by a Centers for Disease Control and Prevention cooperative agreement for HIV/AIDS surveillance. We wish to thank the health care providers caring for people with HIV/AIDS and the clinics and patients participating in epidemiologic studies. Their cooperation with the public health departments' HIV/AIDS control efforts provides the basis for the data presented in this report. We also wish to acknowledge the outstanding assistance of our staff. King County staff include Roxi Smith (who provided desktop publishing for this edition), Tom Davis, Amy Bauer, Laura Arnold, and Winnie Alston. Washington State staff include Mark Charonis, Anna Easton, Sandy Hitchcock, Anna Meddaugh, and Mary Roberts.

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HIV/AIDS Reporting Requirements

Washington health care providers are required to report all HIV infections, regardless of the date of the patient's initial diagnosis, to the local health department.

Local health department officials forward case reports to the State Department of Health, replacing the name of the patient with a standard code if the report indicates asymptomatic infection. As has been the case since 1984, AIDS and symptomatic HIV case reports are not subject to coding. Names are not sent to the Federal Government.

Laboratories are required to report evidence of HIV infection (i.e., western blot assays, p24 antigen detection, viral culture, nucleic acid detection [viral load]), and low CD4 counts (<200/µl or <14% of total lymphocytes). However, laboratory reporting does not relieve health care providers of their duty to report since most of the critical information necessary for surveillance and follow-up is not available to laboratories.

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

Technical notes for data through December 31st, 2004

In this edition of the HIV/AIDS Epidemiology Report, the total number of AIDS cases has barely changed from our previous report through June 30, 2004. This is a result of Washington State's participation in a national effort to de-duplicate national HIV/AIDS data.

AIDS cases have always been counted as belonging to the area where they were diagnosed with AIDS although this may not reflect where they currently reside and receive services. For example someone first diagnosed with AIDS in Washington would still be counted as a Washington case even after they moved to Oregon. If the Oregon health care provider and surveillance staff did not learn about the previous diagnosis in Washington, the case would be counted in both states, and artificially inflate the national case numbers.

For accurate tracking and allocation of resources, people with AIDS should be counted only once. To address this problem, the Centers for Disease Control and Prevention (CDC) initiated an interstate de-duplication project in 2002. CDC identified potential duplicates in the national database from the non-name information they receive. The states then worked closely together to identify which cases truly were duplicates and which were not. Washington State participated only in the AIDS case portion of the exercise because our HIV data are not yet included in the national database.

This project found that approximately 5% of cases nationally were duplicated in more than one state or area. Each duplicate was then assigned to the correct state of residence at AIDS diagnosis. In total, 1,063 Washington State duplicate AIDS cases were identified. 658 of these were retained with a Washington State AIDS diagnosis residence and 405 cases were re-assigned an Out of State diagnosis residence; consequently, 405 fewer cases appear on this surveillance report.

CDC and states are now working together to conduct de-duplication on an ongoing basis.

If you have any questions about the surveillance report or the de-duplication exercise, please contact Maria Courogen, Infectious Disease and Reproductive Health Assessment Unit, at (360) 236-3458.

Table 1: Surveillance of reported[1] HIV/AIDS cases, deaths, and persons living with HIV/AIDS by time of case report - King County, other Washington Counties, all Washington State, and U.S.

		Adult/Adolecent		Pediatric[2]	
		HIV	AIDS	HIV or AIDS	**Total**
King County	New cases reported in 2nd half 2004	157	114	0	271
	Cases reported year-to-date	302	252	1	555
	Cumulative Cases	2,561	7,021	32	9,614
	Cumulative Deaths	85	3,862	9	3,956
	Persons Living (prevalent cases)	2,476	3,159	23	**5,658**
Other Counties	New cases reported in 2nd half 2004	81	93	1	175
	Cases reported year-to-date	158	185	1	344
	Cumulative Cases	1,301	3,870	39	5,210
	Cumulative Deaths	71	2,016	12	2,099
	Persons Living (prevalent cases)	1,230	1,854	27	**3,111**
Washington State	New cases reported in 2nd half 2004	238	207	1	446
	Cases reported year-to-date	460	437	2	899
	Cumulative Cases	3,862	10,891	71	14,824
	Cumulative Deaths	156	5,878	21	6,055
	Persons Living (prevalent cases)	3,706	5,013	50	**8,769**
United States[3]	Estimates Cases as of 12/31/2003				
	Cumulative Cases	216,486	920,566	13,998	1,151,050
	Cumulative Deaths	1,913	518,567	6,916	527,396
	Persons Living (prevalent cases)	214,573	401,999	7,082	**623,654**

1. There are an estimated 11,000 to 13,000 persons living in Washington with HIV infection including AIDS. These include the 8,769 prevalent cases reported above. In King County, there are an estimated 7,200 to 8,400 persons living with HIV infection including AIDS. These include the 5,658 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 (possibly 25% of the total HIV estimate) 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 for persons with HIV infection not AIDS are based upon reports from states and areas with confidential, named-based HIV infection reporting. Washington is not included in those counts at this time.

Table 2: Cumulative HIV/AIDS case counts and deaths by resident County and AIDSNet region at diagnosis - reported as of 12/31/04 - Washington State

		Cumulative Cases	Deaths N	Deaths (%)[1]	Presumed Living HIV	Presumed Living AIDS	Presumed Living Total	Presumed Living (Total %)[2]
	Adams	6	1	(17)	1	4	5	(0.1)
	Asotin	18	7	(39)	4	7	11	(0.1)
	Columbia	5	3	(60)	1	1	2	(0.0)
	Ferry	7	6	(86)	0	1	1	(0.0)
	Garfield	1	0	(0)	1	0	1	(0.0)
	Lincoln	5	2	(40)	0	3	3	(0.0)
	Okanogan	33	9	(27)	7	17	24	(0.3)
	Pend Orielle	9	5	(56)	1	3	4	(0.0)
	Spokane	590	258	(44)	128	204	332	(3.8)
	Stevens	24	8	(33)	4	12	16	(0.2)
	Walla Walla	58	27	(47)	5	26	31	(0.4)
	Whitman	12	4	(33)	2	6	8	(0.1)
Region 1	**Subtotal**	**768**	**330**	**(43)**	**154**	**284**	**438**	**(5.0)**
	Benton	100	37	(37)	21	42	63	(0.7)
	Chelan	49	22	(45)	12	15	27	(0.3)
	Douglas	4	2	(50)	2	0	2	(0.0)
	Franklin	62	15	(24)	17	30	47	(0.5)
	Grant	40	20	(50)	8	12	20	(0.2)
	Kittitas	18	8	(44)	3	7	10	(0.1)
	Klickitat	13	5	(38)	4	4	8	(0.1)
	Yakima	206	75	(36)	49	82	131	(1.5)
Region 2	**Subtotal**	**492**	**184**	**(37)**	**116**	**192**	**308**	**(3.5)**
	Island	75	34	(45)	16	25	41	(0.5)
	San Juan	24	10	(42)	6	8	14	(0.2)
	Skagit	78	32	(41)	22	24	46	(0.5)
	Snohomish	791	303	(38)	196	292	488	(5.6)
	Whatcom	191	78	(41)	42	71	113	(1.3)
Region 3	**Subtotal**	**1,159**	**457**	**(39)**	**282**	**420**	**702**	**(8.0)**
Region 4	King	9,614	3,956	(41)	2,494	3,164	5,658	(64.5)
	Kitsap	268	109	(41)	71	88	159	(1.8)
	Pierce	1,317	553	(42)	336	428	764	(8.7)
Region 5	**Subtotal**	**1,585**	**662**	**(42)**	**407**	**516**	**923**	**(10.5)**
	Clallam	67	29	(43)	16	22	38	(0.4)
	Clark	530	201	(38)	131	198	329	(3.8)
	Cowlitz	122	50	(41)	32	40	72	(0.8)
	Grays Harbor	61	30	(49)	12	19	31	(0.4)
	Jefferson	29	17	(59)	5	7	12	(0.1)
	Lewis	49	26	(53)	8	15	23	(0.3)
	Mason	88	21	(24)	19	48	67	(0.8)
	Pacific	22	10	(45)	7	5	12	(0.1)
	Skamania	7	5	(71)	0	2	2	(0.0)
	Thurston	228	77	(34)	60	91	151	(1.7)
	Wahkiakum	3	0	(0)	1	2	3	(0.0)
Region 6	**Subtotal**	**1,206**	**466**	**(39)**	**291**	**449**	**740**	**(8.4)**
Total		**14,824**	**6,045**	**(41)**	**3,744**	**5,025**	**8,769**	**(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 persons presumed living with HIV/AIDS - King County, other Washington Counties, all Washington State, and U.S. - reported as of 12/31/04

	King County		Other Counties		All Washington		Estimated U.S. AIDS[1]	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Sex								
Male	5,119	(90)	2,499	(80)	7,618	(87)	315,147	(78)
Female	539	(10)	612	(20)	1,151	(13)	90,779	(22)
Age Group								
Under 13	25	(0)	30	(1)	55	(1)	3,927	(1)
13-19	115	(2)	89	(3)	204	(2)	N/A[a]	
20-29	1,680	(30)	951	(31)	2,631	(30)	N/A[a]	
30-39	2,495	(44)	1,193	(38)	3,688	(42)	N/A[a]	
40-49	1,073	(19)	636	(20)	1,709	(19)	N/A[a]	
50-59	235	(4)	169	(5)	404	(5)	N/A[a]	
60 and over	35	(1)	43	(1)	78	(1)	N/A[a]	
Unknown	0	(0)	30	(1)	30	(0)	N/A[a]	
Race/Ethnicity								
White, non Hispanic[2]	4,038	(71)	2,281	(73)	6,319	(72)	146,544	(36)
Black, non Hispanic[2]	876	(15)	346	(11)	1,222	(14)	172,278	(42)
Hispanic	487	(9)	305	(10)	792	(9)	80,263	(20)
Asian & Pacific Islander[2]	131	(2)	78	(3)	209	(2)	3,826	(1)
Asian [2,3]	*125*	*(2)*	*34*	*(1)*	*159*	*(2)*	*N/A*	
Native Hawaiian & Other PI [2,3]	*6*	*(0)*	*11*	*(0)*	*17*	*(0)*	*N/A*	
American Indian/ Alaska Native[2]	91	(2)	76	(2)	167	(2)	1,498	(0)
Multi Race[2,3]	22	(0)	1	(0)	23	(0)	N/A	
Unknown	13	(0)	24	(1)	37	(0)	1,517	(0)
HIV Exposure Category								
Male-male sex	3,963	(70)	1,500	(48)	5,463	(62)	182,989	(45)
Injection drug use (IDU)	367	(6)	487	(16)	854	(10)	98,901	(24)
IDU & male-male sex	497	(9)	259	(8)	756	(9)	24,334	(6)
Heterosexual contact	414	(7)	473	(15)	887	(10)	89,009	(22)
Blood product exposure	39	(1)	42	(1)	81	(1)	N/A	
Perinatal exposure	20	(0)	26	(1)	46	(1)	3,788	(1)
Undetermined/other[4]	358	(6)	324	(10)	682	(8)	6,905[b]	(2)
Total Cases	**5,658**	**(100)**	**3,111**	**(100)**	**8,769**	**(100)**	**405,926**	**(100)**

1. US AIDS data were reported as of 12/31/2003 and are the most recent statistics available. These include 401,999 adult and 3,927 pediatric AIDS cases. Estimates for the states and areas with confidential name-based HIV infection reporting were not readily available.
   a. Age related data for person's ages 13+ were grouped differently by CDC, and could not adequately be redistributed to agree with Washington State intervals.
   b. Includes hemophilia, blood transfusion, and risk not reported or not identified.
2. And not Hispanic. All race and ethnicity categories are mutually exclusive.
3. Revised federal Office of Management and Budget classifications for race split the old category of Asian & Pacific Islander into two (Asian versus Native Hawaiian and other Pacific Islander), and added Multiple Race. Some previously collected data could not be reassigned and are shown only in the old category.
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.

Table 4: Persons presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category - reported as of 12/31/04, King County

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Male												
Male-male sex	3,174	(79)	328	(37)	321	(66)	87	(66)	32	(35)	3,963	(70)
Injection drug use (IDU)	115	(3)	81	(9)	33	(7)	4	(3)	7	(8)	244	(4)
IDU & male-male sex	394	(10)	40	(5)	37	(8)	4	(3)	19	(21)	497	(9)
Heterosexual contact	42	(1)	96	(11)	14	(3)	5	(4)	2	(2)	160	(3)
Blood product exposure	18	(0)	2	(0)	2	(0)	1	(1)	0	(0)	23	(0)
Perinatal exposure	1	(0)	3	(0)	0	(0)	1	(1)	0	(0)	5	(0)
Undetermined/other	78	(2)	91	(10)	38	(8)	14	(11)	4	(4)	227	(4)
Male Subtotal	**3,822**	(95)	**641**	(73)	**445**	(91)	**116**	(89)	**64**	(70)	**5,119**	(90)
Female												
Injection drug use (IDU)	65	(2)	37	(4)	4	(1)	0	(0)	17	(19)	127	(2)
Heterosexual contact	108	(3)	104	(12)	23	(5)	7	(5)	8	(9)	250	(4)
Blood product exposure	4	(0)	10	(1)	1	(0)	1	(1)	0	(0)	16	(0)
Perinatal exposure	4	(0)	8	(1)	2	(0)	1	(1)	0	(0)	15	(0)
Undetermined/other	35	(1)	76	(9)	12	(2)	6	(5)	2	(2)	131	(2)
Female Subtotal	**216**	(5)	**235**	(27)	**42**	(9)	**15**	(11)	**27**	(30)	**539**	(10)
Total	**4,038**	**(71)**	**876**	**(15)**	**487**	**(9)**	**131**	**(2)**	**91**	**(2)**	**5,658**	**(100)**

Table 5: Persons presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category - reported as of 12/31/04, Washington State

	White[1]		Black[1]		Hispanic		Asian & PI[1,2]		Native Am/AN[1,3]		Total[4]	
HIV Exposure Category	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Male												
Male-male sex	4,387	(69)	425	(35)	444	(56)	121	(58)	54	(32)	5,463	(62)
Injection drug use (IDU)	350	(6)	124	(10)	62	(8)	7	(3)	15	(9)	563	(6)
IDU & male-male sex	602	(10)	58	(5)	56	(7)	7	(3)	28	(17)	756	(9)
Heterosexual contact	117	(2)	137	(11)	39	(5)	9	(4)	6	(4)	310	(4)
Blood product exposure	46	(1)	2	(0)	6	(1)	1	(0)	0	(0)	56	(1)
Perinatal exposure	7	(0)	7	(1)	2	(0)	2	(1)	1	(1)	19	(0)
Undetermined/other	229	(4)	117	(10)	74	(9)	20	(10)	5	(3)	451	(5)
Male Subtotal	**5,738**	(91)	**870**	(71)	**683**	(86)	**167**	(80)	**109**	(65)	**7,618**	(87)
Female												
Injection drug use (IDU)	173	(3)	68	(6)	14	(2)	3	(1)	32	(19)	291	(3)
Heterosexual contact	298	(5)	163	(13)	69	(9)	21	(10)	21	(13)	577	(7)
Blood product exposure	8	(0)	13	(1)	1	(0)	3	(1)	0	(0)	25	(0)
Perinatal exposure	10	(0)	11	(1)	4	(1)	2	(1)	0	(0)	27	(0)
Undetermined/other	92	(1)	97	(8)	21	(3)	13	(6)	5	(3)	231	(3)
Female Subtotal	**581**	(9)	**352**	(29)	**109**	(14)	**42**	(20)	**58**	(35)	**1,151**	(13)
Total	**6,319**	**(72)**	**1,222**	**(14)**	**792**	**(9)**	**209**	**(2)**	**167**	**(2)**	**8,769**	**(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 Alaska Native.
4. Totals include 22 King County and 23 Washington State persons classified as multi race, and 13 King county and 38 Washington State persons with missing race.

Table 6: Persons presumed living with HIV/AIDS by gender and age at HIV diagnosis reported as of 12/31/04 - King County and Washington State

	King County				Washington State			
Age at HIV Diagnosis	Male		Female		Male		Female	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Under 13 years	9	(0)	16	(3)	25	(0)	30	(3)
13-19 years	83	(2)	32	(6)	139	(2)	65	(6)
20-29 years	1,491	(29)	189	(35)	2,241	(29)	390	(34)
30-39 years	2,308	(45)	187	(35)	3,301	(43)	387	(34)
40-49 years	996	(19)	77	(14)	1,509	(20)	200	(17)
50-59 years	202	(4)	33	(6)	339	(4)	65	(6)
60 years and over	30	(1)	5	(1)	64	(1)	14	(1)
Total	**5,119**	**(100)**	**539**	**(100)**	**7,618**	**(100)**	**1,151**	**(100)**

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and persons living with HIV/AIDS at end of three year intervals - reported as of 12/31/04 - King County

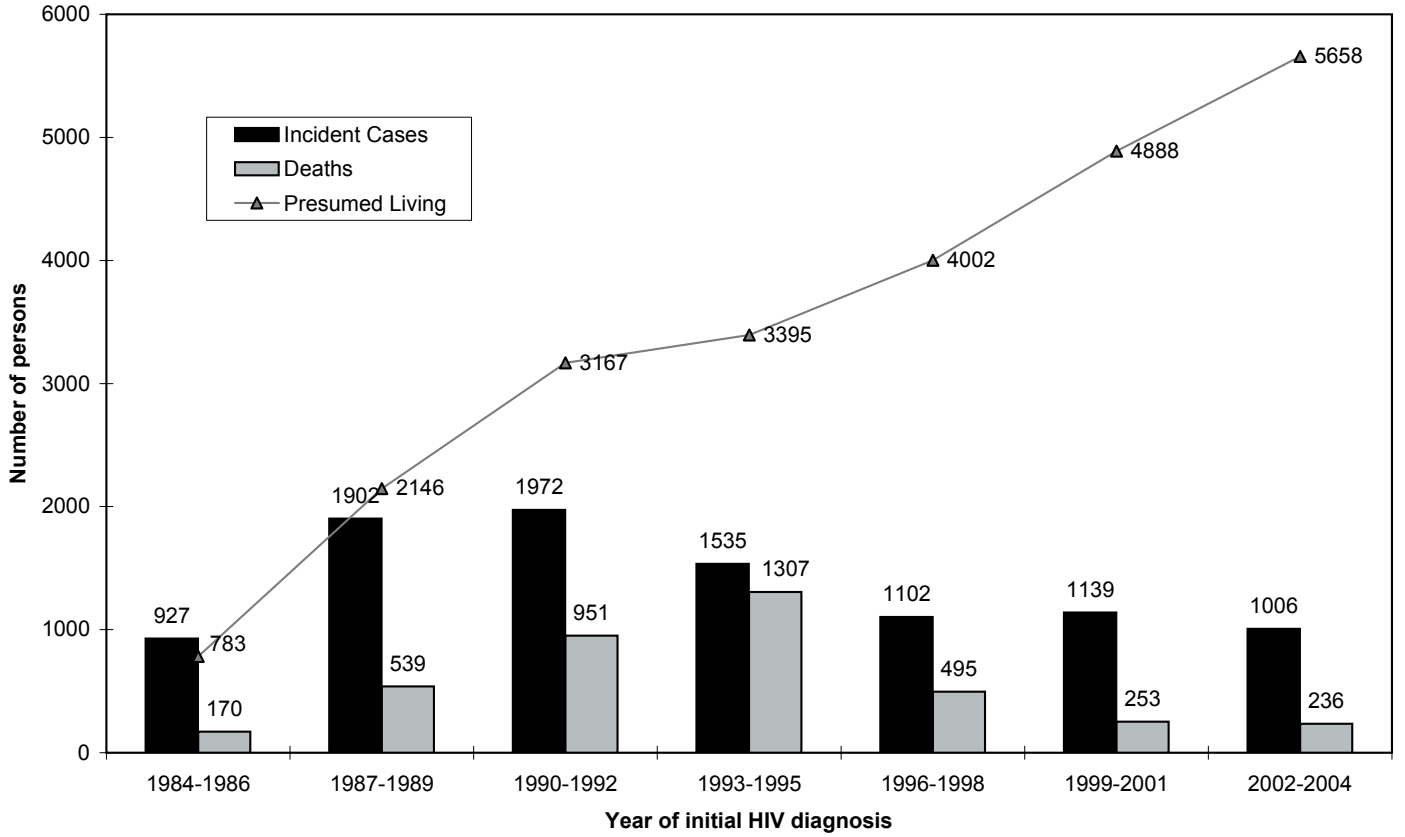


Figure 2: Number of new HIV/AIDS diagnoses, deaths, and persons living with HIV/AIDS at end of three year intervals - reported as of 12/31/04 - Washington State

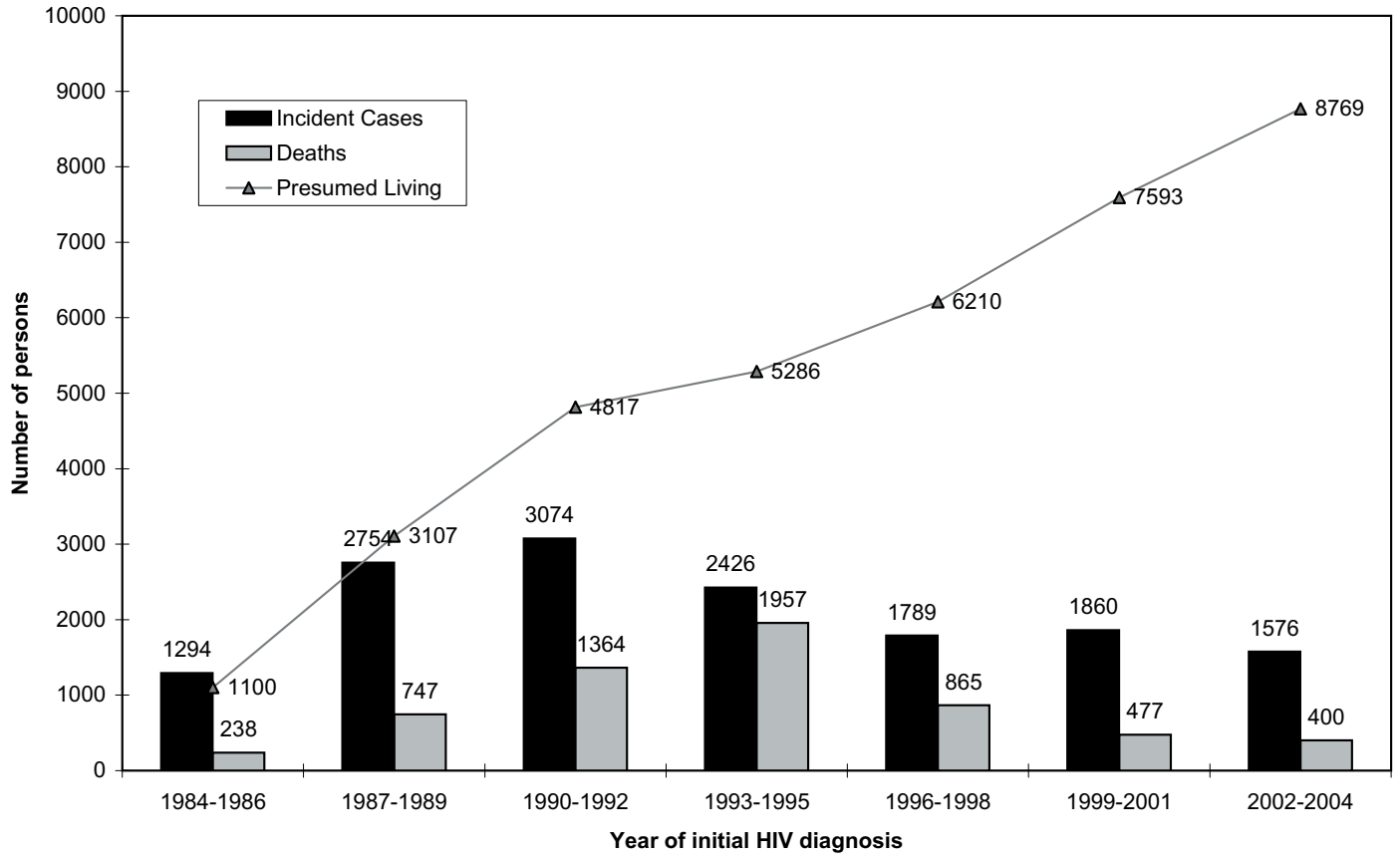


Table 7: Demographic characteristics and year of HIV diagnosis for 9,614 Seattle-King County residents - reported through 12/31/04

	1982-1989		1990-1992		1993-1995		1996-1998		1999-2001		2002-2004[1]		Trend[2]
	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	1996-2004
TOTAL	**2,860**	**(100)**	**1,972**	**(100)**	**1,535**	**(100)**	**1,102**	**(100)**	**1,139**	**(100)**	**1,006**	**(100)**	
HIV Exposure Category													
Men who have sex with men (MSM)	2,250	(79)	1,487	(75)	1,117	(73)	749	(68)	748	(66)	651	(65)	
Injection drug user (IDU)	130	(5)	119	(6)	100	(7)	78	(7)	79	(7)	67	(7)	
MSM-IDU	331	(12)	221	(11)	136	(9)	91	(8)	80	(7)	71	(7)	
Heterosexual contact	53	(2)	67	(3)	84	(5)	66	(6)	131	(12)	109	(11)	up
Blood product exposure	56	(2)	24	(1)	9	(1)	6	(1)	8	(1)	3	(0)	
Perinatal exposure	7	(0)	9	(0)	5	(0)	3	(0)	4	(0)	0	(0)	
SUBTOTAL- known risk	*2,827*		*1,927*		*1,451*		*993*		*1,050*		*901*		
Undetermined/other[3]	33	(1)	45	(2)	84	(5)	109	(10)	89	(8)	105	(10)	
Sex & Race/Ethnicity													
Male	2,755	(96)	1,868	(95)	1,413	(92)	993	(90)	1,005	(88)	889	(88)	
White Male[4]	2,402	(84)	1,530	(78)	1,090	(71)	718	(65)	689	(60)	571	(57)	down
Black Male[4]	188	(7)	178	(9)	173	(11)	120	(11)	157	(14)	155	(15)	up
Hispanic Male	99	(3)	103	(5)	103	(7)	106	(10)	106	(9)	103	(10)	
Other Male[4]	66	(2)	57	(3)	47	(3)	49	(4)	53	(5)	60	(6)	
Female	105	(4)	104	(5)	122	(8)	109	(10)	134	(12)	117	(12)	
White Female[4]	66	(2)	62	(3)	55	(4)	51	(5)	43	(4)	33	(3)	
Black Female[4]	26	(1)	30	(2)	46	(3)	39	(4)	71	(6)	62	(6)	up
Hispanic Female	3	(0)	4	(0)	14	(1)	5	(0)	14	(1)	8	(1)	
Other Female[4]	10	(0)	8	(0)	7	(0)	14	(1)	6	(1)	14	(1)	
Race/Ethnicity													
White[4]	2,468	(86)	1,592	(81)	1,145	(75)	769	(70)	732	(64)	604	(60)	down
Black[4]	214	(7)	208	(11)	219	(14)	159	(14)	228	(20)	217	(22)	up
Hispanic	102	(4)	107	(5)	117	(8)	111	(10)	120	(11)	111	(11)	
Asian & Pacific Islander[4]	32	(1)	40	(2)	20	(1)	34	(3)	35	(3)	33	(3)	
American Indian/ Alaska Native[4]	38	(1)	18	(1)	30	(2)	24	(2)	13	(1)	21	(2)	
Multi Race[4]	6	(0)	6	(0)	4	(0)	3	(0)	5	(0)	16	(2)	up
Unknown	0	(0)	1	(0)	0	(0)	2	(0)	6	(1)	4	(0)	
Age at diagnosis of HIV													
0-19 years	66	(2)	33	(2)	19	(1)	20	(2)	20	(2)	10	(1)	
20-24 years	300	(10)	123	(6)	102	(7)	57	(5)	92	(8)	72	(7)	
25-29 years	610	(21)	400	(20)	291	(19)	192	(17)	167	(15)	141	(14)	down
30-34 years	702	(25)	467	(24)	362	(24)	267	(24)	263	(23)	191	(19)	down
35-39 years	562	(20)	413	(21)	319	(21)	247	(22)	261	(23)	244	(24)	
40-44 years	322	(11)	250	(13)	202	(13)	149	(14)	171	(15)	173	(17)	up
45-49 years	144	(5)	159	(8)	122	(8)	93	(8)	91	(8)	90	(9)	
50-54 years	75	(3)	59	(3)	66	(4)	48	(4)	48	(4)	47	(5)	
55-59 years	49	(2)	35	(2)	37	(2)	14	(1)	16	(1)	24	(2)	up
60-64 years	10	(0)	19	(1)	8	(1)	4	(0)	5	(0)	8	(1)	
65 + years	10	(0)	14	(1)	7	(0)	11	(1)	5	(0)	6	(1)	

1. Due to delays in reporting, data from recent years are incomplete.
2. Statistical trends were identified from the chi-square test for trend, calculated for the periods 1996-98, 1999-2001, and 2002-04.
3. 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.
4. And not Hispanic. The groups Asian, Native Hawaiian, & other Pacific Islanders were grouped due to small cell sizes. All race and ethnicity categories are mutually exclusive.

Table 8: Demographic characteristics and year of HIV diagnosis for 14,824 Washington State residents - reported through 12/31/04

	1982-1989		1990-1992		1993-1995		1996-1998		1999-2001		2002-2004[1]		Trend[2]
	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)	1996-2004
TOTAL	**4,099**	**(100)**	**3,074**	**(100)**	**2,426**	**(100)**	**1,789**	**(100)**	**1,860**	**(100)**	**1,576**	**(100)**	
HIV Exposure Category													
Men who have sex with men (MSM)	3,028	(74)	2,121	(69)	1,519	(63)	1,063	(59)	1,077	(58)	901	(57)	
Injection drug user (IDU)	266	(6)	288	(9)	268	(11)	191	(11)	207	(11)	153	(10)	
MSM-IDU	495	(12)	329	(11)	217	(9)	136	(8)	125	(7)	102	(6)	
Heterosexual contact	100	(2)	170	(6)	216	(9)	179	(10)	247	(13)	218	(14)	up
Blood product exposure	130	(3)	53	(2)	29	(1)	13	(1)	12	(1)	6	(0)	
Perinatal exposure	13	(0)	17	(1)	16	(1)	9	(1)	6	(0)	2	(0)	
SUBTOTAL- known risk	*4,032*		*2,978*		*2,265*		*1,591*		*1,674*		*1,382*		
Undetermined/other[3]	67	(2)	96	(3)	161	(7)	198	(11)	186	(10)	194	(12)	
Sex & Race/Ethnicity													
Male	3,894	(95)	2,815	(92)	2,135	(88)	1,559	(87)	1,579	(85)	1,319	(84)	down
White Male[4]	3,399	(83)	2,296	(75)	1,667	(69)	1,163	(65)	1,093	(59)	877	(56)	down
Black Male[4]	250	(6)	261	(8)	224	(9)	169	(9)	220	(12)	207	(13)	up
Hispanic Male	145	(4)	173	(6)	171	(7)	147	(8)	180	(10)	149	(9)	
Other Male[4]	100	(2)	85	(3)	73	(3)	80	(4)	86	(5)	86	(5)	
Female	205	(5)	259	(8)	291	(12)	230	(13)	281	(15)	257	(16)	up
White Female[4]	150	(4)	170	(6)	153	(6)	122	(7)	123	(7)	103	(7)	
Black Female[4]	37	(1)	52	(2)	80	(3)	66	(4)	97	(5)	95	(6)	up
Hispanic Female	5	(0)	20	(1)	37	(2)	16	(1)	34	(2)	25	(2)	
Other Female[4]	13	(0)	17	(1)	21	(1)	26	(1)	27	(1)	34	(2)	
Race/Ethnicity													
White[4]	3,549	(87)	2,466	(80)	1,820	(75)	1,285	(72)	1,216	(65)	980	(62)	down
Black[4]	287	(7)	313	(10)	304	(13)	235	(13)	317	(17)	302	(19)	up
Hispanic	150	(4)	193	(6)	208	(9)	163	(9)	214	(12)	174	(11)	
Asian & Pacific Islander[4]	43	(1)	55	(2)	37	(2)	50	(3)	58	(3)	56	(4)	
Native American or Alaska Native[4]	60	(1)	38	(1)	48	(2)	45	(3)	34	(2)	40	(3)	
Multi Race[4]	7	(0)	7	(0)	5	(0)	3	(0)	5	(0)	16	(1)	up
Unknown	3	(0)	2	(0)	4	(0)	8	(0)	16	(1)	8	(1)	
Age at diagnosis of HIV													
0-19 years	124	(3)	61	(2)	48	(2)	38	(2)	36	(2)	19	(1)	down
20-24 years	495	(12)	236	(8)	190	(8)	102	(6)	153	(8)	129	(8)	up
25-29 years	877	(21)	619	(20)	445	(18)	296	(17)	256	(14)	218	(14)	down
30-34 years	973	(24)	726	(24)	554	(23)	412	(23)	405	(22)	277	(18)	down
35-39 years	756	(18)	591	(19)	492	(20)	388	(22)	408	(22)	343	(22)	
40-44 years	441	(11)	381	(12)	329	(14)	252	(14)	287	(15)	266	(17)	up
45-49 years	198	(5)	245	(8)	182	(8)	147	(8)	155	(8)	159	(10)	
50-54 years	108	(3)	91	(3)	88	(4)	90	(5)	86	(5)	84	(5)	
55-59 years	71	(2)	65	(2)	59	(2)	32	(2)	43	(2)	47	(3)	up
60-64 years	30	(1)	33	(1)	16	(1)	15	(1)	15	(1)	18	(1)	
65 + years	26	(1)	26	(1)	23	(1)	17	(1)	16	(1)	16	(1)	
Residence[5]													
Region 1- Spokane area	190	(5)	162	(5)	124	(5)	94	(5)	112	(6)	86	(5)	
Region 2- Yakima area	96	(2)	82	(3)	96	(4)	74	(4)	77	(4)	67	(4)	
Region 3- Everett area	299	(7)	225	(7)	208	(9)	170	(10)	132	(7)	125	(8)	
Region 4- Seattle area	2,860	(70)	1,972	(64)	1,535	(63)	1,102	(62)	1,139	(61)	1,006	(64)	
Region 5- Tacoma area	379	(9)	354	(12)	248	(10)	207	(12)	238	(13)	159	(10)	
Region 6- Olympia area	275	(7)	279	(9)	215	(9)	142	(8)	162	(9)	133	(8)	

1. Due to delays in reporting, data from recent years are incomplete.
2. Statistical trends were identified from the chi-square test for trend, calculated for the periods 1996-98, 1999-2001, and 2002-04.
3. 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.
4. And not Hispanic. The groups Asian, Native Hawaiian, & other Pacific Islanders were grouped due to small cell sizes. All categories are mutually exclusive.
5. 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.

New approaches to monitoring HIV: Three new surveillance projects

Since tracking of AIDS was instituted in the United States in 1982, the HIV/AIDS epidemic has been monitored through case surveillance and a series of special projects and studies sponsored by the Centers for Disease Control and Prevention (CDC). These data are routinely displayed in our HIV/AIDS Epidemiology Report.

In a 2001 strategic plan, CDC announced four national goals to reduce the annual number of new HIV infections in half -- from an estimated 40,000 to 20,000 -- by 2005.[1] One goal is to provide better direction and evaluation of prevention efforts through implementation of an integrated system "to monitor incidence of new infections, to track the prevalence of disease, to monitor behaviors that place people at risk for HIV infection and to provide locally relevant data for community planning."

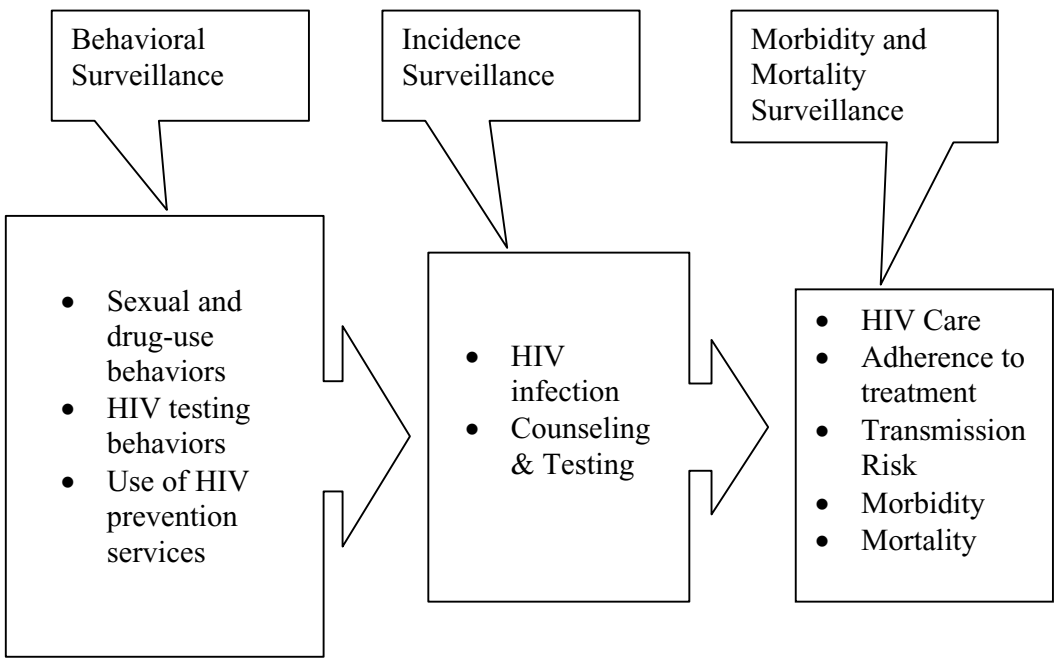
To reach this goal, CDC is implementing three new systems that will complement existing case surveillance. These will monitor risk behaviors, new (incident) HIV infections, and ongoing (prevalent) HIV infections including AIDS and deaths. Figure 1 shows the relationships between the sentinel events under surveillance and behaviors leading to those events, and including prevention-related services and activities. The information generated from these three surveillance systems is essential to effectively plan and evaluate: prevention interventions, access to HIV testing and care, and adherence to HIV treatment. Each surveillance system is described in more detail below.

National HIV Behavioral Surveillance (NHBS)

History

Public Health – Seattle & King County (PHSKC) has participated in a number of CDC-sponsored projects to monitor HIV seroprevalence and risk behaviors. From 1988 to 1999 we participated in the National HIV Serosurveillance Surveys. These surveys assessed HIV prevalence and related risk behaviors in a number of populations at higher risk for HIV, including injection drug users (IDU) entering treatment, clients of sexually transmitted disease (STD) clinics, tuberculosis clinics, women's clinics, and hospital emergency departments. At the same time, the Washington State Department of Health conducted statewide surveys of child-bearing women and people in correctional facilities. These surveys were anonymous and results could not be linked to any specific persons. Between 1991 and 1998 PHSKC participated in several HIV seroprevalence and interview risk behavior surveys of STD clinic clients and IDU. PHSKC was one of seven Young Men's Survey (YMS) sites; YMS assessed HIV seroprevalence and

Figure 1: HIV sentinel surveillance projects and associated events and behaviors.



risk behaviors in men who have sex with men (MSM) aged 15 to 29 years between 1997 and 2000. The Kiwi Study (1998 –2002) surveyed HIV seroprevalence and risk behaviors in recently arrested IDU in King County. With the advent of the Less Sensitive HIV-1 EIA technology and the serologic testing algorithm for recent HIV Infection (STARHS) (additional description in next section of this article), many of these studies also measured HIV incidence. PHSKC also participated in two cycles of the HIV Testing Survey (HITS) that focused on MSM, IDU and high-risk heterosexuals (HRH) among the general King County population (2000) and among Asians & Pacific Islanders (2002-2003).

In 2002 the 25 metropolitan statistical areas (MSAs) with the highest number of persons living with AIDS were invited to collaborate with the CDC to develop and implement a surveillance system to monitor behaviors that place people at risk for HIV. This system is called the National HIV Behavioral Surveillance system (NHBS). Seventy percent of total U.S. AIDS cases were reported from these MSAs in 2000. NHBS will help state and local health departments monitor selected behaviors and access to prevention services among groups at highest risk for HIV infection. Findings from NHBS will be used to develop and evaluate HIV prevention programs. Within each MSA data are collected within the major city or county; in the Seattle MSA data will be collected in King County.

NHBS is being implemented in multiple cycles. During the first cycle of data collection (2004), NHBS focused on MSM. The second cycle (2005) includes IDU, and the third cycle (2006) high risk heterosexuals (HRH). These cycles will be repeated over time such that data are gathered from one population each year. King County was not included in the initial MSM cycle, but will participate in the IDU and HRH cycles in 2005 and 2006. The objectives of NHBS are:

Among representative samples of persons at high risk for HIV infection, including MSM, IDU, and HRH, assess the prevalence over time of:

- Sexual and drug-use risk behaviors,
- HIV testing behaviors,
- Exposure to and use of prevention services and activities,
- Impact of prevention services on behavior, and
- Prevention-service gaps and missed opportunities for prevention.

Prior to each NHBS cycle a formative assessment is conducted to learn more about the local population, use of HIV prevention and health and social services, and issues related to recruitment for the survey. Each area will survey 500 persons each year using a different sampling method for each population. Data are collected through face-to-face interviews using a CDC standardized questionnaire. Responses are entered directly into handheld computers and will be available for analysis shortly after the end of each survey. Thus, we plan to provide a report of findings to the local community within a few months after completing each survey cycle.

HIV Incidence Surveillance (HIS)

Until recently, lab assays could not distinguish between recent and chronic HIV infection. Except for cases with recent documented negative HIV tests, when individuals are first diagnosed with HIV it is typically not possible to know if they have been infected for weeks or years. Because of this, HIV surveillance systems are good at measuring HIV prevalence (the proportion of a population infected) but poor at measuring HIV incidence (the number of new infections in a population over a period of time). However new technologies have been developed that are able to distinguish between new and long-standing HIV infection; these will improve the ability of surveillance programs to monitor HIV incidence.[2,3]

The goal of CDC-sponsored HIV Incidence Surveillance is to provide national and local population-based estimates of the number of new HIV infections per year. Incidence Surveillance employs the serological testing algorithm for recent HIV seroconversion (STARHS). Leftover serum from the HIV diagnostic specimen is tested with a special assay that detects HIV-specific antibody. If the antibody concentration is below a predetermined threshold, the assay is considered to have a "low" result, indicating HIV infection may have occurred recently. The proportion of new HIV-positive diagnoses with "low" results is one of the elements of the STARHS mathematical equation used to calculate HIV incidence. HIV incidence estimates are important to public health officials who must allocate limited HIV prevention resources – prevention efforts may be most effective when applied to populations where incidence is highest or is increasing.

Public Health – Seattle & King County and the Washington State Department of Health have received federal funding to incorporate HIV Incidence Surveillance with Core HIV/AIDS Surveillance activities. PHSKC began specimen and data collection in April 2004 and Washington State will implement these activities in 2005. One additional component is necessary for Incidence Surveillance: the patient's HIV testing history. Each newly diagnosed individual is administered a brief questionnaire that collects information about past HIV tests.

Eventually the testing history information will be incorporated into the routine data collection carried

out during HIV counseling and testing sessions and for core HIV/AIDS surveillance. The inclusion of testing history questions into routine counseling is a key step to help Incidence Surveillance function successfully. Please see page 32 in this issue for an article comparing HIV incidence rates among people testing for HIV anonymously versus confidentially.

Morbidity Monitoring Project (MMP) Surveillance

While AIDS and HIV infection have been well studied, there still is an ongoing need for timely local and national data to monitor the epidemic. These data include information regarding when and how HIV-infected individuals seek care, availability of care, adverse effects of treatment, long term effects of HIV and its treatment, other health outcomes, and how health outcomes affect HIV transmission.[4] Such data will enhance local advocacy for additional resources for HIV care, treatment and research. Further, a national representative sample of care data will assist in identifying gaps in care and may aid in procuring additional funding for HIV treatment and care.

Since 1990, PHSKC participated in the CDC-sponsored Adult and Adolescent Spectrum of HIV-related Diseases (ASD) project. ASD was a confidential medical records-based observational cohort study at selected King County sites. This study was designed to monitor the spectrum and frequency of HIV-related illness, treatments, mortality, and health care utilization. Washington State Department of Health participated in a similar project sponsored by the CDC called Supplement to HIV/AIDS Surveillance, or SHAS. SHAS was an interview-based project and in addition to clinical and health care utilization, collected data on behaviors and perceptions.

CDC ended both ASD and SHAS in June 2004 and replaced both with the Morbidity Monitoring Project (MMP). This expanded surveillance project was awarded to the Washington State Department of Health (DOH) and 25 other sites nationwide with expectations to add more sites in the future. The goals of MMP are to provide local and national estimates of the population under care for HIV; examine variations in access to care, unmet needs for services, health-related quality of life, prevention services, and quality of care by geographic location, type of healthcare system and patient characteristics; and, to provide a consistent methodology for state and local health departments to measure important aspects of morbidity, access to and use of prevention services, and service gaps for people in care for HIV infection.

MMP has a one-year retrospective medical chart review with an accompanying patient interview. MMP will utilize a three-stage random sampling of states (already selected), providers, and patients. This will provide representative and relevant data for use at the national, state, and local levels. The DOH and PHSKC will collaborate to conduct interviews and medical record abstractions.

MMP will be an important part of DOH and PHSKC activities in monitoring HIV-related morbidity and to document the impact of care for HIV-infected individuals. PHSKC will collect and maintain information under the security and confidentiality guidelines established by the CDC for all surveillance activities. Identifying data will not be transmitted to the CDC. Aggregate data will be available for community organizations, public health agencies, individuals and providers.

For more information please contact: Hanne Thiede at hanne.thiede@metrokc.gov or (206) 296-4318 (HIV Behavioral Surveillance), Christina Lynch (206) 205-0997 (Incidence Surveillance) or Elizabeth Barash (206) 296-2907 (Morbidity Monitoring Project).

• Contributed by Hanne Thiede, DVM, MPH, Christina Lynch, MPH, Erin Kahle, MPH, and Susan Buskin, PhD, MPH.

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Methamphetamine use and HIV among Seattle area MSM

Methamphetamine (or "crystal") use has been prevalent among Seattle area men who have sex with men (MSM) for over a decade. Public Health-Seattle & King County (PHSKC) has conducted HIV studies of injection drug users (IDU) since 1988 and found as high as 60% HIV seroprevalence among MSM methamphetamine injectors between 1988 and 1991.[1] As a result, an HIV prevention program targeting MSM methamphetamine injectors was implemented in 1994. More recent local studies have shown increased HIV seroprevalence and incidence among MSM who report methamphetamine use by non-injection routes. In response to increasing concern about methamphetamine use in MSM among HIV prevention providers and the community during the past year, PHSKC undertook a comprehensive review of local behavioral research studies and HIV/STD testing and reporting data to: (1) Determine the current prevalence of methamphetamine use among MSM; (2) Identify associations between MSM methamphetamine use and HIV; (3) Assess findings specific to methamphetamine injection.

Methods

PHSKC HIV/AIDS epidemiology staff compiled data from eighteen local surveillance, testing and research databases that included methamphetamine use and HIV in MSM and MSM/IDU.[2] Data from different projects were combined into ranges; mid-range point estimates were given. Differences between these data sources such as sampling methods, definitions of variables and referent time periods were taken into consideration, data were rounded, and outlying data were excluded.

Results of the data synthesis were summarized into key "talking points" that were disseminated throughout the community via a local community forum, a service provider's summit, and a booklet produced by the Gay Men, Drug Use and HIV Workgroup called "Deconstructing Tina." (available on-line at www.metrokc.gov/health/apu/menuhr.htm).

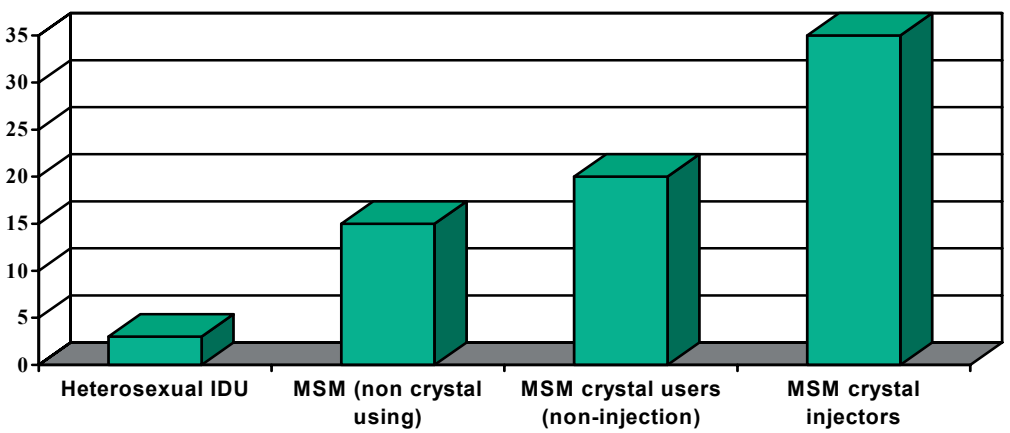
Results

Even though methamphetamine use is common among MSM, most MSM do not use methamphetamines. Roughly 1 out of 10 MSM has used methamphetamines at least once in the past year. However, recent use of methamphetamine may be up to 20% among MSM under the age of 30, and about 30% in MSM with HIV. Methamphetamine use is also more prevalent among White MSM than MSM of Color.

There is a strong and consistent association between methamphetamine use (particularly injection) and HIV prevalence. About 20% of MSM who have used methamphetamines by non-injection in the past year are HIV infected compared with 15% of MSM with no recent history of methamphetamine use. However, the prevalence of HIV among MSM who have injected methamphetamine in the past year is 35%, two times that of all MSM (non-IDU) and ten times that of heterosexual IDU. (See Figure 1 below.)

MSM who use methamphetamines have higher levels of sexual risk behavior than MSM who do not use methamphetamines. Multiple data sources indicated higher rates of unprotected anal sex among MSM methamphetamine users compared to those that did not use. Methamphetamine users also report having more sexual partners, including those of discordant or unknown HIV serostatus.

Figure 1: Percent of MSM and IDUs infected with HIV, data averaged from various Public Health studies, 1994 - 2004



Methamphetamine use is also associated with increased rates of gonorrhea. At the PHSKC STD Clinic data, MSM who had ever used methamphetamines were twice as likely to have gonorrhea compared to MSM with no history of methamphetamine use.

MSM who inject methamphetamine are a small yet critical risk population. Only about 2% (n=660-990) of all MSM have injected methamphetamines at least once in the past year, and injectors make up an estimated 11% of current MSM methamphetamine users. While this population may be small, data from the KIWI Study of incarcerated IDU suggest a distinct risk profile (Table 1). HIV prevalence was almost 30% in MSM methamphetamine injectors compared to 9% in MSM heroin injectors and 2% in non-MSM male injectors. Hepatitis C seroprevalence, however, was relatively low in male amphetamine injectors, regardless of MSM behavior. This suggests that the high HIV prevalence in MSM amphetamine injectors is probably due to sexual transmission rather than transmission via sharing of syringes or other drug injection equipment. Data from the KIWI Study also show that only a minority of MSM injectors identify as gay – this may indicate MSM amphetamine injectors may not access prevention services targeting gay-identified MSM.

Discussion

While population-based trend data are not available, methamphetamine use is clearly associated with the epidemic of HIV among King County MSM. MSM who use methamphetamines are at increased risk for HIV because they have: (a) higher rates of unprotected anal sex, with more sexual partners; (b) may have sex within a network of MSM with a higher rate of HIV seroprevalence; and (c) have higher rates of STDs which enhance the likelihood of HIV transmission. Furthermore the prevalence, culture, and risk factors of methamphetamine use may vary significantly by sub-populations of MSM (e.g. HIV-positive MSM, younger MSM, injectors, MSM who don't identify as gay) and thus merit further qualitative research on patterns of use initiation and progression among these sub-groups. Some risk reduction programs, including drug treatment, are already in place for MSM methamphetamine injectors, though their capacity is limited. There is an urgent need to further develop cost-effective interventions to prevent and treat methamphetamine abuse and to evaluate the impact of methamphetamine use on risk behaviors and HIV/STD incidence.

For further information please contact Susan Kingston at 206-205-6105 or susan.kingston@metrokc.gov

We appreciate the collaboration of all the researchers from the University of Washington, PHSKC and the Washington State Department of Health staff, and community partners who provided data for this project.

• Contributed by Susan Kingston and Hanne Thiede, DVM, MPH

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PHSKC HIV Care Services Consumer Needs Assessment ('03);
PHSKC Survey of HIV Disease and Care ('98-'99);
UW MSM Club Drug Use and Related Behaviors Study ('03);
Univ of WA Project SHAPE ('98-'01);
PHSKC/Univ of WA Sleepless in Seattle Study ('00);
Univ of WA Project Explore (Seattle baseline data '99-'03);
PHSKC MSM Random Digit Dial Survey ('03);
PHSKC RAVEN Study (baseline data, '94-'98);
PHSKC Kiwi Study ('98-'02);
PHSKC DUIT Study (Seattle baseline data "02-'04);
PHSKC Young Men's Survey 1 ('97-'98) and
Young Men's Survey 2 ('98-'02);
PHSKC Seattle Area Men's Study ('02-ongoing).

Table 1: HIV and HCV seroprevalence by primary injection drug and MSM status in recently arrested male injectors, Seattle - King County, Kiwi Study, 1998 - 2002

MSM status and primary injection drug	HIV		Hepatitis C	
	N	% HIV+	N	% HCV+
Never-MSM heroin injectors	553	2.0	364	78.3
Never-MSM amphetamine injectors	343	1.1	307	38.1
MSM heroin injectors	32	9.7	16	75.0
MSM amphetamine injectors	41	29.3	32	37.5

MSM=men who had sex with men in the past year; men who had sex with men but only more than 1 year ago were excluded.
Note: KIWI is just one source of the averaged data in Figure 1, so does not match that figure.

Trends in HIV prevalence, incidence and risk behaviors among Seattle-King County STD Clinic patients, 1988-2003

The Centers for Disease Control and Prevention (CDC) sponsored unlinked anonymous HIV seroprevalence surveys in different sentinel populations in selected metropolitan areas between 1988 and 1999, including sexually transmitted diseases (STD) clinics.[1,2] CDC funded the survey in the Public Health STD Clinic in Seattle through 1997 and alternate funding supported the survey from 1998 to 2003. The findings described in this report are based on data collected during cross-sectional surveys conducted in the second half of each year between 1988 and 2003. Leftover blood specimens collected for clinical purposes were tested for HIV antibodies after removal of personal identifiers and linked via an anonymous code to data collected from patient records. Only data from the first clinic visit in each annual survey period are included. Data from the same patients may be included in different years. The less sensitive HIV-1 EIA serological testing algorithm for recent HIV seroconversion (STARHS) methodology described by Janssen et al. was used to estimate HIV incidence.[3] The unlinked nature of the survey avoids participation bias and helps assure a representative sample of the survey population while preserving the anonymity of STD Clinic clients. The survey is approved by the Washington State Institutional Review Board.

Our findings among eligible surveyed STD patients are summarized below. Results are combined for all women and men who only have sex with women (MSW) because of the similar HIV seroprevalence and presented separately for men who have sex with men (MSM). The terms MSW and MSM are used because men are classified, for the purpose of this report, according to the gender of their sex partners.

Results

Women and men who have sex with women only - HIV prevalence and trends

Data from 22,329 visits by women and MSW were included in the survey between 1988 and 2003 (Table 1). A little over one-third were women. Over half (58%) were White, 26% Black, 5% Hispanic, 5% Asian/Pacific Islander, 2% American Indian/Alaska Native, and 4% were of another race or ethnicity, including mixed. Fifty-eight percent were younger than age 30. The gender distribution remained stable over the years of the survey, while the proportion of White clients increased from 56% in 1988-89 to 62% in 2002-03 and the proportion of African American clients decreased from 32% in 1988-89 to 20% in 2002-03. Seven percent had injected drugs at some time in their life and 4.0% had injected in the 12 months prior to their visit.

Samples from 76 (0.5%) men and 27 (0.3%) women tested positive for HIV. HIV prevalence declined from 0.9% in 1988-89 to 0.2% in 1996-97 and increased again to 0.5% in 2000-03. HIV prevalence fluctuated in several of the racial/ethnic groups over the years of the survey. No Asians/Pacific Islanders were HIV positive after 1989. African Americans and Hispanic clients had consistently higher HIV prevalences than White clients. There were no HIV infections detected among clients younger than 20. HIV prevalence increased in recent years among 30-39 year olds. Although HIV prevalence was higher among clients who reported ever having injected drugs in the earlier years of the survey, this difference was not consistent in recent years. None of the female/MSW STD clients who injected in the past year have been HIV positive since this information was first collected in 1993. Although the proportion of patients who were diagnosed with gonorrhea declined from 9% in 1989 to 2% in 2002-03, HIV prevalence among patients with gonorrhea increased significantly from 0.8% in 1989 to 4% in 2002-03.

Men who have sex with men - HIV prevalence and trends

A total of 3,366 eligible visits were male STD patients who reported sex with other men (Table 2). They comprised 20% of male STD Clinic clients, increasing from 10% in 1988-89 to 33% in 2002-03. The demographic and risk exposure characteristics were very different from those of female and MSW STD Clinic clients. Almost 80% were White, 7% African American, 7% Hispanic, 4% Asian/Pacific Islander, 2% American Indian/Alaska Native, and 3% of another race or ethnicity. Well over half were 30 years of age or older. A history of drug injection was reported by 9% and 4% had injected in the year prior to their visit.

A total of 435 (13%) MSM were infected with HIV. During the 16 annual survey periods, only two of the 74 MSM younger than age 20 years tested HIV positive. HIV prevalence in African American MSM was higher than in White MSM, particularly in 2002-03 where African American MSM had three-fold higher HIV prevalence than White MSM. During the years 1997 to 2003 HIV prevalence was 3% in MSM who reported sex with women in the year prior to the survey and 12% in MSM who did not report recent sex with women (data not available from other years).

HIV prevalence declined from 36% in 1988-89 to 5% in 1996-97 reaching a low of 4% in 1997 when the trend reversed and increased to 15% in 2002, and 12% in 2003. However, since 1997 statistically significant

Table 1: HIV prevalence and trends among all women and MSW STD Clinic patients, King County 1988-2003

Characteristics	Total[1] N (%)	1988-89 N (HIV%)	1990-91 N (HIV%)	1992-93 N (HIV%)	1994-95 N (HIV%)	1996-97 N (HIV%)	1998-99 N (HIV%)	2000-01 N (HIV%)	2002-2003 N (HIV%)
Total	22,329 (100.0)	3,037 (0.9)	3,020 (0.5)	3,133 (0.4)	2,596 (0.4)	2,925 (0.2)	2,532 (0.3)	2,516 (0.5)	2,570 (0.5)[2]
Sex									
Male	13,828 (61.9)	1,943 (1.1)	1,832 (0.6)	1,986 (0.5)	1,596 (0.4)	1,739 (0.1)	1,531 (0.3)	1,604 (0.6)^	1,596 (0.6)[2]
Female	8,501 (38.1)	1,094 (0.5)	1,188 (0.3)	1,147 (0.4)	1,000 (0.3)	1,186 (0.3)	1,001 (0.4)	911 (0.2)	974 (0.2)
Race/ethnicity[4]									
White non-Hispanic	12,834 (57.8)	1,678 (0.5)	1,606 (0.3)	1,784 (0.4)	1,500 (0.2)	1,706 (0.1)	1,504 (0.2)	1,480 (0.2)	1,575 (0.4)
Black non-Hispanic	5,753 (25.9)	969 (1.4)	956 (0.5)	873 (0.7)	663 (0.8)	642 (0.3)	562 (0.7)	572 (1.0)	516 (0.6)
Hispanic	1,185 (5.3)	123 (0.8)	172 (1.2)	171 (0.6)	128 (1.6)	155 (0.7)	146 (0.7)	146 (2.1)	144 (0.7)
Asian/PI	1,027 (4.6)	95 (1.1)	92 (0)	110 (0)	104 (0)	139 (0)	142 (0)	159 (0)	186 (0)
AI/AK Native	424 (1.9)	59 (1.7)	65 (6.2)	58 (0)	49 (0)	64 (0)	46 (0)	48 (0)	35 (2.9)
Other	987 (4.4)	87 (1.1)	119 (0)	131 (0)	141 (0)	209 (0)	123 (0)	83 (0)	94 (0)
Age (years)[5]									
<20	2,365 (10.8)	446 (0)	441 (0)	378 (0)	301 (0)	277 (0)	206 (0)	158 (0)	158 (0)
20-29	10,423 (47.6)	1,461 (0.8)	1,521 (0.7)	1,504 (0.3)	1,208 (0.2)	1,351 (0)	1,089 (0.1)	1,072 (0.3)	1,217 (0.2)
30-39	5,864 (26.8)	790 (1.8)	738 (0.4)	802 (1.0)	674 (0.7)	747 (0.3)	716 (0.4)	706 (1.0)	691 (1.2)[2]
40+	3,270 (14.9)	330 (0.3)	313 (0.6)	413 (0.2)	391 (0.5)	534 (0.6)	514 (0.8)	572 (0.3)	202 (0.5)
IDU ever									
No	20,815 (93.2)	2,839 (0.7)	2,809 (0.2)	2,911 (0.3)	2,411 (0.4)	2,720 (0.2)	2,362 (0.3)	2,331 (0.5)	2,431 (0.5)
Yes	1,514 (6.8)	198 (3.0)	211 (3.8)	222 (2.3)	185 (0.5)	205 (0)	170 (0.6)	184 (0)	139 (0.7)
IDU past year[6]									
No	14,243 (96.4)	NA	NA	1,565 (0.4)	2,499 (0.4)	2,793 (0.2)	2,440 (0.3)	2,412 (0.5)	2,533 (0.5)
Yes	528 (3.6)	NA	NA	67 (0)	97 (0)	132 (0)	92 (0)	103 (0)	37 (0)
Sex w/IDU ever									
No	20,481 (91.7)	2,924 (0.9)	2,746 (0.3)	2,822 (0.4)	2,375 (0.4)	2,627 (0.2)	2,300 (0.3)	2,294 (0.5)	2,392 (0.5)[2]
Yes	1,848 (8.3)	113 (0.9)	274 (2.2)	311 (1.0)	221 (0)	298 (0.3)	232 (0.9)	221 (0.5)	178 (0.6)
Gonorrhea[7]									
No	20,040(96.3)	1,387 (0.5)	2,756 (0.5)	3,018 (0.4)	2,527 (0.4)	2,883 (0.2)	2,499 (0.3)	2,452 (0.4)	2,518 (0.4)
Yes	768 (3.7)	130 (0.8)	264 (0.8)	115 (1.7)	69 (1.4)	42 (0)	33 (3.0)	63 (3.2)	52 (3.9)[3]

1. Individual categories may not add up to total because of missing data.
2. Indicates statistically significant increasing trend between 1997 and 2003.
3. Indicates statistically significant increasing trend between 1988 and 2003.
4. Race/ethnicity was missing for 119 persons; PI=Pacific Islander; AI=American Indian.
5. Age was missing for 407 persons.
6. IDU in the last year collected 1993-2003.
7. Gonorrhea at this visit collected 1989-2003.

Table 2: HIV prevalence and trends among MSM STD Clinic patients, King County 1988-2003

Characteristics	Total[1] N (%)	1988-89 N (HIV%)	1990-91 N (HIV%)	1992-93 N (HIV%)	1994-95 N (HIV%)	1996-97 N (HIV%)	1998-99 N (HIV%)	2000-01 N (HIV%)	2002-03 N (HIV%)
Total	3,366 (100.0)	194 (35.6)	240 (26.7)	342 (14.0)	305 (9.5)	365 (5.2)	488 (8.6)	681 (9.7)	751 (13.1)[2]
Race/ethnicity[3]									
White non-Hispanic	2,572 (76.9)	157 (37.6)	201 (25.4)	276 (15.2)	226 (9.3)	265 (3.8)	365 (7.4)	518 (9.7)	564 (11.9)[2]
Black non-Hispanic	248 (7.4)	--	--	29 (13.8)	--	33 (6.1)	36 (25.0)	50 (22.0)	48 (33.3)[2]
Hispanic	223 (6.7)	--	--	23 (0)	21 (4.8)	24 (12.5)	33 (9.1)	50 (2.0)	53 (11.3)
Asian/PI	130 (3.9)	--	--	--	--	--	--	28 (10.7)	58 (7.6)
AI/AK Native	59 (1.8)	--	--	--	--	--	--	--	--
Other	111 (3.3)	--	--	--	--	25 (8.0)	--	20 (5.0)	--
Age (years)[4]									
<20	74 (2.3)	--	--	--	--	--	--	--	--
20-29	1,317 (40.6)	82 (28.0)	107 (22.4)	150 (12.7)	124 (10.5)	163 (4.9)	180 (3.3)	249 (5.2)	262 (9.2)[2]
30-39	1,209 (37.3)	84 (40.5)	87 (27.6)	113 (14.2)	97 (9.3)	126 (7.1)	179 (12.3)	254 (14.2)	269 (16.7)[2]
40+	641 (19.8)	20 (45.0)	43 (37.2)	61 (19.7)	71 (8.5)	65 (1.5)	117 (12.0)	162 (9.9)	102 (15.7)[2]
IDU ever									
No	3,074 (91.3)	180 (35.0)	217 (25.3)	297 (13.8)	273 (9.2)	331 (4.8)	461 (8.9)	629 (10.0)	686 (12.2)[2]
Yes	292 (8.7)	--	23 (39.1)	45 (15.6)	32 (12.5)	34 (8.8)	27 (3.7)	52 (5.8)	65 (21.5)
IDU past year[5]									
No	2,649 (96.1)	NA	NA	158 (14.6)	289 (9.3)	342 (5.3)	476 (8.8)	656 (10.1)	728 (12.8)[2]
Yes	108 (3.9)	NA	NA	--	--	23 (4.3)	--	25 (0)	23 (21.7)[2]
Sex w/IDU ever									
No	3,046 (90.5)	178 (35.6)	216 (25.9)	297 (13.8)	272 (9.6)	327 (4.9)	451 (8.4)	622 (9.8)	683 (12.3)[2]
Yes	320 (9.5)	--	24 (33.3)	45 (15.6)	33 (9.1)	38 (7.9)	37 (10.8)	59 (8.7)	68 (20.6)
Gonorrhea[6]									
No	3,055 (92.9)	102 (27.5)	204 (24.5)	320 (10.9)	291 (8.6)	350 (4.9)	450 (7.8)	637 (8.3)	701 (11.6)[2]
Yes	233 (7.1)	--	36 (38.9)	22 (59.1)	--	--	38 (18.4)	44 (29.5)	50 (34.0)[2]

1. Individual categories may not add up to total because of missing data.
2. Indicates statistically significant increasing trend between 1997 and 2003.
3. Race/ethnicity was missing for 23 persons; PI=Pacific Islander; AI=American Indian.
4. Age was missing for 125 persons.
5. IDU in the last year collected 1993-2003.
6. Gonorrhea at this visit collected 1989-2003.

-- Data not shown because of small denominator (N < 20) which makes percentages less reliable.

increases were seen in several sub-categories in addition to the overall increasing trend. HIV prevalence tripled in White MSM and increased five-fold in Black MSM between 1996-97 and 2002-03. The increase was most pronounced among MSM 30 years and older, although the percent of HIV-positive MSM 20-29 years old also increased. Throughout the survey MSM who were HIV positive were more likely to have a diagnosis of gonorrhea compared to those who were negative. In 2002-03 one-third of MSM with gonorrhea were HIV-infected. There were no HIV-positive cases among MSM who injected drugs in the past year from 1997 to 2001, but in 2002 5 (10%) of 50 HIV-positive MSM reported injecting in the past year.

Recent sexual behaviors 2001 - 2003

About 15% of women and MSW reported five or more sex partners in the last year compared to roughly half of the MSM (Table 3). Fourteen percent of female/MSW clients reported two or more new sex partners in the last two months compared to 42% of MSM clients. Condom use at last sex increased with increasing number of partners, although over 60% of females/MSW and 50% of MSM with five or more partners in the past year reported no condom use at their last sexual encounter. Less than 5% reported sex with an injection drug user in the past year, and among those who did, about one-third also injected drugs themselves. None of the females or MSW who reported sex with an HIV-infected person tested HIV-positive, whereas 27% of the MSM who reported this behavior were positive (data not shown). Four percent of women reported sex with a bisexual man and 19% of MSM reported sex with a woman in the past year. MSM who knew they were HIV-positive were more likely to have 5 or more sex partners in the past year (63% vs. 51%), have 2 or more new sex partners in the past two months (52% vs. 41%), but equally likely to have used condoms during their last sexual encounter (47%) (data not shown). This survey does not include information on the HIV status of the sex partners.

HIV testing 2001 – 2003

Among female/MSW STD clients surveyed between 2001 and 2003, 91% had HIV counseling and testing as part of their current visit, and 70% had a history of previous HIV testing (not necessarily at the STD Clinic) and knew their HIV test result. As shown in Table 4, among the 21 females/MSW who tested HIV positive on the survey during these years, 10 (48%) already knew they were

Table 3: Recent sexual behaviors among STD Clinic patients, King County 2001-2003

Sexual behaviors	Women and men who only have sex with women N=3,864 Percent	Men who have sex with men N=1,132 Percent
Numbers of partners past yr.		
0 partners	7.9	4.0
1 partner	25.3	10.2
2 - 4 partners	52.0	35.0
5 or more partners	14.8	50.8
Number of partners past 2 mos.		
0 partners	18.7	8.6
1 partner	51.0	30.9
2 or more partners	30.3	60.5
Number of new partners past 2 mos.		
0 new partners	57.2	36.8
1 new partner	29.2	21.7
2 or more new partners	13.6	41.5
Condom use at last sex by no. of partners		
1 partner last year	30.1	36.8
2 - 4 partners last year	38.2	47.3
5 or more partners last year	38.1	49.8
Sex with IDU past yr.		
Yes	2.9	3.9
Sex with HIV+ past yr.		
Yes	0.6	13.6
Exchanged money/drugs for sex past yr.		
Yes	5.1	3.6
Sex with bisexual man (women) past yr.		
Yes	3.7	NA
Sex with women (MSM) past yr.		
Yes	NA	19%

Individual categories may not add up to total because of missing data.

HIV-infected, and an additional 7 (33%) learned they were HIV-positive at that visit if they received their HIV test results. Thus, 4 (19%) clients might have been unaware of their positive status because they had no history of a prior positive test and did not receive an HIV test at the current visit.

Among MSM clients surveyed (had blood drawn) between 2001 and 2003, 75% had HIV counseling and testing at the current visit, and 88% reported prior testing. Among the 141 MSM who tested HIV positive during these survey years, 99 (70%) already knew they were HIV-infected at the time of the visit. An additional 26 (18%) tested positive at the visit and presumably got their results, leaving 16 (11%) HIV-positive MSM who may not have been aware of their status. Eighty-seven percent of the HIV-negative MSM correctly knew their status at the time of their visit and 98% knew after their visit, assuming they received their HIV test results.

HIV incidence

The less sensitive HIV-1 EIA or STARHS was performed on 442 HIV-seropositive specimens from 1990-2003, including samples from 76 females/MSW and 366 MSM. There were too few recent HIV infections among females/MSW to allow for valid calculation of HIV seroincidence. Twenty-eight of the 366 HIV-positive samples from MSM tested as probable recent infections, because of low/non-reactive on the less sensitive HIV-1 EIA. The estimated annual HIV seroincidence ranged from 0.9% in 1994-1995 to 4.5% and 3.2% in 1990-91 and 2002-2003, respectively (Table 5). HIV prevalence rates and their 95% confidence intervals are also given for comparison. Although there was a suggestion of an increasing trend in HIV incidence between 1994-95 and 2002-03 the differences were not statistically significant as indicated by the broad and overlapping 95% confidence intervals.

Discussion

Over the 16 survey years HIV prevalence remained low among women and MSW STD Clinic clients. Prevalence has increased since 1996-97 overall, among MSW, and those 30-39 years of age. There was also an increase since 1989 for those with a diagnosis of gonorrhea. HIV prevalence was higher among African American and Hispanic clients throughout the survey years. HIV prevalence among MSM STD clients declined sharply between 1988-89 and 1997 but rose again through 2002-03. HIV prevalence was about 25-fold higher among MSM compared to MSW and women. HIV prevalence among African American MSM was three-fold higher than among White MSM in 2002-03. No HIV

Table 4: Correct knowledge of HIV status in relation to the STD Clinic visit, 2001-2003

Correct knowledge of HIV serostatus	Females/MSW		MSM	
	HIV+ N=21 N (%)	HIV- N=3,840 N (%)	HIV+ N=141 N (%)	HIV- N=988 N (%)
Knew at time of visit	10 (47.6)	2,703 (70.4)	99 (70.2)	864 (87.4)
Knew after visit[1]	7 (33.0)	1,055 (27.5)	26 (18.4)	106 (10.7)
May not have known after visit	4 (19.0)	82 (2.1)	16 (11.3)	18 (1.8)

1. Had an HIV test at their eligible visit and would know their HIV serostatus after the visit, assuming the results were given.

Table 5: HIV prevalence and estimated annual incidence among MSM STD Clinic patients, King County 1990-2003

Year of survey	Men who have sex with men	
	Prevalence % HIV+ (95% CI*)	Estimated Incidence % new HIV+ (95% CI*)
1990-91	26.7 (21.4 – 32.5)	4.5 (0.6 - 16.7)
1992-93	14.0 (10.7 – 18.0)	1.8 (0.1- 8.4)
1994-95	9.5 (6.6 – 13.2)	0.9 (0.01 - 6.9)
1996-97	5.2 (3.3 – 7.9)	1.5 (0.1 - 7.0)
1998-99	8.6 (6.4 – 11.3)	2.3 (0.4 - 7.5)
2000-01	9.7 (7.6 – 12.1)	2.1 (0.6 - 5.3)
2002-03	13.1 (10.8 – 15.6)	3.2 (1.3 – 6.9)

* The 95% confidence interval (CI) is the interval within which the point estimate (prevalence or incidence) is expected to fall 95% of the time; if 95% CIs overlap then the difference in prevalence or incidence in different time periods is not statistical significant.

cases were seen in women and MSW under the age of 20 and the prevalence among MSM in this age group was low. None of the MSW and women who reported recent injection of illicit drugs have been HIV positive while 22% of MSM IDU were HIV positive in 2002-03. The increasing HIV incidence rates, although not statistically significant, support concerns resulting from the continuing high rates of syphilis and bacterial STDs, that HIV transmission may be increasing among MSM in our area.[4, 5, 6]

A very high proportion of STD Clinic patients received HIV testing. At the time of the STD Clinic visit most MSM clients were aware of their status and most of those who did not know they were HIV positive were tested at that visit and presumably found out. MSM who knew they were HIV-infected had higher numbers of sex partners than those who knew they were HIV negative, although condom use was similar in the two groups. Unfortunately, the survey did not collect information on the HIV status of these men's sex partners. While it is encouraging that a high percent know their positive status, it is concerning that so many MSM diagnosed with HIV are in need of STD Clinic services. It is fortunate, however, that these HIV-positive MSM access the STD Clinic, which can provide comprehensive diagnostic, treatment, prevention, and referral services for this population and their sex partners.

There are some limitations to this survey. First, not all STD clinic patients have blood drawn, which may bias the observed HIV prevalence rates. If self-reported HIV status among clients with no blood draws is taken into account, then the "true" HIV prevalence among MSM STD Clinic clients is 1% to 4% higher. HIV prevalence between women and MSW clients with and without blood draws did not differ markedly in any of the survey years. Second, because the annual surveys are cross-sectional, client characteristics may differ between different survey years making comparisons across years less valid. Finally, the accuracy of the information depends on the accuracy of the STD Clinic records. Data needed for the survey -- such as previous testing history and results, which are essential for accurate interpretation of LS-EIA results for estimation of HIV seroincidence -- are rarely missing.

Because STD clinics serve large numbers of persons at increased risk for HIV due to unprotected sex, multiple sexual partners, and active STDs these clinics continue to be important sites for monitoring emerging patterns and trends in local HIV epidemiology. While CDC discontinued unlinked HIV serosurveys among STD clinic populations in the US in 1999, other countries including the UK, continue to consider these surveys extremely important for monitoring HIV.[7] Increases in HIV prevalence among MSM clients in recent years is of continued concern and warrants close monitoring of HIV, other STDs, and associated risk behaviors, as well as a heightened emphasis on prevention.

For additional information on the King County HIV seroprevalence surveys, please contact Hanne Thiede at (206) 296-4318 or hanne.thiede@metrokc.gov.

We greatly appreciate the collaboration of the STD Clinic and the Public Health Laboratory, which makes this survey possible.

• *Contributed by Hanne Thiede, DVM, MPH.*

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Prevalence of HIV and hepatitis A, B, and C and risk behaviors in young Seattle - King County injection drug users

Background

Bloodborne infections are common among injection drug users (IDU). In Seattle-King County, studies conducted over the last 15 years have found that hepatitis C (HCV) seroprevalence ranged from 75% to 85%[1-3] and annual incidence was around 20%.[3] HIV seroprevalence has remained low among local injectors; under 3% in those who are not men who have sex with men (MSM). Among MSM/IDU HIV seroprevalence is higher, especially among those who inject amphetamines -- ranging from 30%-45%. There is evidence that younger or newly initiated IDU are at particularly high risk of HCV infection and have especially high HCV seroincidence rates.[4,5] In an effort to learn more about effective interventions to reduce HIV and HCV risk behaviors in younger IDU, CDC funded 5 sites, including Public Health – Seattle & King County (PHSKC), to participate in the Collaborative Injection Drug Users Study III/Drug Users Intervention Trial (DUIT) between 1999 and 2004. This report describes findings from the baseline phase among Seattle-area DUIT participants.

Methods

In the baseline phase of DUIT, 15 to 30 year old IDU in Seattle were enrolled from May 2002 to January 2004 to assess eligibility for a behavioral intervention trial. Participants were recruited via outreach, local newspaper advertisements, and referrals by other IDU, and had to have injected illicit drugs in the past six months and be able to complete the study in English. After providing informed consent, participants completed an audio computerized administered self-interview (ACASI) that asked about sociodemographic characteristics, drug use, sexual behaviors, and health history. Following completion of the ACASI, a disease intervention specialist provided pre-test counseling for HIV and hepatitis A, B, and C and drew a blood sample for testing. Participants received a monetary incentive, condoms, referral for free hepatitis A and B vaccinations, and information about HIV and hepatitis prevention services. The study protocol was approved by the CDC's and University of Washington's Institutional Review Boards.

Results

Sociodemographic characteristics

A total of 589 young IDU were enrolled in the DUIT baseline phase in Seattle. The median age was 23 years. A little less than one-third were female, and 71% were white (Table 1). Eighteen percent of the 15-24 year old group and one-third of the 25-30 year old group had some college or technical training beyond high school. Two-thirds had been homeless at some point in the past 6 months, including 72% of the younger participants and 59% of the older participants. Eighty percent reported a history of incarceration.

Drug use history and behaviors, drug treatment, and source of new sterile syringes

The median age of first injection was 17 years, and the median time since first injection was 5 years (Table 2). Over half injected daily or several times a day. A total of 574 (97%) reported injecting in the past three months. Heroin was the primary injection drug for the majority (61%) of the participants, followed by amphetamines, which was reported by 28%. Injection of several different drugs was common. When looking at all injection drugs used (primary and other) over 80% reported heroin injection, 72% amphetamine injection, and 67% cocaine injection at some time in the past 3 months. Virtually all (89%) of the heroin injectors injected black tar heroin. Almost 90% had injected with others and over half had injected with 5 or more different injectors recently. More than half reported injecting with someone else's used syringes (receptive syringe sharing). However, only 11% injected with used syringes half the time or more. Sharing of equipment to prepare and split drugs was also common. Almost three-quarters reported sharing cookers, and two-thirds shared syringes to divide up drugs (backloading). About half of the DUIT participants had been in drug treatment at some point in their life, but very few had been in treatment in the past 3 months (Table 3). Eighty-three percent reported that they had used needle exchange in the past 3 months and 68% reported that needle exchange was their most common source of syringes (including secondary exchange, see Table 4). Over half had obtained syringes from pharmacies and 15% listed pharmacies as their most common source of syringes.

Sexual behaviors

Eighty-four percent reported having had sex in the past 3 months and over one-third reported three or more sex partners during that time period (Table 5). Over 90% of women and 74% of men reported sex with opposite-sex partners and 13% of the men and 24% of the women reported same-sex sex partners. Eight percent (n=26) of the men reported sex with both men and women; only one of these men was HIV seropositive. A little over one-quarter of the men and more than half of the women had only steady sex partners and 41% of the men and 33% of the women had both steady and casual sex partners. The majority (59% of men and 77% or women) reported unprotected vaginal sex and 23% of men and 21% of women reported unprotected anal sex.

Table 1: Sociodemographic characteristics of Drug Users Intervention Trial (DUIT), Seattle participants by age at enrollment, 2002-2004

Sociodemographic Characteristic	Total (n=589) %	Ages 15-24 years (n=337) %	Ages 25-30 years (n=252) %
Sex			
Male	68.6	61.4	78.2
Female	31.4	38.6	21.8
Race/Ethnicity			
White non-Hispanic	70.9	71.6	70.0
Black non-Hispanic	5.5	5.4	5.7
Hispanic	5.9	5.1	6.9
Other	17.7	18.0	17.4
Education			
≤ 11th grade	37.9	43.6	30.2
HS graduate or GED	37.4	38.3	36.1
Some college or technical training	24.8	18.1	33.7
Type of income past 6 months			
Jobs	36.5	35.3	38.0
Illegal sources	19.0	18.3	20.0
Other sources	44.5	46.4	42.0
Type of residence past 6 months			
Parent's place	11.1	13.1	8.4
Own place	21.2	17.6	25.9
With someone else/rented room	22.0	20.6	23.9
Shelter, street, car, aband. bldg	37.2	40.3	33.1
Jail, other	8.5	8.4	8.8
Homeless sometime in past 6 mos.	66.4	72.1	59.0
Incarcerated ever	79.6	76.0	84.5

Seroprevalence and health history

A total of 15 participants (all males) tested HIV seropositive (Table 6). HIV seroprevalence was 20% among MSM and 1.5% among non-MSM males. HIV seroprevalence was particularly high (30%) among MSM amphetamine injectors (Table 7). A little less than one-third of the participants tested seropositive for HCV, 20% tested seropositive for hepatitis B core antibody and 28% tested seropositive for hepatitis A. Male amphetamine injectors had much lower HCV seroprevalence (17%-19%) than male heroin injectors (41%-45%) regardless of MSM status. Prior serological testing for HIV and HCV was common (82% and 64%, respectively). Only 43% of those who tested HCV seropositive were aware of their status, while 73% of those who tested HIV seropositive knew their status. Almost half (including 57% of women) reported having been vaccinated for hepatitis B.

Comments

The young Seattle area injectors who participated in DUIT faced serious social issues such as unstable housing, homelessness, illegal sources of income, and high rates of incarceration. Risky injection practices including injection with used needles and sharing of injection equipment was common, although most of those who injected with used syringes only did so occasionally. Even so, the risk of exposure to HCV is high in an environment of high prevalence and all syringe and equipment sharing should be avoided. It is very encouraging that such a high percent of these young injectors used the needle exchange. The needle exchange offers a number of additional HIV and hepatitis prevention and other health services on site or by referral. The needle exchange also offers assistance with accessing drug treatment. It is also encouraging that over half had obtained syringes at pharmacies. PHSKC collaborates with over 100 local pharmacies to promote sale of syringes to IDU as a mechanism for preventing transmission of bloodborne infections. A 2003 survey found that 63% of pharmacists surveyed in Seattle-King County reported selling syringes to IDU and 65% were found to sell syringes during test buys.[6] Although many participants had been in drug treatment at some point in their life, few were currently in treatment or trying to get in. The waiting time for methadone vouchers varies from 3 to 18 months; there are currently about 500 persons on the waiting list. Also encouraging is the relatively high percent who reported hepatitis B vaccination, especially among women. On the other hand, the high rates of unprotected sex among these young injectors is concerning, particularly considering the high numbers of sex partners. Almost one-quarter of female injectors reported sex with other females, which is similar to findings from the KIWI Study of recently incarcerated injectors (1998-2002).[2]

Table 2: Drug use and drug use behaviors in the past 3 months among Drug Users Intervention Trial (DUIT), Seattle participants by age at enrollment, 2002-2004

Drug Use Behavior	Total (n=589) %	Ages 15-24 years (n=337) %	Ages 25-30 years (n=252) %
Age at first injection			
≤ 17	50.4	66.3	29.0
17-30	49.6	33.7	71.0
Years since first injection			
0-1	13.4	17.3	8.1
2-5	37.1	49.0	21.0
≥ 6	49.6	33.7	71.0
Injected in the past 3 months	**(n=574)**	**(n=327)**	**(n=247)**
Injection frequency			
Daily	53.3	56.3	49.4
Less than daily	46.7	43.7	50.6
Primary drug injected			
Heroin alone	60.6	60.1	61.3
Amphetamines alone or w/other drugs	28.1	29.8	25.8
Cocaine alone or w/other drugs	10.8	9.8	12.1
Any drug injected			
Heroin	81.6	78.9	85.2
Amphetamines	72.2	69.8	75.4
Cocaine	67.2	59.4	77.5
Number of injection partners			
0	10.5	8.8	12.8
1	9.4	9.4	9.5
2-4	26.7	27.8	25.2
≥5	53.4	54.1	52.5
Receptive needle sharing			
Never	51.2	51.7	50.6
Rarely	30.3	30.0	30.8
Less than half the time	7.0	8.9	4.5
Half the time or more	6.8	5.2	9.0
Always or almost always	4.4	4.0	4.9
Shared drug preparation equipment			
Cooker	74.1	74.8	73.3
Cotton	65.4	66.7	63.8
Rinse water	59.4	60.0	58.5
Backloaded	67.8	68.9	66.4

Table 3: Drug treatment history among Drug Users Intervention Trial (DUIT), Seattle participants by age at enrollment, 2002-2004

Drug Treatment History	Total (n=589) %	Ages 15-24 years (n=337) %	Ages 25-30 years (n=252) %
Drug treatment*			
Ever	49.5	42.2	59.1
Currently	4.3	3.6	5.2
Trying to get into treatment	3.6	3.0	4.4
Any type of drug treatment in the past 3 months			
Methadone maintenance	6.6	4.8	8.9
Drug-free outpatient	8.1	6.0	10.9
In-patient	7.9	5.4	11.3
Methadone detoxification	5.0	4.8	5.2
Detoxification (non-methadone)	4.8	4.2	5.7
12-step	10.6	8.7	13.1

* Not including 12-step programs like Narcotics Anonymous or Alcoholics Anonymous

Table 4: Source of new sterile syringes in the past 3 months among Drug Users Intervention Trial (DUIT), Seattle participants, 2002-2004

Source	Most common* (n=563) %	Any source* (n=564) %
Needle exchange (self)	58.8	83.0
Needle exchange (others)	8.7	44.7
Pharmacy	14.6	50.7
Friends, family, sex partner	9.2	36.5
Needle or drug dealer	7.6	42.0
Other	1.0	-

*563 and 564 of the 574 who injected in the past 3 months responded to these questions.

Table 5: Sexual orientation and sexual behaviors in the past 3 months among Drug Users Intervention Trial (DUIT), Seattle participants by gender, 2002-2004

Sexual Orientation/Behavior	Total (n=589) %	Males (n=404) %	Females (n=185) %
Number of sex partners			
0	15.9	20.9	5.0
1	27.9	23.0	38.3
2	18.0	17.3	19.4
≥ 3	38.3	38.8	37.2
Number of male sex partners			
0	62.9	87.4	9.9
1	15.9	3.9	42.0
2	7.0	2.1	17.7
≥ 3	14.2	6.7	30.4
Number of female sex partners			
0	42.1	26.5	76.4
1	18.1	21.7	10.4
2	16.1	20.2	7.1
≥ 3	23.7	31.8	6.0
Gender of sex partners			
Any males	NA	12.8	90.1
Any females	NA	73.6	24.4
Both males and females	NA	8.4	19.9
Type of sex partners			
Steady only	35.8	27.4	53.8
Casual/trade only	5.9	7.3	2.9
Both steady and casual/trade	38.2	40.6	33.0
Type of sex			
Vaginal sex	75.8	69.7	89.0
Anal sex	29.0	31.0	24.9
Any unprotected intercourse			
Unprotected vaginal intercourse	64.9	59.3	77.3
Unprotected anal intercourse	22.7	23.3	21.4

NA = Not applicable

Table 6: HIV and hepatitis A, B and C seroprevalence and health history among Drug Users Intervention Trial (DUIT), Seattle participants by gender, 2002-2004

Seroprevalence/Health History	Total (n=589) %	Male (n=404) %	Female (n=185) %
HIV seroprevalence	2.6	3.7	0.0
HCV seroprevalence	31.4	32.9	28.0
HBc seroprevalence	20.3	20.8	19.1
HAV seroprevalence	27.9	28.4	26.8
Prior serological testing			
HIV HCV	82.1 64.0	81.6 63.5	83.3 65.2
Prior vaccination			
HAV HBV	31.5 47.1	29.5 42.6	35.9 57.1

HAV = hepatitis A, HBc = hepatitis B core antibody. Presence of antibodies to HBc indicates a history of infection, presence of antibodies to HAV indicates history of infection or vaccination; most HAV or HBc seropositive people do not have current infection.

Table 7: HIV and hepatitis C seroprevalence by MSM status and primary injection drug among Drug Users Intervention Trial (DUIT), Seattle male participants, 2002-2004

MSM Status/Primary Injection Drug	N	HIV Seroprevalence %	HCV Seroprevalence %
MSM heroin injectors	20	10.0	45.0
MSM amphetamine injector	23	30.4	17.4
Non-MSM heroin injector	204	1.5	41.2
Non-MSM amphetamine injector	86	2.3	18.6

HIV seroprevalence was similar to that observed in other studies of Seattle-area IDU, including the very high seroprevalence in MSM amphetamine injectors.[2] Hepatitis C prevalence was somewhat lower than what has been seen in earlier studies of Seattle area injectors in this age group. The lower seroprevalence of HCV in amphetamine injectors is similar to results from the KIWI Study.[2] The relatively low HCV seroprevalence and the very high HIV seroprevalence in MSM amphetamine injectors indicate that HIV is most likely transmitted sexually in this group. Although HIV prevalence has remained low in other groups of local injectors, indicating separation from networks of MSM amphetamine injectors, the potential for HIV transmission exists.

We employed diverse recruitment strategies for DUIT, but the sample was not random and results may not be representative of the underlying population of young injectors. However, the key findings of DUIT were similar to results from previous local IDU surveys, and the sample size of 589 was relatively large for this limited age group. Results were based predominantly on self-reported data, which are subject to recall and social desirability biases.

Our findings among Seattle baseline DUIT participants certainly support the continued need to provide HIV and HCV screening and prevention programs, address social issues, and improve access to drug treatment locally. These results also demonstrate that young injectors who are practicing high-risk injection and sexual behaviors can be reached through needle exchange or correctional facilities, and that many have been in contact with prevention services as demonstrated by high HIV and HCV testing rates and relatively high HBV vaccination rates.

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Acknowledgements:
We greatly appreciate the efforts of everyone who worked on this project including staff at the PHSKC Laboratory and HIV/AIDS Epidemiology Program, and CDC. We are especially grateful to the young injectors who participated in the study.

• *Contributed by Hanne Thiede DVM, MPH, Jennifer Campbell, MSPH, Holly Hagan, PhD, MPH, and the Seattle-area DUIT Team.*

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HIV/AIDS-related knowledge, attitudes and behaviors of the general public: Results from the 2003 Washington State Knowledge, Attitudes and Beliefs Survey

The knowledge and attitudes of the general public regarding HIV and AIDS play a vital role in designing effective HIV/AIDS education programs and prevention campaigns.[1] Furthermore, public attitudes toward HIV/AIDS have a great impact on policies and legislative agenda relating to public health issues. The assumption is that well-informed individuals with positive attitudes toward HIV/AIDS prevention will be less likely to engage in HIV/AIDS-related risk behaviors,[2] and less likely to support policies that would restrict the freedoms of people with HIV/AIDS.[3]

In order to direct future plans to provide education and inform public opinion, as well as to assess the impact of previous prevention activities, the Washington State Department of Health periodically surveys the Washington State adult population regarding HIV/AIDS-related knowledge, attitudes, and beliefs (KAB). In addition to general knowledge, attitudes, and policy preference items, the KAB survey investigates support for injection drug use prevention programs, individual risky behavior practices and HIV/AIDS testing and counseling. This report presents selected findings from the 2003 HIV/AIDS KAB survey including some trend comparisons with prior KAB surveys conducted in 1995, 1998 and 2000.

Methods

The 2003 HIV/AIDS KAB was a population based random-digit-dial telephone survey of 1,223 Washington residents ages 18 and older. Self-reported confidential HIV/AIDS-related information and respondent demographics were collected from each respondent by trained interviewers using a standardized questionnaire. KAB used a stratified sampling design taking equal samples from King County, Other Western Washington counties, and Eastern Washington counties. The sample was drawn proportionate to county population size within each of these groups. Regions were defined by area codes, counties, and the Cascade mountain range which forms the state's east-west boundary.

After collection, the KAB data were adjusted to better represent the Washington State adult population. Given the regionally stratified equal quota sampling design, data from each region were weighted to reflect regional population projections. In addition, a post-stratification weighting component was added to adjust regional data to the gender and age distribution of each respective region. Findings reported from the KAB survey are weighted. A 95% confidence interval is included with most findings in order to show readers where the true value of each measure would fall, with 95% certainty, if all state residents had been surveyed.

Results

HIV/AIDS-related Knowledge

Approximately 42% (CI=38-45) of Washington State adult residents reported knowing a lot, 47% (CI=44-50) reported knowing some, and 11% (CI=10-14) indicated knowing little or nothing about HIV/AIDS. Just under half (49%, CI=46-52) of respondents indicated personally knowing a person with HIV/AIDS. Overall, 10% (CI=8-12) said they had attended an HIV/AIDS-related education presentation in 2002 or 2003. Those aged 18-24 years were significantly more likely to have recently seen an HIV/AIDS presentation (25%, CI=18-33), than were those 25 years old and greater (8%, CI=6-10) ($p<0.0001$). This may be due to younger residents being more likely to be in school.

Respondents were asked if there are drugs available to prevent pregnant mothers from passing HIV on to their infants. About half (47%, CI 44-50) correctly indicated "yes". Females were significantly more likely to know about such HIV medications (53%, CI=50-57) than were males (41%, CI=36-46). When controlling for age, females were over one and a half times more likely to answer correctly (OR= 1.69, CI=1.31-2.18). This question was also asked in 2000 with nearly identical results.

In 2003, items were added to assess resident familiarity with Washington State HIV reporting laws, as well as knowledge of anonymous HIV testing. Only 3% (CI=2-4) of respondents claimed being very familiar, 18% (CI=16-20) somewhat familiar, and 79% (CI=77-82) not familiar at all with HIV reporting laws. Respondents who knew a person with HIV/AIDS or had attended an HIV/AIDS education presentation in 2002 or 2003 were significantly more likely to be familiar with HIV reporting laws than were their counterparts. When controlling for attendance at HIV/AIDS educational activities, those knowing a person with HIV/AIDS were 1.9 (CI=1.4-2.6) times more likely to say they were somewhat or very familiar with reporting laws. When controlling for knowing a person with HIV/AIDS, those attending an HIV/AIDS presentation in 2002 or 2003 were 3.6 (CI=2.3-5.6) times more likely to say they were somewhat or very familiar with reporting laws.

When asked about anonymous testing, 30% (CI=27-33) correctly indicated that it was available in Washington State, 7% (CI=6-9) said it was not available, and

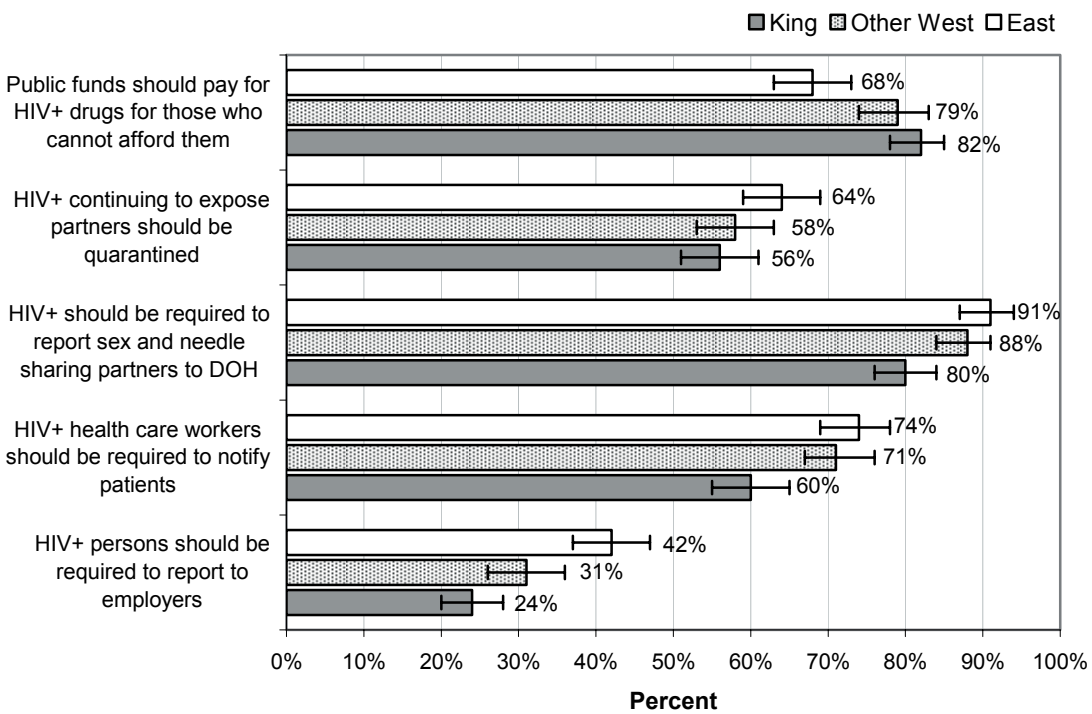
63% (CI=60-66) did not know. A higher proportion of Hispanic respondents indicated that anonymous testing is available (44%, CI=31-56), compared to non-Hispanics (29%, CI=26-32); however, due to small numbers, this finding was not statistically significant. Respondents who knew a person with HIV/AIDS or had attended an HIV/AIDS education presentation in 2002 or 2003 were more likely to know about anonymous testing. When controlling for attending an HIV/AIDS presentation, those knowing someone with HIV/AIDS were 2.1 (CI=1.6-2.7) times more likely to know about anonymous testing. When controlling for knowing a person with HIV/AIDS, those attending an HIV/AIDS presentation in 2002 or 2003 were 2.4 times more likely to know about anonymous testing.

Attitudes and Policy Preferences Toward Persons with HIV/AIDS

Washington State adult residents have moderately positive attitudes for support and acceptance of people with HIV/AIDS. Ninety-four percent (CI=93-96) indicated that they would see a friend just as often if they had HIV/AIDS. Figure 1 illustrates support for several policies relating to persons with HIV/AIDS, by region. There was a good deal of support for public funds paying for HIV drugs for those who cannot afford them (77%, CI=75-80). This proportion had not significantly changed since the question was first asked in 1998. Support for public funds in 2003 was significantly less in Eastern Washington (68%, CI=63-73), than in King County (82%, CI=78-85, p=0.0003) and Other Western Washington counties (79%, CI=74-83, p=0.0004).

Eighty-six percent (CI=84-88) of Washington State residents support requiring HIV-positive individuals to report sex and needle sharing partners to the Department of Health for partner notification. Support was significantly lower for this policy in King County (80%, CI=76-84), than in Eastern Washington (91%, CI=88-94, p=0.0004). Support for policies requiring HIV-infected persons to divulge their status was also generally higher in Eastern Washington than in Other Western Washington counties and King County. Overall, 68% (CI=66-71) think that health care workers with HIV/AIDS should be required to notify their patients. Residents in Eastern Washington were significantly more likely to support this (74%, CI=69-78) compared to King County (60%, CI=55-65, p=0.0004). Thirty-one percent (CI=28-34) of all residents agreed that HIV-positive persons should be required to report their condition to employers. Again, those in Eastern Washington indicated more support for this policy (42%, CI=37-47) than did those in King County (24%, CI=20-28, p<0.0001). Support for the above mentioned policies has not changed significantly since the 1995 KAB survey. Respondents were also asked if people infected with HIV who continue to expose partners should be quarantined. Just over half (58%, CI=55-62) agreed in 2003. This was down significantly from 72% in 1995 (p<0.0001).

Figure 1: HIV/AIDS-related policy preferences by region, Washington State 2003 Knowledge, Attitudes and Beliefs Survey



Support for Injection Drug User Prevention

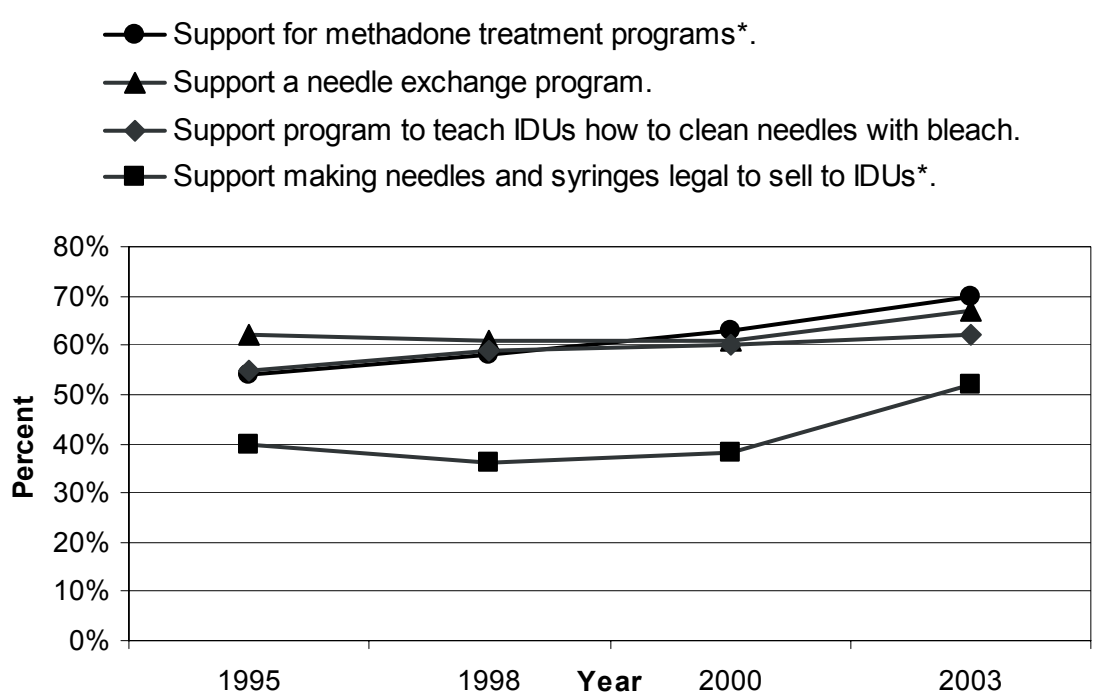
The KAB survey also asks Washington residents about support for several injection drug user (IDU) prevention strategies, including needle exchanges and methadone treatment, as well as teaching IDUs to clean needles with bleach, and making new needles and syringes legal to sell to IDUs. Methadone treatment programs received the most overall support, at 70% of respondents (CI=67-73), followed by needle exchange programs (67%, CI=64-70). Sixty-two percent (CI=59-65) indicated support for a program that would teach IDUs to clean needles with bleach, and 52% (CI=49-55) supported making needles and syringes legal to sell to IDUs. Support for all of these IDU prevention policies has increased since 1995 (see Figure 2). A significantly increasing proportion of residents supported methadone programs since 1995 (54% in 1995 vs. 70% in 2003, $p<0.0001$). Support has also risen significantly since 1995 for making needles and syringes legal to sell to IDUs (40% vs. 52%, $p<0.0001$). Backing of methadone treatment, needle exchange programs, and making needles or syringes legal to sell to IDUs did not vary significantly by region in 2003. However, King County residents were more likely to support teaching IDUs to clean their needles with bleach than were residents of Eastern Washington. In King County, 70% (CI=65-75) supported this compared to 57% (CI=52-62) in Eastern Washington.

Self-Reported Sex Risk and HIV Testing

According to KAB findings, when controlling for age and marital status, males were twice as likely as females to have more than one sex partner in the past 12 months (OR=2.1, CI=1.3-3.6). Thirty-two percent (CI=26-38) of all single sexually active adults (n=269) had more than one sex partner. Of the singles with one sex partner the last 12 months, 20% (CI=15-28) always used condoms during that 12 months, 25% (CI=19-33) used condoms sometimes, and 55% (CI=46-62) never used condoms. Singles with more than one sex partner the past 12 months were not any more likely to always use condoms (24%, CI=15-35). They were more likely to use condoms sometimes (53%, CI=41-65), and much less likely to never use condoms (23%, CI=15-34).

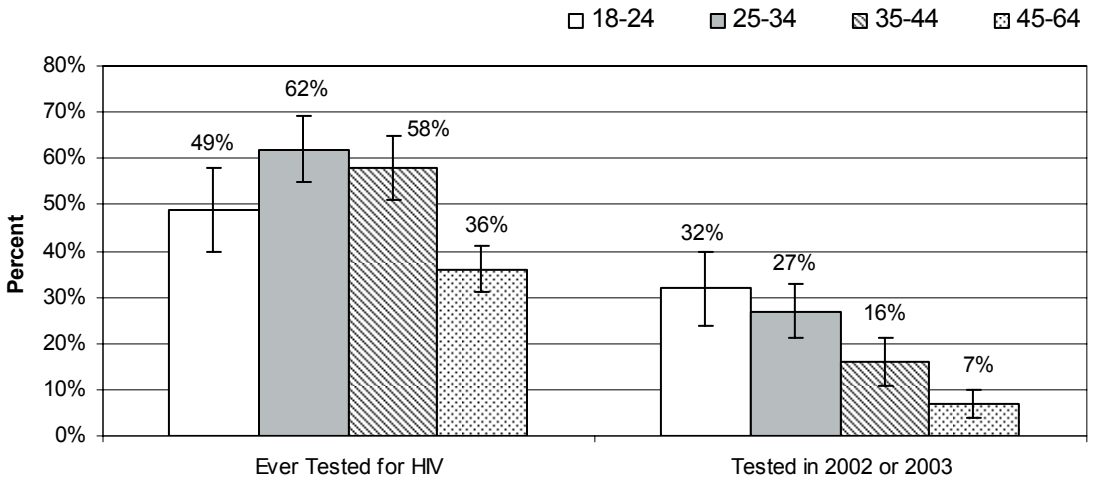
Figure 3 illustrates HIV testing in the general population by age. Approximately half of younger residents ages 18-24 have ever been tested (49%, CI=40-58); 32% (CI=24-42) tested in 2002 or 2003. Those ages 25-34 and 35-44 were more likely to have ever been tested, but a smaller proportion tested in 2002 or 2003 (27% CI=21-34 and 16% CI=11-22 respectively). Only 36% of those ages 45-64 indicate ever testing for HIV. When looking at higher risk groups it was found that recent testing rates were higher in those indicating more than one sex partner in the last 12 months; 47% (CI=36-58) tested in 2002 or 2003. However, only 24% (CI=16-34) of singles never using condoms, and 37% (CI=26-49) of singles using condoms sometimes were tested in 2002 or 2003.

Figure 2: Support for injection drug user prevention strategies, 1995-2003 Washington State Knowledge, Attitudes and Beliefs Survey



*Indicates significant increase over time.

Figure 1: HIV testing in the adult population, Washington State 2003 Knowledge, Attitudes and Beliefs Survey



Conclusions

Findings from the 2003 HIV/AIDS KAB survey indicate that a high proportion of Washington residents claim knowing a lot or some about HIV/AIDS (89%). However, only 21% say they are very or somewhat familiar with HIV reporting laws, and only 30% knew that anonymous testing is available in Washington State. Knowing someone with HIV/AIDS and attending an HIV/AIDS education presentation were associated with greater knowledge of HIV/AIDS including familiarity with reporting laws and anonymous testing. In 2003 about half of residents indicate knowing a person with HIV/AIDS. This proportion has not changed significantly since 1995. The percentage of the population having attended an HIV/AIDS presentation has also reached a plateau of just over 40% and has not changed since 1995. Residents over the age of 25 are in particular need of HIV/AIDS education outreach.

Washington residents express positive attitudes toward those with HIV/AIDS; 94% would not stop seeing a friend who has contracted HIV, and 77% think public funds should pay for the care of HIV-positive individuals who cannot afford it. A majority of respondents think that HIV-infected individuals should be required to report sex and needle sharing partners to the health department, and most also think that HIV-positive health care workers should be required to notify their patients of their status. However, a majority did not think HIV-infected people should have to report their status to employers. Residents of Eastern Washington were more likely to support measures requiring HIV-infected people to divulge their status, and less likely to support public funds for HIV care. Government officials should also be aware of increasing support for harm reduction programs for injection drug users. Support has increased the most for methadone treatment programs and making new needles or syringes legal to sell to IDUs.

Approximately half of the Washington State adults ages 18-64 have ever been tested for HIV; 17% tested in 2002 or 2003. Recent testing was higher among those with more than one sex partner in the past 12 months (47%), although more than half had not tested recently. Furthermore, only 24% of singles never using condoms, and 37% of those using condoms sometimes, tested recently. The promotion of HIV prevention through condom use and regular testing should be continued and increased for these higher risk groups.

Because it was conducted by telephone, the KAB survey has limitations that may result in selection and information bias. Although the Census Bureau estimates that nearly 98% of all U.S. households have telephones, segments of the population such as the homeless are not well represented. Furthermore, the information collected by the KAB is self-reported and subject to recall and exaggeration biases. Some respondents may also provide inaccurate answers that are more socially or politically acceptable. The extent of these biases is unknown.

• *Contributed by Todd E. Rime, MA*

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HIV incidence among anonymous and confidential testers at Public Health - Seattle & King County testing sites

Introduction

HIV incidence estimates are important to public health officials and other planners who must allocate limited HIV prevention resources – prevention efforts may be most effective when applied to populations where incidence is highest or is increasing. Measuring HIV incidence is not a straightforward task because the number of new HIV diagnoses does not always represent the number of new HIV infections. Several reasons for this include that people may have long-standing infections at the time they are tested, and that many individuals who are HIV-infected have not yet been tested. Public Health-Seattle & King County (PHSKC) is conducting two activities to measure HIV incidence.

Initially sponsored by the CDC, the HIV Incidence Study (HIVIS) is an ongoing project implemented at PHSKC in 1998 to estimate the number of newly transmitted HIV infections per year in King County. New HIV infection can be determined on a single blood specimen by taking advantage of antibody levels being generally lower very early in infection relative to later in infection. This method of measuring HIV incidence is the serological testing algorithm for recent HIV seroconversion (STARHS). Among people who test as HIV-infected, leftover serum from the HIV diagnostic specimen is tested with a special assay, the less-sensitive enzyme-linked immunosorbent assay (LS-EIA), which detects HIV-specific antibody. If the antibody concentration is below a predetermined threshold, the assay is considered to have a "low" result, indicating HIV infection may have occurred recently. The proportion of new HIV-positive diagnoses with "low" results -- implying recent infection -- is part of the STARHS mathematical equation used to calculate HIV incidence.

In 2004, HIV Incidence Surveillance (HIS) was implemented. HIS is also a CDC-sponsored national activity that uses the LS-EIA and the STARHS algorithm to estimate HIV incidence. HIS is intended to become part of core HIV Surveillance and therefore only confidentially tested individuals are eligible.

Washington State allows both confidential and anonymous HIV testing. A person's HIV risk behaviors or other factors may influence the choice of confidential or anonymous registration for an HIV test, and therefore HIV incidence may differ by registration type. In this analysis, we compared HIV incidence among confidential and anonymous testers. If HIV incidence differs by registration type, then it is important to address the impact these differences might have in a national system, like HIS, which excludes anonymous testers.

Methods

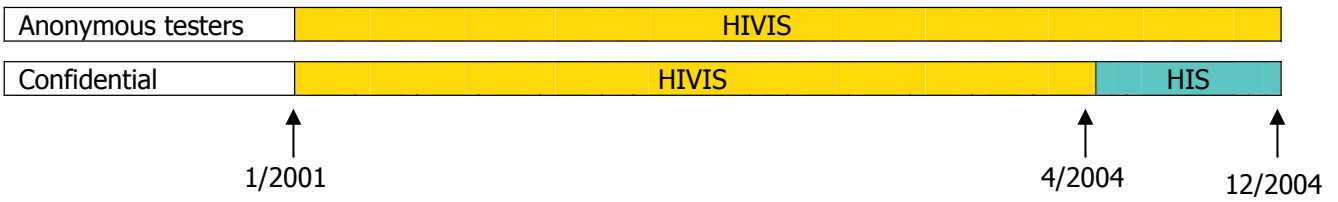
This analysis was limited to tests that took place between January 1, 2001 and December 31, 2004 at participating PHSKC testing sites, including the HIV AIDS Program (HAP) freestanding and outreach sites, the STD clinic, the TB clinic, and community health clinics. People having an HIV test because of participation in a study and those receiving HIV testing at the King County jails were not included in this analysis.

All confidential and anonymous registrants testing positive for HIV until April 2004 were part of the HIVIS protocol (Figure 1). Individuals were eligible for HIVIS if they had a positive serum test, were age 14 years or older, had their HIV test at a participating testing site, and were not already tested with the LS-EIA. In April 2004, HIS was implemented, and from that point on, a person's registration type determined for which activity they would be eligible. Anonymous testers continued to be enrolled in HIVIS. Confidential testers were screened for HIS, which has slightly more limited inclusion criteria than HIVIS. To be eligible for HIS, a person must have a positive serum test, be age 14 or older, confidentially tested, not already reported to the HIV/AIDS Reporting System (HARS), not already enrolled in HIS, and not be tested because of a court order.

To create consistent data across the two study periods, we applied HIS eligibility criteria to the records of all confidential HIVIS registrants with positive HIV test results. HIVIS enrollees who had already been reported to HARS before their first eligible positive confidential HIV test were excluded from the analysis. There were 202 positive confidential tests in HIVIS between January 1, 2001 and April 18, 2004 (not including repeat confirmatory tests) that were included in HIVIS. Twenty of these records were excluded from further analysis because they matched HARS (by name, date of birth, sex, race/ethnicity, and when available, address and last four digits of SSN), and had already been reported to HARS at the time of the HIV test that was part of HIVIS, and were excluded from the analysis. An additional 28 confidential positives after April 18, 2004 were added from HIS. The final analysis dataset included 210 confidential positives, and 197 positive anonymous tests (all from HIVIS) between January 1, 2001 and December 31, 2004.

To eliminate duplicates, repeated positive tests were identified if an individual had multiple HIV tests using the same clinic chart number; the first positive was included and subsequent positives were excluded from

Figure 1: Periods of HIV Incidence Study (HIVIS) and HIV Incidence Surveillance (HIS) implementation by client registration type, Public Health - Seattle & King County HIV testing sites 2001-2004



the analysis. One person was excluded due to having a missing registration type (this person had a negative HIV test). If a person tested HIV negative (or negative and positive) more than once during in a given year, they contributed just one result for that year to the incidence analysis. The first positive or most recent negative tests were used in these instances.

Under the HIVIS protocol, consent for STARHS was solicited either at the pre- or the post-test counseling session from both anonymous and confidential testers. Beginning April 2004, anonymous testers remained eligible for HIVIS and continued to consent for STARHS either at pre- or post-test. The LS-EIA was performed on their remnant diagnostic sera only if the individual consented, with the exception of 10 specimens in 2001 that were stripped of identifiers and then tested with the LS-EIA. All confidential testers who were eligible for HIS had a portion of their leftover diagnostic specimen stripped of identifiers, and tested with the LS-EIA. The STARHS formula for estimating HIV incidence (Equation 1) adjusts for the population of HIV positive individuals not tested with the LS-EIA (those who refused or were not asked for consent) by assuming that the proportion who would have had "low" LS-EIA results is the same as among those individuals who were tested with the LS-EIA.

Results

We examined the demographics and testing behavior of confidential and anonymous HIV testers (Table 1). Because an individual may have tested many times between 2001 and 2004 and his/her registration type and other characteristics may have differed over time, we included the disposition of the person either at the time of his/her first positive HIV test, or if the person did not have a positive test, at his/her last negative HIV test. Relative to confidential registrants, anonymous registrants were more likely to be male (76% vs. 61%), and MSM (42% vs. 13%). Confidential testers were more likely than anonymous testers to be young (35% vs. 20% under age 25 years). Anonymous testers were more likely to have had their test at a HAP Counseling & Testing clinic site (51%) or through outreach testing (32%), while confidential testers were more likely to have been seen at the STD clinic (65%) or a community health clinic (25%).

Most (79%) of the 40,624 tests included in the annual incidence analysis were among patients who registered confidentially. Anonymous testers had a greater proportion of HIV positive results than confidential testers during every year (Table 2). In aggregate, 2.3% of the anonymous testers had positive HIV test results compared to 0.7% of the confidential testers.

Equation 1: Formula to estimate annual HIV incidence

$$\%\ \text{per year} = \frac{(\text{N recent seroconverters})(100)}{(\text{N recent seroconverters} + \text{N HIV negatives})} \times \frac{365}{\text{time}}$$

N recent seroconverters = $\left[\frac{\#\ \text{with "low" LS-EIA result}}{\#\ \text{tested with STARHS}} \times \#\ \text{not tested with STARHS}\right] + \#$ with "low" LS-EIA result

N HIV negatives = # of persons testing HIV negative

time = the mean time in days between the production of sufficient antibodies to register as positive on the standard EIA and production of sufficient antibodies to register as positive on the LS-EIA (170 days for the Organon-Teknika EIA used by the PHSKC laboratory)

Table 1: Characteristics of testers at their first positive HIV test or at their last negative HIV test, by registration type, Public Health - Seattle & King County HIV testing sites 2001-2004

Characteristic	Anonymous N=7,621 (%)	Confidential N=27,532 (%)	χ^2 p-value
Sex			
Male	(76)	(61)	ref
Female	(24)	(39)	<0.01
Unknown	(<1)	(<1)	n/a
Age			
14-24 years	(20)	(35)	<0.01
25-39 years	(48)	(44)	ref
40+ years	(32)	(20)	<0.01
Missing	(<1)	(<1)	n/a
Risk			
IDU-MSM	(5)	(1)	<0.01
MSM	(42)	(13)	<0.01
IDU	(5)	(5)	<0.01
Other	(47)	(81)	ref
Race			
White	(69)	(59)	ref
Black	(9)	(17)	<0.01
Hispanic	(7)	(9)	<0.01
Other	(12)	(14)	<0.01
Missing	(3)	(2)	n/a
Test site			
HAP clinic	(51)	(7)	ref
STD clinic	(4)	(65)	<0.01
Community clinic	(13)	(25)	<0.01
Outreach	(32)	(3)	<0.01
TB clinic	(<1)	(1)	n/a
Total tests[1]			
1	(86)	(83)	ref
2-3	(12)	(14)	<0.01
≥4	(2)	(2)	0.27
Year			
2001	(22)	(20)	ref
2002	(23)	(22)	<0.01
2003	(26)	(26)	<0.01
2004	(28)	(32)	<0.01

1. Includes all negative tests and first positive test at participating testing sites between 2001 and 2004

Table 2: Positive HIV results by registration type and year, Public Health - Seattle & King County HIV testing sites 2001-2004

Registration Type	2001		2002		2003		2004		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Total anonymous tests	2,009	(100)	2,158	(100)	2,275	(100)	2,157	(100)	8,599	(100)
Anonymous HIV+	39	(1.9)	43	(2.0)	57	(2.5)	58	(2.7)	197	(2.3)
Total confidential tests	7,067	(100)	7,781	(100)	8,455	(100)	8,722	(100)	32,025	(100)
Confidential HIV+	49	(0.7)	54	(0.7)	62	(0.7)	45	(0.5)	210	(0.7)

Except for the confidential testers who were part of the HIS protocol in 2004, HIV counseling and testing staff attempted to approach all individuals who tested HIV positive for STARHS consent. Most of the anonymous (93%) and confidential (90%) registrants who tested HIV positive were solicited for participation in STARHS. Among those persons who were approached for STARHS consent, 96% of the anonymous testers and 85% of the confidential testers agreed to have a leftover aliquot of their diagnostic HIV specimen tested with the LS-EIA. While the proportion of HIV positive individuals with "low" LS-EIA results (indicating probable recent infection) tended to fluctuate from year to year, overall, approximately one-third of both anonymous and confidential testers had "low" LS-EIA results (Table 3).

HIV incidence among anonymous registrants was consistently higher than among confidential testers (Table 4, Figure 2). HIV incidence among anonymous testers ranged from 1.4 infections per 100 persons/ year in 2001 to 2.6 infections per 100 persons/year in 2004. Although the 95% confidence intervals overlap, there appears to be an increasing trend over time. HIV incidence among confidential testers has remained relatively constant between 2001 and 2004 at about 0.4 infections per 100 persons per year.

Table 3: LS-EIA results by registration type and year, Public Health - Seattle & King County HIV testing sites 2001-2004

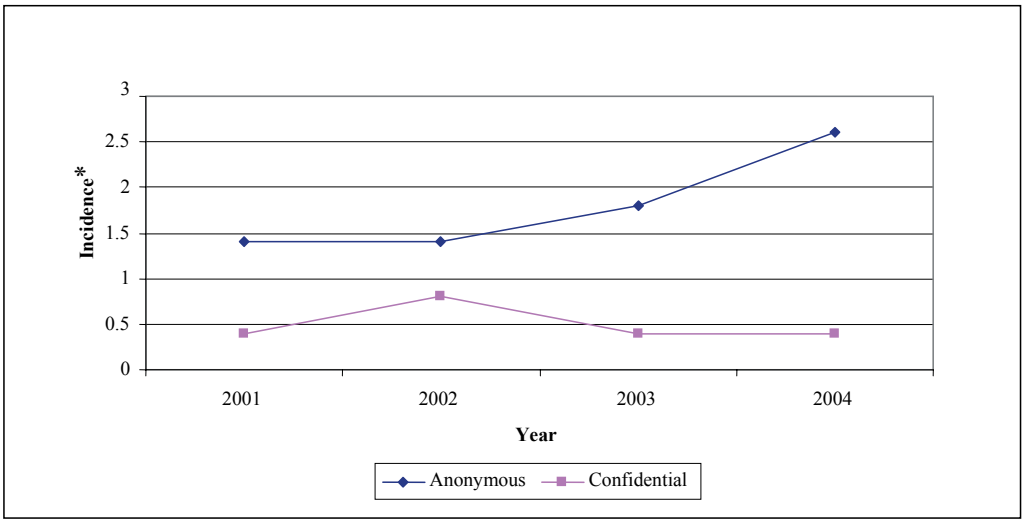
Registration Type/LS-EIA Results	2001		2002		2003		2004		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Anonymous w/LS-EIA results	35	(100)	43	(100)	53	(100)	47	(100)	178	(100)
Anonymous w/ "recent" infection	12	(34)	14	(33)	17	(32)	21	(45)	64	(36)
Confidential w/LS-EIA results	32	(100)	49	(100)	51	(100)	33	(100)	165	(100)
Confidential w/ "recent" infection	8	(25)	25	(51)	13	(25)	12	(36)	58	(35)

Table 4: Annual HIV incidence by registration type and year, Public Health - Seattle & King County HIV testing sites 2001-2004

Year	Anonymous		Confidential	
	Incidence*	95% CI	Incidence*	95% CI
2001	1.4	(0.6, 3.4)	0.4	(0.1, 0.9)
2002	1.4	(0.6, 3.3)	0.8	(0.4, 1.5)
2003	1.8	(0.8, 3.8)	0.4	(0.2, 0.9)
2004	2.6	(1.3, 5.2)	0.4	(0.2, 0.9)

*Number of new infections per 100 persons tested per year

Figure 2: HIV incidence among anonymous and confidential registrants, Public Health - Seattle & King County HIV testing sites 2001-2004



*Number of new infections per 100 persons tested per year

Discussion

HIV incidence differs by registration type. This is consistent with the distribution of HIV testing sites. One would expect that people who test at a HAP Counseling & Testing clinic or in an outreach setting like at a bathhouse, as most of the anonymous testers did, would be at greater risk of HIV acquisition than people who test at a community health clinic or an STD clinic, where most of the confidential testers sought testing. Also, a greater proportion of the anonymous testers reported that they were MSM, and in King County, HIV transmission remains highest among MSM relative to other risk groups.

Although STARHS is advantageous in that it allows for estimating HIV incidence from a single blood specimen per person tested (other incidence estimation methods require repeat testing), several limitations exist. First, a person who regularly engages in risky behavior may test frequently for HIV, and individuals who test frequently are more likely to be detected during the window period immediately after seroconversion when a "low" LS-EIA result would be detected. It is this "low" LS-EIA that indicates a recent, or incident, HIV infection. Similarly, reasons for testing may influence the probability people will be detected during the window period during which they would have a "low" LS-EIA result. If people seek an HIV test because of recent exposures to HIV, they will be more likely to be found to have a recent infection compared to a person who is testing at a routine family planning visit or STD check. Also, FDA regulations require that consent be obtained from the subjects before the LS-EIA is run on leftover diagnostic specimen (unless the specimen is blinded). Inevitably, not all persons are reached for consent, and those who are reached may decline. The STARHS algorithm assumes that the proportion of recent infections projected from sera not tested with the LS-EIA is the same as the proportion identified from sera tested with the LS-EIA. This assumption of non-differential distribution of LS-EIA results among consenters and non-consenters may be incorrect. In this analysis, we noted that slightly fewer confidential testers were approached for consent, and of those who were solicited, fewer confidential testers consented to the LS-EIA.

In this analysis we used clinic chart numbers to identify individual testers. We were able to exclude repeated or confirmatory positive tests if a person had more than one positive test with the same chart number. If a person had more than one negative test in a given year, we counted that person as having only one negative test for the year to avoid falsely inflating the denominator. However, anonymous testers may provide different codes each time they test and therefore our ability to de-duplicate anonymous testers is limited. Only those who provide the same identification at each test will be recognized as repeated testers and excluded when appropriate from the analysis. Anonymous testers who test positive using different codes will artificially inflate the total number of individuals testing positive in a year which may result in an overestimate of HIV incidence. Conversely, anonymous testers who test negative using different codes will inflate the total number of individuals testing negative which may result in an underestimate of HIV incidence.

Anonymously- and confidentially-registered HIV testing populations at PHSKC testing sites differ both in their demographic characteristics and in their HIV incidence rates. A national effort to monitor HIV incidence focused on confidential testers, HIS, is now underway. This analysis demonstrates that HIV incidence estimates gathered from confidential testers may not be generalizable to the testing population at large.

• *Contributed by Christina Lynch, MPH and Gary Goldbaum, MD, MPH*

AIDS Mental Health Access Project

The AIDS Mental Health Access Project (MHAP) provides persons living with HIV/AIDS in Seattle/King County with referrals to professional and sexual orientation sensitive psychotherapists. The project has been in operation for over 10 years and is funded by the Ryan White CARE Act. CARE Act funds are administered locally through Public Health -- Seattle & King County. Among the services provided are:

- Confidential assessment and referral
- Culturally appropriate mental health services
- Spanish speaking therapists
- Low fee and sliding scale counseling and psychotherapy

Through Ryan White Funding, MHAP can subsidize mental health services for clients who are infected with HIV, live in King County, and live at or below 200% of poverty level as determined by the Federal Government (currently set at $18,624 per year for an individual).

A final important consideration in referring an individual to MHAP is that the individual needs can be met by a private practitioner. Clients who are actively at risk of harming themselves or others or are experiencing chronic mental health needs such as psychoses or acute personality or bipolar disorders would be better referred either to their HIV/AIDS case-manager or to a community mental health agency where they can receive a broader and consolidated continuum of mental health care.

Data from the local Adult/adolescent Spectrum of HIV-related Diseases project indicate mental illness is an extremely common co-morbidity with HIV and AIDS. Between 1990 and mid year 2004, 4,639 individuals had been followed by ASD for an average of 3.6 years each. Among those individuals who had been followed in the past two years, over half (58%) had been diagnosed with depression. In addition, a growing body of research indicates that psychotherapeutic issues, particularly depression, stress, and anxiety, may have a negative impact on the functioning of the immune system and on treatment adherence.

Persons with HIV/AIDS and providers interested in mental health services or information may contact Craig Matsu-Pissot, Ph.D., by telephone at (206) 731-5171 or via email at craigmp@u.washington.edu.

• *Contributed by Craig Matsu-Pissot, PhD*

Seattle HIV Vaccine Trials Unit update

The Seattle HIV Vaccine Trials Unit will be participating in a new collaborative Phase II proof-of-concept study using one of Merck's investigational HIV/AIDS vaccine candidates. The trial is known as a proof-of-concept study because it enables researchers to test the concept that the vaccine candidate prevents HIV infection, or results in lower HIV levels in the blood of those who become infected with HIV. If the concept is proven this information will guide future research. The Seattle site will seek to enroll approximately 50 male volunteers aged 18 to 45 of diverse racial groups who are at high risk for contracting HIV. For more information contact the Seattle HIV Vaccine Trials Unit at 206-667-2300.

• *Contributed by Gary Chovnick, MPH*

University of Washington Adult AIDS Clinical Trials Unit report: Research update

The University of Washington (UW) AIDS Clinical Trials Unit (ACTU), which is part of the national Adult AIDS Clinical Trials Group (AACTG), has just completed its 18th year of conducting HIV clinical research. The AACTG conducts trials about the treatment of HIV and the opportunistic infections associated with HIV. In the past few years, the AACTG has expanded into the treatment of hepatitis B and C infection in people infected with HIV, as well as research into the metabolic complications of HIV and its treatment, including cardiovascular, lipid, and bone studies.

While there are now over 20 FDA-approved drugs to treat HIV, there remains a great need for new drugs to treat drug-resistant HIV. Most of the currently-approved drugs inhibit two viral enzymes, reverse transcriptase and protease. One drug, enfuvirtide (Fuzeon®), works by a different mechanism and inhibits viral entry into the cell. However it must be injected under the skin twice a day. The AACTG and UW ACTU are investigating other compounds which also target viral entry, but can be taken orally.

One of these compounds is targeting a potential new viral protein target. Viral protein R (Vpr) is one of the HIV regulatory proteins that exist in significant amounts in the blood of HIV-infected people. (The other HIV regulatory proteins are Nef, Rev, Tat, Vif, and Vpu.) Once HIV enters the cell, it copies its genetic information, which is in the form of RNA, into DNA, using its reverse transcriptase enzyme. The HIV DNA is then moved into the host cell's nucleus and becomes part of the host cell's own DNA. Vpr assists with the movement of the HIV DNA into the cell's nucleus. It was discovered that the drug mifepristone blocks this function of Vpr in the test tube. Mifepristone is currently approved by the FDA for the termination of pregnancy; it was formerly known as RU-486. Mifepristone inhibits HIV replication by blocking a host cellular receptor (glucocorticoid receptor), not by directly inhibiting the virus. Thus, there may be a reduced chance for HIV mutation and resistance developing to this drug. The UW ACTU is one of 8 sites around the country that is testing the effectiveness and safety of mifepristone to treat people with HIV.

This study is the first one that will give mifepristone to people with HIV infection. Mifepristone has been taken by people for up to a year in studies of cancer and endometriosis, in the same doses used in this AACTG study. It has been fairly well tolerated. The current study, called A5200, is a randomized, placebo-controlled study of three dosages of oral mifepristone (75, 150, and 225 mg), taken once a day, for 28 days. The study goals are to determine anti-HIV activity and safety of mifepristone. Three out of four people will receive one of the three doses of mifepristone, and one quarter of participants will receive a matching placebo. HIV-infected men and women, 18 years or older, with CD4+ T-cell counts ≥350/mm3, and HIV-1 RNA (viral load) ≥2,000 copies/mL, who have not received antiretroviral therapy (ART) within the 16 weeks prior to entry are eligible for this study. Both people who have never been on ART or who have not been on ART for the past 16 weeks are eligible to participate in this study.

For more information about this or other ACTU studies, call (206) 731-3184, and ask for Lori or Margot for an appointment or additional information, or visit our website: http://depts.washington.edu/actu.

• *Contributed by Jeffrey Schouten, MD*

The UW ACTU studies in the following tables are seeking volunteers. A key to abbreviations used is at the end. 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.

Antiretroviral Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• CD4 ≥ 350 • HIV RNA ≥2000 • Not currently on any ARV's • No ARV therapy for at least 16 weeks and not planning to start in next 60 days • No active Hep B or C	**(Study # 5200)** The purpose of this study is to evaluate the anti-HIV activity and tolerability of mifepristone (also known as Mifeprex or RU-486)	Mifepristone 75mg, 150mg, **OR** 225mg **vs** Placebo The use of mifepristone in this study is experimental.
• On current ARV regimen ≥ 4 weeks • HIV RNA >1,000 prior to starting 1st ARV regimen • Current HIV RNA <50 • Suppressed HIV RNA <500 for last 2 years • CD4 >500 • CD4 never <300 • Willingness to stop ARV's for 16 weeks after vaccine is given	**(Study # 5197)** To see if **MRK Ad5 HIV-1 Gag vaccine** is able to lower viral load levels after stopping ARV's for 16 weeks ***This study has 4 steps*** **Step 1**: Immunization with vaccine **Step II**: ARV's will be stopped for 16 weeks **Step III**: Continue ARV interruption or restart ARV's **Step IV**: Long-term safety follow-up	MRK Ad5 HIV-1 Gag vaccine Or MRK Ad5 HIV-1 Gag vaccine **placebo** **Vaccine/placebo given by injection into upper arm at week 0, 4, and 26**
• Men and women 18 yrs of age or older • On first anti-HIV treatment for at least 48 weeks • Current HIV RNA < 50 • HIV RNA < 50 for 48 weeks prior to screening visit • CD4 count >250 • No current or prior use of Efavirenz, Nevirapine, or Delaviridine • No active hepatitis B	**(Study # 5201)** **Atazanavir/Ritonavir alone as antiretroviral therapy** To see if taking atazanavir (Reyataz), a protease inhibitor, combined with a low amount of ritonavir will control HIV infection without using other HIV drugs. **The use of atazanavir/ritonavir as the only treatment for HIV is investigational.**	Atazanavir 300mg one time a day Ritonavir 100mg one time a day * Atazanavir and ritonavir will be provided by the study.

Antiretroviral Rescue Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• HIV RNA ≥5000 • Current ARV regimen must contain RTV for ≥ 8 weeks • Failure of ≥ one other antiretroviral regimen containing ≥3 drugs • Detectable hep B surface antigen • No history of seizures	**(Study # 5211)** To evaluate the safety and effectiveness of three different dose levels of **SCH 417690** (an investigational medication to treat HIV-1), in HIV-infected individuals who are failing their current antiretroviral regimen (current regimen must contain ritonavir).	Randomized to receive one of three SCH 417690 doses: 5 mg, 10 mg, or 15 mg or placebo For the first 14 days, subjects will stay on their current failing regimen with the SCH 417690 or placebo added on. After 14 days, can change background medications to an optimized regimen, which must contain ritonavir (not provided).
• HIV Positive • HIV RNA ≥ 2,000 • CD4 Tcells ≥ 50 • On stable HAART for 30 days • Use of at least 2 NRTIs, 1 NNRTI, and 2 PIs (past or current) • ≥ 18 years of age • Men & non-pregnant women	**(Study # 5165)** To see if diaminopurine dioxolane **(DAPD or amdoxovir)** is safe and decreases HIV viral load when added to other antiretrovirals, and to see if adding mycophenolate mofetil (MMF) to DADP is useful	Arm A: DAPD 500mg BID + MMF Placebo BID Arm B: DAPD 500mg BID + MMF 500mg BID
• Failure of current ARV regimen • Failure of at least one PI containing regimen • HIV RNA ≥ 1000 • Planning to start a PI containing salvage regimen	**(Study # 5146)** To learn if monitoring drug levels, *therapeutic drug monitoring (TDM)*, is useful in lowering viral load by increasing doses of PI's based on *Normalized Inhibitory Quotient (NIQ)*	No medications provided Doses of PI's may be increased

Complications of HIV and Other Conditions		
Neuropathy		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• Peripheral neuropathy related to either d4T, ddI, or ddC • Current regimen must contain d4T, ddI, or ddC • Must be on current regimen for ≥ 8 weeks • HIV RNA < 10,000 • Not pregnant	**(Study # 5157)** To see if acetyl-L-carnitine (ALC) reduces neuropathy symptoms in patients taking d4T, ddI, or ddC. This study will also assess the safety and tolerability of this investigational treatment for peripheral neuropathy	**Day 1-7** Acetyl-L-carnitine (ALC) 500mg (1 tablet) twice a day **Day 8-14** ALC 1000mg (2 tablets) twice a day **Day 15-Week 24** ALC 1500mg (3 tablets) or maximum tolerated dose twice a day
Other Studies		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• Stable ARV therapy ≥ 12 weeks • CD4 ≥100 • RNA≤ 5000 • ≥ 25 years • No current or prior treatment for osteoporosis within last 12 months • No hx of esophagitis, Paget's dz., Vit. D deficiency, Hep C	**(Study # 5163)** To find out if alendronate, plus calcium and vitamin D, is an effective way to treat bone mass density (BMD) loss in HIV-infected individuals. The study will also look at the safety and tolerance of alendronate.	Arm 1: Alendronate 70 mg PO once Weekly Calcium carbonate 500 mg/ Vitamin D 200 IU PO BID Arm 2: Placebo for alendronate PO once weekly. Calcium carbonate 500 mg/ Vitamin D 200 IU PO BID
• Female ≥13 years • Pregnant (will enter study between 22 & 30 weeks of pregnancy • Planning to receive ARV's ≥8 weeks before delivery • Not planning to breastfeed	**(Study # 5150)** Sometimes pregnant women have an increase in their viral load after delivery. This study will try to find out why and how often this happens.	No treatment Observation only
• HIV RNA available within the last 90 days • No active pulmonary disease • No use of any inhaled pulmonary medication • Age >18 years	**(Study # 079)** To see if alveolar macrophages is a reservoir for HIV	No study drug or treatment An induced sputum sample will be collected at entry. There will be an optional second visit for an induced sputum for subjects with a VL >5000
• No active or chronic heart or lung disease • No cigarette smoking in last 90 days • Not pregnant • No use of inhaled nasal or lung medication • No respiratory infection or bronchitis within 3 weeks	**(Study # 080)** To see if alveolar macrophages is a reservoir for HIV	No study drug or treatment The macrophage cells will be collected by a bronchoalveolar lavage procedure (BAL) in the pulmonary lab ***Note: this study is open to HIV negative subjects also – see description below under "Studies for HIV Negative Participants" for additional eligibility criteria**

Studies for HIV 'Negative' Participants		
Eligibility	**Study Purpose**	**Study Drug or Treatment**
• HIV negative • No chronic heart or lung problems • Able to understand English • Not pregnant	**(Study # 084)** The purpose of this study is to learn more about how HIV infects cells.	No treatment The subject will undergo leukapheresis at the General Clinical Research Center at UWMC
• HIV negative • Not taking any prescription medications on a daily basis • No active or chronic heart or lung disease • No cigarette smoking in last 90 days • Not pregnant • No use of inhaled nasal or lung medication • No respiratory infection or bronchitis within 3 weeks	**(Study # 080)** To see if alveolar macrophages is a reservoir for HIV	No study drug or treatment The macrophage cells will be collected by a bronchoalveolar lavage procedure (BAL) in the pulmonary lab ***Note: this study is open to HIV positive subjects also – see description above under "Other Studies"**

Visit our new website at http://depts.washington.edu/actu and find out about our latest studies, meet our staff, and find out about our outreach and ***Positivamente Latino*** programs. You can send your questions, comments, and suggestions to us via email at actu@u.washington.edu. Providers and potential enrollees can call the ACTU at 206.731.3184 and ask for Lori or Margot for appointments or additional information.

Key to Terms:

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

> : greater than < : less than ≥ : greater than or equal to + : positive