hiv/aids

1st Half '00

epidemiology report

Washington State ❍ Seattle & King County

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

Summary Tables

- Table 1. AIDS cases, deaths, and persons living with AIDS – KC, OC, WA, US 4
- Table 2. Cumulative AIDS cases and deaths by resident county – WA 5
- Table 3. Demographics of cumulative AIDS cases – KC, OC, WA, US 6
- Table 4A/B. AIDS cases by gender, race and exposure category – KC, WA. 7
- Table 5. AIDS cases by gender and age at diagnosis – KC, WA 8
- Table 6. AIDS cases, deaths, and case-fatality rates by year – KC, WA 8
- Table 7A/B/C. AIDS cases by HIV exposure and year of diagnosis – KC, OC, WA 9
- Table 8A/B/C. AIDS cases by age/gender and year of diagnosis – KC, OC, WA 10
- Table 9. Deaths of reported AIDS cases by year of death – KC, OC, WA 10

HIV/AIDS Epidemiology and Surveillance News

- AIDS Cases and Rates by Metropolitan Area and Age Group through 12/99 - US 11
- AIDS Cases and Rates by State and Age Group through 12/99 - US 13
- Adult/adolescent Male and Female AIDS Rates for 1999 - US 14
- HIV Cases by State and Age Group through 12/99 - US 15
- Adult/adolescent Male and Female HIV and AIDS Case Counts for 1999 - US 16
- Epidemiological Profile of AIDS in WA Residents Living Outside King County 17
- Annual Review of the Epidemiology of AIDS in King County 23
- Geographical Distribution of AIDS in King County 31
- Home Collection HIV Testing in Washington State 33
- HIV Prevalence, Incidence, and Risk Behaviors among Drug Users Entering Treatment in King County, 1988-1999 38
- HIV Prevalence, Incidence and Risk Behaviors among Seattle-King County STD Clinic Patients, 1988-1999 41
- The Seattle Area Young Men's Survey: Phase 2 results 49
- New Questionnaire for the SHAS Interview Project 56

HIV/AIDS Program Report: The 2000 HIV/AIDS Care and Prevention Collaboration Project 58
Adult AIDS Clinical Trials Unit Report: Opportunistic infections still occur 63
Pediatric AIDS Clinical Trials Unit Report: Reducing perinatal HIV transmission 66
AIDS Vaccine Evaluation Unit Report: AVEU joins the HIV Vaccine Trials Network 69

Credits

This is the fifty-sixth edition of a quarterly report on the epidemiology of HIV and AIDS. Produced as a joint project 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 including Stephen Hitchcock, Jennifer Davis, Linda Oakley and Rusty Myers at Public Health-Seattle & King County, and Donna Compton, Mark Charonis, Nicole Clark, Anna Easton and Laraine Shann at the Washington State Infectious Disease and Reproductive Health Assessment Unit. Cover and document design by Stephen Hitchcock BA, BFA. Printed on recycled paper.

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HEALTHY PEOPLE. HEALTHY COMMUNITIES.

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HIV/AIDS Epidemiology Report becomes semiannual

The HIV/AIDS Epidemiology Report has been published quarterly since 1986. For the years 2000 and 2001, however, the Report will be reduced to a semiannual schedule. A mid-year issue with data through June will be released in September and a year-end issue will be released in March. This change is necessitated by the greatly increased workload experienced by the co-publishers of this report, the Washington Department of Health (DOH) and Public Health-Seattle & King County (PH-SKC), as we implement and evaluate a comprehensive system of HIV surveillance. Expanded laboratory reporting of HIV antibody and viral load test results is being implemented and thousands of previously-diagnosed persons with HIV will be reported over the next 2 years. Also, data reports are being redesigned to incorporate HIV case data. No new funding or staff is available to carry out this work. We appreciate your understanding during this time. For data users needing more frequent statistical updates, please contact PH-SKC or DOH to arrange to receive a monthly 2-page report of AIDS case data.

HIV/AIDS Reporting Requirements

Washington State implemented HIV infection reporting on September 1, 1999. 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. However, the requirement is limited to those patients who seek care or are tested on or after September 1, 1999. Local health department officials will forward case reports to the State Department of Health, replacing the name of the patient with a standard code prior to forwarding if the report indicates asymptomatic infection. As has been the case since 1984, AIDS and symptomatic HIV case reports will not be subject to coding.

Laboratory evidence of HIV infection (i.e., western blot assays, p24 antigen detection, viral culture, nucleic acid detection [viral load]) also became reportable by laboratories effective September 1, 1999. Low CD4 counts (<200/µl or <14% of total lymphocytes) already have been reportable since 1993. 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 for reporting by laboratories.

Data collected through HIV infection reporting will be included in future issues of this report by late 2000. 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.

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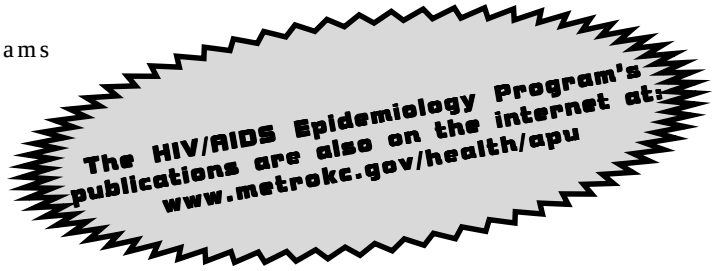

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We provide alternative formats for printed material upon request.

Table 1. Surveillance summary of reported AIDS[1] cases, deaths, and persons living with AIDS - King County, other WA counties, all WA State, U.S.

		ADULT/ ADOLESCENT	PEDIATRIC[2]	TOTAL
KING COUNTY	*Cases reported as of 6/30/00*			
	New cases reported year-to-date	106	0	106
	Cumulative cases	5,954	14	5,968
	Cumulative deaths	3,532	8	3,540
	Persons living[3]	2,422	6	2,428
OTHER COUNTIES	*Cases reported as of 6/30/00*			
	New cases reported year-to-date	142	1	143
	Cumulative cases	3,216	18	3,234
	Cumulative deaths	1,756	11	1,767
	Persons living[3]	1,460	7	1,467
WA STATE	*Cases reported as of 6/30/00*			
	New cases reported year-to-date	248	1	249
	Cumulative cases	9,170	32	9,202
	Cumulative deaths	5,288	19	5,307
	Persons living[3]	3,882	13	3,895
U.S.	*Cases reported as of 12/31/99*			
	Cumulative cases	724,656	8,718	733,374
	Cumulative deaths	425,357	5,084	430,441
	Persons living[3]	299,299	3,634	302,933

[1]AIDS by 1993 surveillance case definition
[2]Age < 13 years at time of AIDS diagnosis
[3]Persons reported with AIDS and not known to have died
[4]Most recent date that complete U.S. statistics are available

Table 2. Cumulative AIDS case counts and deaths by resident county and AIDSNet region at diagnosis - Reported as of 6/30/00 - WA State

		TOTAL CASES		DEATHS		PRESUMED LIVING	
		No.	(%)[1]	No.	(%)[2]	No.	(%)[2]
Region 1:	Adams	3	(0.0)	1	(33)	2	(67)
	Asotin	13	(0.1)	6	(46)	7	(54)
	Columbia	3	(0.0)	2	(67)	1	(33)
	Ferry	5	(0.1)	5	(100)	0	(0)
	Garfield	0	(0.0)	0	(0)	0	(0)
	Lincoln	3	(0.0)	2	(67)	1	(33)
	Okanogan	19	(0.2)	6	(32)	13	(68)
	Pend Oreille	8	(0.1)	4	(50)	4	(50)
	Spokane	378	(4.1)	213	(56)	165	(44)
	Stevens	16	(0.2)	6	(38)	10	(63)
	Walla Walla	51	(0.6)	26	(51)	25	(49)
	Whitman	8	(0.1)	4	(50)	4	(50)
	SUBTOTAL	**507**	**(5.5)**	**275**	**(54)**	**232**	**(46)**
Region 2:	Benton	62	(0.7)	28	(45)	34	(55)
	Chelan	30	(0.3)	19	(63)	11	(37)
	Douglas	2	(0.0)	2	(100)	0	(0)
	Franklin	22	(0.2)	10	(45)	12	(55)
	Grant	25	(0.3)	19	(76)	6	(24)
	Kittitas	13	(0.1)	8	(62)	5	(38)
	Yakima	127	(1.4)	65	(51)	62	(49)
	SUBTOTAL	**281**	**(3.1)**	**151**	**(54)**	**130**	**(46)**
Region 3:	Island	49	(0.5)	33	(67)	16	(33)
	San Juan	15	(0.2)	10	(67)	5	(33)
	Skagit	44	(0.5)	27	(61)	17	(39)
	Snohomish	482	(5.2)	262	(54)	220	(46)
	Whatcom	133	(1.4)	64	(48)	69	(52)
	SUBTOTAL	**723**	**(7.9)**	**396**	**(55)**	**327**	**(45)**
Region 4:	King	5,968	(64.9)	3540	(59)	2428	(41)
Region 5:	Kitsap	162	(1.8)	95	(59)	67	(41)
	Pierce	807	(8.8)	449	(56)	358	(44)
	SUBTOTAL	**969**	**(10.5)**	**544**	**(56)**	**425**	**(44)**
Region 6:	Clallam	40	(0.4)	20	(50)	20	(50)
	Clark	319	(3.5)	180	(56)	139	(44)
	Cowlitz	76	(0.8)	42	(55)	34	(45)
	Grays Harbor	41	(0.4)	21	(51)	20	(49)
	Jefferson	22	(0.2)	11	(50)	11	(50)
	Klickitat	10	(0.1)	8	(80)	2	(20)
	Lewis	36	(0.4)	23	(64)	13	(36)
	Mason	57	(0.6)	14	(25)	43	(75)
	Pacific	12	(0.1)	8	(67)	4	(33)
	Skamania	7	(0.1)	5	(71)	2	(29)
	Thurston	133	(1.4)	69	(52)	64	(48)
	Wahkiakum	1	(0.0)	0	(0)	1	(100)
	SUBTOTAL	**754**	**(8.2)**	**401**	**(53)**	**353**	**(47)**
TOTAL		**9,202**	**(100.0)**	**5,307**	**(58)**	**3,895**	**(42)**

[1] Percent of Washington State cases (column %)
[2] Percent of individual county's cases (row %)

Table 3. Demographic characteristics of cumulative reported AIDS[1] cases - King County, other WA counties, all WA State, U.S.

	KING COUNTY		OTHER COUNTIES		ALL WA STATE		TOTAL U.S.	
Cases reported as of:	6/30/00		6/30/00		6/30/00		12/31/99[2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
SEX								
Male	5,691	(95)	2,834	(88)	8,525	(93)	609,326	(83)
Female	277	(5)	400	(12)	677	(7)	124,045	(17)
Unknown	0	(0)	0	(0)	0	(0)	3	(<1)
AGE GROUP (YRS)								
< 13	14	(<1)	18	(1)	32	(<1)	8,718	(1)
13-19	12	(<1)	26	(1)	38	(<1)	3,725	(<1)
20-29	1,021	(17)	650	(20)	1,671	(18)	123,579	(17)
30-39	2,900	(49)	1,417	(44)	4,317	(47)	329,065	(45)
40-49	1,495	(25)	778	(24)	2,273	(25)	190,087	(26)
50-59	421	(7)	234	(7)	655	(7)	56,937	(8)
> 59	105	(2)	111	(3)	216	(2)	21,260	(3)
Unknown	0	(0)	0	(0)	0	(0)	3	(<1)
RACE/ETHNICITY								
White, not Hispanic	4,800	(80)	2,589	(80)	7,389	(80)	318,354	(43)
Black, not Hispanic	606	(10)	284	(9)	890	(10)	272,881	(37)
Hispanic	359	(6)	244	(8)	603	(7)	133,703	(18)
Asian/Pacific Islander	114	(2)	44	(1)	158	(2)	5,347	(1)
American Indian/AK Native	89	(1)	73	(2)	162	(2)	2,132	(<1)
Unknown	0	(0)	0	(0)	0	(0)	957	(<1)
HIV EXPOSURE CATEGORY								
Male-male sex	4,514	(76)	1,801	(56)	6,315	(69)	341,597	(47)
Injection drug use (IDU)	333	(6)	481	(15)	814	(9)	184,429	(25)
IDU & male-male sex	610	(10)	312	(10)	922	(10)	46,582	(6)
Heterosexual contact	188	(3)	281	(9)	469	(5)	74,477	(10)
Hemophilia	30	(1)	56	(2)	86	(1)	5,310	(1)
Transfusion	53	(1)	66	(2)	119	(1)	8,910	(1)
Mother at risk/has HIV	13	(<1)	15	(<1)	28	(<1)	7,943	(1)
Undetermined/other[3]	227	(4)	222	(7)	449	(5)	64,126	(9)
TOTAL CASES	**5,968**		**3,234**		**9,202**		**733,374**	

[1] AIDS by 1993 surveillance case definition
[2] Most recent date that complete U.S. statistics are available
[3] Includes patients 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 where the risk of the sexual partner was undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined

Table 4A. Cumulative AIDS[1] cases by gender, race/ethnicity, and HIV exposure category - Reported as of 6/30/00 - King County

EXPOSURE CATEGORY	WHITE[2] No.	(%)	BLACK[2] No.	(%)	HISPANIC No.	(%)	ASIAN/PI[3] No.	(%)	AI/AN[4] No.	(%)	TOTAL No.	(%)
MALE												
Male-male sex	3,833	(83)	304	(58)	247	(72)	88	(83)	42	(58)	4,514	(79)
Injection drug use (IDU)	131	(3)	77	(15)	33	(10)	3	(3)	7	(10)	251	(4)
IDU & male-male sex	504	(11)	54	(10)	29	(8)	4	(4)	19	(26)	610	(11)
Heterosexual contact	29	(1)	21	(4)	9	(3)	1	(1)	1	(1)	61	(1)
Hemophilia	28	(1)	1	(<1)	0	(0)	1	(1)	0	(0)	30	(1)
Transfusion	27	(1)	2	(<1)	2	(1)	1	(1)	1	(1)	33	(1)
Mother at risk/has HIV	3	(<1)	3	(1)	0	(0)	0	(0)	0	(0)	6	(<1)
Undetermined/other	90	(2)	61	(12)	24	(7)	8	(8)	3	(4)	186	(3)
MALE SUBTOTAL (row %)	**4,645**	**(82)**	**523**	**(9)**	**344**	**(6)**	**106**	**(2)**	**73**	**(1)**	**5,691**	**(100)**
FEMALE												
Injection drug use (IDU)	41	(26)	28	(34)	1	(7)	0	(0)	12	(75)	82	(30)
Heterosexual contact	78	(50)	34	(41)	9	(60)	3	(38)	3	(19)	127	(46)
Hemophilia	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Transfusion	14	(9)	4	(5)	1	(7)	1	(13)	0	(0)	20	(7)
Mother at risk/has HIV	3	(2)	2	(2)	2	(13)	0	(0)	0	(0)	7	(3)
Undetermined/other	19	(12)	15	(18)	2	(13)	4	(50)	1	(6)	41	(15)
FEMALE SUBTOTAL (row %)	**155**	**(56)**	**83**	**(30)**	**15**	**(5)**	**8**	**(3)**	**16**	**(6)**	**277**	**(100)**
TOTAL	**4,800**	**(80)**	**606**	**(10)**	**359**	**(6)**	**114**	**(2)**	**89**	**(1)**	**5,968**	**(100)**

Table 4B. Cumulative AIDS[1] cases by gender, race/ethnicity, and HIV exposure category - Reported as of 6/30/00 - WA State

EXPOSURE CATEGORY	WHITE[2] No.	(%)	BLACK[2] No.	(%)	HISPANIC No.	(%)	ASIAN/PI[3] No.	(%)	AI/AN[4] No.	(%)	TOTAL No.	(%)
MALE												
Male-male sex	5,388	(77)	406	(55)	342	(63)	111	(80)	68	(51)	6,315	(74)
Injection drug use (IDU)	381	(5)	126	(17)	73	(13)	4	(3)	21	(16)	605	(7)
IDU & male-male sex	766	(11)	74	(10)	46	(8)	4	(3)	32	(24)	922	(11)
Heterosexual contact	87	(1)	37	(5)	26	(5)	3	(2)	4	(3)	157	(2)
Hemophilia	80	(1)	1	(<1)	1	(<1)	1	(1)	0	(0)	83	(1)
Transfusion	61	(1)	3	(<1)	6	(1)	1	(1)	1	(1)	72	(1)
Mother at risk/has HIV	6	(<1)	5	(1)	0	(0)	0	(0)	1	(1)	12	(<1)
Undetermined/other	202	(3)	84	(11)	53	(10)	14	(10)	6	(5)	359	(4)
MALE SUBTOTAL (row %)	**6,971**	**(82)**	**736**	**(9)**	**547**	**(6)**	**138**	**(2)**	**133**	**(2)**	**8,525**	**(100)**
FEMALE												
Injection drug use (IDU)	125	(30)	55	(36)	7	(13)	2	(10)	20	(69)	209	(31)
Heterosexual contact	208	(50)	60	(39)	32	(57)	7	(35)	5	(17)	312	(46)
Hemophilia	3	(1)	0	(0)	0	(0)	0	(0)	0	(0)	3	(<1)
Transfusion	32	(8)	7	(5)	3	(5)	3	(15)	2	(7)	47	(7)
Mother at risk/has HIV	7	(2)	4	(3)	4	(7)	1	(5)	0	(0)	16	(2)
Undetermined/other	43	(10)	28	(18)	10	(18)	7	(35)	2	(7)	90	(13)
FEMALE SUBTOTAL (row %)	**418**	**(62)**	**154**	**(23)**	**56**	**(8)**	**20**	**(3)**	**29**	**(4)**	**677**	**(100)**
TOTAL	**7,389**	**(80)**	**890**	**(10)**	**603**	**(7)**	**158**	**(2)**	**162**	**(2)**	**9,202**	**(100)**

[1]AIDS by 1993 surveillance case definition
[2]And not Hispanic
[3]Asian/Pacific Islander
[4]American Indian/Alaska Native

Table 5. Cumulative AIDS[1] cases by gender and age at diagnosis Reported as of 6/30/00 - King County and WA State

	KING COUNTY				WASHINGTON STATE			
	MALE		FEMALE		MALE		FEMALE	
AGE (YRS)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
< 5	5	(<1)	5	(2)	11	(<1)	13	(2)
5-12	2	(<1)	2	(1)	5	(<1)	3	(<1)
13-19	8	(<1)	4	(1)	26	(<1)	12	(2)
20-29	946	(17)	75	(27)	1,504	(18)	167	(25)
30-39	2,781	(49)	119	(43)	4,038	(47)	279	(41)
40-49	1,451	(25)	44	(16)	2,143	(25)	130	(19)
50-59	403	(7)	18	(6)	607	(7)	48	(7)
> 59	95	(2)	10	(4)	191	(2)	25	(4)
TOTAL	**5,691**	**(100)**	**277**	**(100)**	**8,525**	**(100)**	**677**	**(100)**

[1] AIDS by 1993 surveillance case definition

Table 6. AIDS[1] cases, deaths, and case-fatality rates by year Reported as of 6/30/00 - King County and WA State

	KING COUNTY				WASHINGTON STATE		
YEAR OF DIAGNOSIS	CASES	(% TOTAL WA CASES)	DEATHS[2]	CASE-FATALITY RATE (%)[3]	CASES	DEATHS[2]	CASE-FATALITY RATE (%)[3]
1982	1	(100)	1	(100)	1	1	(100)
1983	11	(55)	11	(100)	20	20	(100)
1984	60	(76)	57	(95)	79	76	(96)
1985	104	(79)	100	(96)	131	127	(97)
1986	186	(75)	178	(96)	249	241	(97)
1987	274	(74)	262	(96)	370	353	(95)
1988	352	(71)	323	(92)	496	458	(92)
1989	461	(73)	416	(90)	629	565	(90)
1990	518	(68)	451	(87)	757	661	(87)
1991	562	(66)	466	(83)	854	711	(83)
1992	620	(67)	433	(70)	924	664	(72)
1993	644	(65)	376	(58)	996	600	(60)
1994	539	(61)	240	(45)	887	407	(46)
1995	506	(64)	122	(24)	790	206	(26)
1996	416	(59)	43	(10)	704	88	(13)
1997	294	(56)	36	(12)	521	61	(12)
1998	233	(60)	17	(7)	387	36	(9)
1999[4]	158	(49)	8	(5)	321	27	(8)
2000[4]	29	(34)	0	(0)	86	5	(6)
TOTAL	**5,968**	**(100)**	**3,540**	**(59)**	**9,202**	**5,307**	**(58)**

[1]AIDS by 1993 surveillance case definition
[2]Number of deaths among persons diagnosed each year
[3]Percent of cases diagnosed in each year whose deaths have been reported to date
[4]Reporting for recent years is incomplete

Table 7A. AIDS cases by HIV exposure category and year of diagnosis Reported as of 6/30/00 - King County

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	284	(68)	186	(63)	148	(64)	97	(61)	14	(48)
Injection drug use (IDU)	35	(8)	15	(5)	23	(10)	15	(9)	4	(14)
IDU & male-male sex	32	(8)	33	(11)	22	(9)	15	(9)	3	(10)
Heterosexual contact	23	(6)	16	(5)	11	(5)	6	(4)	1	(3)
Hemophilia	3	(1)	3	(1)	0	(0)	1	(1)	0	(0)
Transfusion	0	(0)	3	(1)	2	(1)	1	(1)	0	(0)
Mother at risk/has HIV	3	(1)	1	(<1)	0	(0)	0	(0)	0	(0)
Undetermined/other[3]	36	(9)	37	(13)	27	(12)	23	(15)	7	(24)

Table 7B. AIDS cases by HIV exposure category and year of diagnosis Reported as of 6/30/00 - Other Counties

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	142	(49)	103	(45)	67	(44)	62	(38)	27	(47)
Injection drug use (IDU)	49	(17)	39	(17)	31	(20)	36	(22)	10	(18)
IDU & male-male sex	28	(10)	18	(8)	11	(7)	15	(9)	1	(2)
Heterosexual contact	44	(15)	28	(12)	20	(13)	17	(10)	6	(11)
Hemophilia	2	(1)	4	(2)	0	(0)	1	(1)	0	(0)
Transfusion	5	(2)	4	(2)	1	(1)	1	(1)	0	(0)
Mother at risk/has HIV	1	(<1)	1	(<1)	0	(0)	0	(0)	1	(2)
Undetermined/other[3]	17	(6)	30	(13)	24	(16)	31	(19)	12	(21)

Table 7C. AIDS cases by HIV exposure category and year of diagnosis Reported as of 6/30/00 - WA State

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	426	(61)	289	(55)	215	(56)	159	(50)	41	(48)
Injection drug use (IDU)	84	(12)	54	(10)	54	(14)	51	(16)	14	(16)
IDU & male-male sex	60	(9)	51	(10)	33	(9)	30	(9)	4	(5)
Heterosexual contact	67	(10)	44	(8)	31	(8)	23	(7)	7	(8)
Hemophilia	5	(1)	7	(1)	0	(0)	2	(1)	0	(0)
Transfusion	5	(1)	7	(1)	3	(1)	2	(1)	0	(0)
Mother at risk/has HIV	4	(1)	2	(<1)	0	(0)	0	(0)	1	(1)
Undetermined/other[3]	53	(8)	67	(13)	51	(13)	54	(17)	19	(22)

[1]Reporting for recent years is incomplete

[2]Year to date (cases reported as of 6/30/00)

[3]Includes patients 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 where the risk of the sexual partner was undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined

Table 8A. AIDS cases by age/gender and year of diagnosis Reported as of 6/30/00 - King County

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	385	(93)	270	(92)	212	(91)	143	(91)	25	(86)
Adult Female Cases	28	(7)	23	(8)	21	(9)	15	(9)	4	(14)
Pediatric Cases	3	(1)	1	(<1)	0	(0)	0	(0)	0	(0)

Table 8B. AIDS cases by age/gender and year of diagnosis Reported as of 6/30/00 - Other counties

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	236	(82)	189	(83)	135	(88)	129	(79)	46	(81)
Adult Female Cases	51	(18)	37	(16)	19	(12)	34	(21)	10	(18)
Pediatric Cases	1	(<1)	1	(<1)	0	(0)	0	(0)	1	(2)

Table 8C. AIDS cases by age/gender and year of diagnosis Reported as of 6/30/00 - WA State

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	621	(88)	459	(88)	347	(90)	272	(85)	71	(83)
Adult Female Cases	79	(11)	60	(12)	40	(10)	49	(15)	14	(16)
Pediatric Cases	4	(1)	2	(<1)	0	(0)	0	(0)	1	(1)

[1] Reporting for years is incomplete
[2] Year to date (cases reported as of 6/30/00)

Table 9. Deaths of reported AIDS cases by year of death Reported as of 6/30/00 - King County, Other counties, WA State

	1996		1997		1998		1999[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
King County	285	(61)	106	(49)	88	(60)	51	(48)	15	(63)
Other Counties	179	(39)	109	(51)	59	(40)	55	(52)	9	(38)
All WA State	464	(100)	215	(100)	147	(100)	106	(100)	24	(100)

[1] Reporting for recent years is incomplete
[2] Year to date (deaths reported as of 6/30/00)

AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through December 1999, United States

Metropolitan area of residence (with 500,000 or more population)	1998		1999		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	54	7.8	49	7.1	552	1	553
Albany-Schenectady, N.Y.	119	13.7	77	8.9	1,621	24	1,645
Albuquerque, N.Mex.	88	13.0	48	7.1	1,033	2	1,035
Allentown, Pa.	39	6.3	78	12.6	777	8	785
Ann Arbor, Mich.	20	3.7	28	5.0	366	9	375
Atlanta, Ga.	939	25.1	1,027	26.6	15,097	107	15,204
Austin, Tex.	292	26.4	277	24.2	3,687	25	3,712
Bakersfield, Calif.	84	13.3	92	14.3	962	8	970
Baltimore, Md.	1,158	46.7	1,012	40.6	13,335	206	13,541
Baton Rouge, La.	184	32.0	189	32.6	1,750	19	1,769
Bergen-Passaic, N.J.	286	21.4	247	18.4	5,175	80	5,255
Birmingham, Ala.	140	15.4	140	15.3	1,776	22	1,798
Boston, Mass.	809	13.8	1,217	20.6	13,222	182	13,404
Buffalo, N.Y.	115	10.0	172	15.1	1,732	18	1,750
Charleston, S.C.	113	20.8	115	20.8	1,435	12	1,447
Charlotte, N.C.	193	14.0	162	11.4	1,976	22	1,998
Chicago, Ill.	1,100	13.8	1,352	16.9	19,880	229	20,109
Cincinnati, Ohio	100	6.2	57	3.5	1,823	15	1,838
Cleveland, Ohio	242	10.9	181	8.1	3,161	42	3,203
Columbia, S.C.	157	30.8	282	54.6	1,871	16	1,887
Columbus, Ohio	101	6.9	86	5.8	2,104	13	2,117
Dallas, Tex.	652	20.4	627	19.1	11,736	37	11,773
Dayton, Ohio	55	5.7	48	5.0	934	17	951
Denver, Colo.	234	12.1	236	11.9	5,370	19	5,389
Detroit, Mich.	486	10.9	422	9.4	7,205	71	7,276
El Paso, Tex.	121	17.4	91	13.0	996	10	1,006
Fort Lauderdale, Fla.	825	54.7	939	61.2	11,861	240	12,101
Fort Worth, Tex.	219	13.8	134	8.2	3,057	25	3,082
Fresno, Calif.	65	7.5	65	7.4	1,108	14	1,122
Gary, Ind.	52	8.3	43	6.8	672	3	675
Grand Rapids, Mich.	49	4.7	41	3.9	730	3	733
Greensboro, N.C.	110	9.4	172	14.6	1,569	20	1,589
Greenville, S.C.	124	13.5	136	14.6	1,382	6	1,388
Harrisburg, Pa.	115	18.6	73	11.8	941	8	949
Hartford, Conn.	253	22.8	178	16.0	3,749	46	3,795
Honolulu, Hawaii	105	12.0	76	8.8	1,702	12	1,714
Houston, Tex.	1,564	39.8	934	23.3	18,340	154	18,494
Indianapolis, Ind.	216	14.2	184	12.0	2,718	17	2,735
Jacksonville, Fla.	259	24.8	302	28.6	4,136	68	4,204
Jersey City, N.J.	324	58.6	251	45.4	6,257	118	6,375
Kansas City, Mo.	177	10.2	206	11.7	3,768	14	3,782
Knoxville, Tenn.	75	11.3	46	6.8	681	6	687
Las Vegas, Nev.	228	17.3	205	14.8	3,330	25	3,355
Little Rock, Ark.	67	12.1	56	10.0	989	14	1,003
Los Angeles, Calif.	1,837	19.9	2,083	22.3	40,479	230	40,709
Louisville, Ky.	168	16.8	158	15.7	1,535	16	1,551
McAllen, Tex.	50	9.6	29	5.4	330	9	339
Memphis, Tenn.	284	26.0	327	29.6	2,841	15	2,856
Miami, Fla.	1,547	71.9	1,420	65.3	22,401	471	22,872
Middlesex, N.J.	150	13.4	114	10.1	3,001	69	3,070
Milwaukee, Wis.	115	7.9	88	6.0	1,838	16	1,854
Minneapolis-Saint Paul, Minn.	172	6.1	179	6.2	3,164	17	3,181
Mobile, Ala.	88	16.5	93	17.4	1,095	13	1,108
Monmouth-Ocean, N.J.	125	11.4	105	9.5	2,685	61	2,746
Nashville, Tenn.	189	16.4	233	19.9	2,399	17	2,416
Nassau-Suffolk, N.Y.	426	15.9	347	12.9	6,358	111	6,469
New Haven, Conn.	360	22.1	344	21.0	6,161	122	6,283
New Orleans, La.	455	34.8	414	31.7	6,557	62	6,619
New York, N.Y.	7,424	85.5	6,336	72.7	113,075	1,984	115,059
Newark, N.J.	869	44.6	918	47.0	16,000	316	16,316

AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through December 1999, United States (continued)

Metropolitan area of residence (with 500,000 or more population)	1998		1999		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Norfolk, Va.	344	22.2	273	17.5	3,466	60	3,526
Oakland, Calif.	414	17.9	346	14.7	7,744	42	7,786
Oklahoma City, Okla.	147	14.2	42	4.0	1,571	7	1,578
Omaha, Nebr.	42	6.1	44	6.3	702	3	705
Orange County, Calif.	340	12.5	265	9.6	5,343	33	5,376
Orlando, Fla.	473	31.5	445	29.0	5,592	77	5,669
Philadelphia, Pa.	1,311	26.5	1,660	33.5	17,511	259	17,770
Phoenix, Ariz.	462	15.8	691	22.9	4,975	23	4,998
Pittsburgh, Pa.	121	5.2	91	3.9	2,252	17	2,269
Portland, Oreg.	156	8.6	162	8.8	3,698	8	3,706
Providence, R.I.	122	13.5	98	10.8	1,813	20	1,833
Raleigh-Durham, N.C.	124	11.5	134	12.1	1,847	21	1,868
Richmond, Va.	207	21.7	184	19.1	2,426	25	2,451
Riverside-San Bernardino, Calif.	490	15.7	381	11.9	6,519	51	6,570
Rochester, N.Y.	120	11.1	181	16.8	2,253	13	2,266
Sacramento, Calif.	184	11.8	138	8.7	3,040	24	3,064
Saint Louis, Mo.	199	7.8	303	11.8	4,442	39	4,481
Salt Lake City, Utah	114	9.0	127	10.0	1,565	14	1,579
San Antonio, Tex.	265	17.2	204	13.0	3,773	28	3,801
San Diego, Calif.	533	19.3	550	19.5	10,122	52	10,174
San Francisco, Calif.	966	57.4	856	50.8	27,111	40	27,151
San Jose, Calif.	150	9.1	152	9.2	3,018	14	3,032
San Juan, P.R.	1,064	53.1	808	40.0	14,566	241	14,807
Sarasota, Fla.	73	13.4	99	18.0	1,322	21	1,343
Scranton, Pa.	42	6.8	12	2.0	411	4	415
Seattle, Wash.	277	12.0	241	10.3	6,370	19	6,389
Springfield, Mass.	97	16.4	179	30.4	1,598	24	1,622
Stockton, Calif.	48	8.7	62	11.0	722	13	735
Syracuse, N.Y.	66	9.0	82	11.2	1,210	10	1,220
Tacoma, Wash.	53	7.8	48	7.0	774	8	782
Tampa-Saint Petersburg, Fla.	545	24.2	539	23.7	7,886	98	7,984
Toledo, Ohio	23	3.8	21	3.4	536	10	546
Tucson, Ariz.	122	15.4	113	14.1	1,432	9	1,441
Tulsa, Okla.	75	9.7	68	8.7	1,054	8	1,062
Vallejo, Calif.	107	21.6	110	21.7	1,321	9	1,330
Ventura, Calif.	45	6.1	47	6.3	773	3	776
Washington, D.C.	1,593	34.2	1,529	32.3	21,364	284	21,648
West Palm Beach, Fla.	528	51.1	457	43.5	6,918	203	7,121
Wichita, Kans.	39	7.2	61	11.1	679	2	681
Wilmington, Del.	125	22.1	155	27.1	1,871	15	1,886
Youngstown, Ohio	29	4.9	47	8.0	350	–	350
Metropolitan areas with 500,000 or more population	**39,202**	**22.9**	**37,546**	**21.7**	**608,425**	**7,387**	**615,812**
Central counties	***38,202***	***24.5***	***36,628***	***23.3***	***596,361***	***7,257***	***603,618***
Outlying counties	***1,000***	***6.5***	***918***	***5.8***	***12,064***	***130***	***12,194***
Metropolitan areas with 50,000 to 500,000 population	**4,845**	**10.1**	**4,946**	**10.2**	**69,893**	**810**	**70,703**
Central counties	***4,477***	***10.5***	***4,594***	***10.7***	***65,266***	***737***	***66,003***
Outlying counties	***368***	***6.6***	***352***	***6.2***	***4,627***	***73***	***4,700***
Nonmetropolitan areas	**3,432**	**6.2**	**3,445**	**6.2**	**42,727**	**494**	**43,221**
Total[1]	**47,915**	**17.4**	**46,400**	**16.7**	**724,656**	**8,718**	**733,374**

[1]Totals include 3,638 persons whose area of residence is unknown.

Source: CDC. **HIV/AIDS Surveillance Report**, 1999; 11(no.2). Internet accessible at http://www.cdc.gov/hiv

AIDS Cases and annual rates per 100,000 population, by state and age group, reported through December 1999, United States

Area of residence	1998		1999		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Alabama	484	11.1	476	10.9	5,724	68	5,792
Alaska	29	4.7	15	2.4	450	5	455
Arizona	636	13.6	880	18.4	6,947	36	6,983
Arkansas	202	8.0	194	7.6	2,745	38	2,783
California	5,620	17.2	5,445	16.4	114,780	586	115,366
Colorado	313	7.9	319	7.9	6,733	28	6,761
Connecticut	667	20.4	586	17.9	10,827	174	11,001
Delaware	171	23.0	186	24.7	2,342	22	2,364
District of Columbia	989	189.7	838	161.5	12,062	169	12,231
Florida	5,334	35.8	5,468	36.2	74,163	1,376	75,539
Georgia	1,286	16.8	1,678	21.5	21,429	199	21,628
Hawaii	158	13.3	100	8.4	2,331	15	2,346
Idaho	32	2.6	25	2.0	472	2	474
Illinois	1,293	10.7	1,557	12.8	22,962	258	23,220
Indiana	482	8.2	363	6.1	5,722	40	5,762
Iowa	71	2.5	87	3.0	1,221	9	1,230
Kansas	123	4.7	171	6.4	2,243	12	2,255
Kentucky	280	7.1	277	7.0	3,110	24	3,134
Louisiana	948	21.7	854	19.5	11,851	119	11,970
Maine	31	2.5	80	6.4	907	9	916
Maryland	1,629	31.8	1,525	29.5	19,934	297	20,231
Massachusetts	906	14.7	1,454	23.5	15,012	206	15,218
Michigan	708	7.2	649	6.6	10,478	104	10,582
Minnesota	188	4.0	190	4.0	3,557	23	3,580
Mississippi	415	15.1	421	15.2	3,981	56	4,037
Missouri	439	8.1	531	9.7	8,713	56	8,769
Montana	29	3.3	13	1.5	307	3	310
Nebraska	72	4.3	67	4.0	1,006	10	1,016
Nevada	258	14.8	242	13.4	4,092	26	4,118
New Hampshire	37	3.1	46	3.8	841	9	850
New Jersey	2,114	26.1	2,043	25.1	39,481	735	40,216
New Mexico	209	12.1	93	5.3	1,903	8	1,911
New York	8,667	47.7	7,703	42.3	133,843	2,219	136,062
North Carolina	789	10.5	794	10.4	9,632	113	9,745
North Dakota	7	1.1	7	1.1	103	1	104
Ohio	683	6.1	547	4.9	10,671	121	10,792
Oklahoma	286	8.6	148	4.4	3,414	25	3,439
Oregon	204	6.2	225	6.8	4,575	16	4,591
Pennsylvania	1,737	14.5	1,967	16.4	22,678	310	22,988
Rhode Island	126	12.8	107	10.8	1,932	21	1,953
South Carolina	776	20.2	959	24.7	8,643	79	8,722
South Dakota	13	1.8	16	2.2	154	4	158
Tennessee	694	12.8	759	13.8	7,689	49	7,738
Texas	3,949	20.0	3,181	15.9	51,079	370	51,449
Utah	139	6.6	155	7.3	1,806	21	1,827
Vermont	20	3.4	20	3.4	363	5	368
Virginia	996	14.7	943	13.7	12,044	162	12,206
Washington	438	7.7	360	6.3	8,965	33	8,998
West Virginia	84	4.6	69	3.8	1,004	9	1,013
Wisconsin	203	3.9	152	2.9	3,353	27	3,380
Wyoming	6	1.2	15	3.1	172	2	174
Subtotal	**45,970**	**17.0**	**45,000**	**16.5**	**700,446**	**8,309**	**708,755**
U.S. dependencies, possessions, and associated nations							
Guam	2	1.3	10	6.6	31	–	31
Pacific Islands, U.S.	–	–	–	–	4	–	4
Puerto Rico	1,710	44.3	1,247	32.1	23,160	386	23,546
Virgin Islands, U.S.	35	29.6	39	32.6	432	17	449
Total[1]	**47,915**	**17.4**	**46,400**	**16.7**	**724,656**	**8,718**	**733,374**

[1]U.S. totals presented in this report include data from the United States (50 states and the District of Columbia), and from U.S. dependencies, possessions, and independent nations in free association with the United States. Totals include 589 persons whose area of residence is unknown.
Source: CDC. **HIV/AIDS Surveillance Report**, 1999; 11(no.2). Internet accessible at http://www.cdc.gov/hiv

Figure 1. Male adult/adolescent annual AIDS rates per 100,000 population, for cases reported in 1999, United States

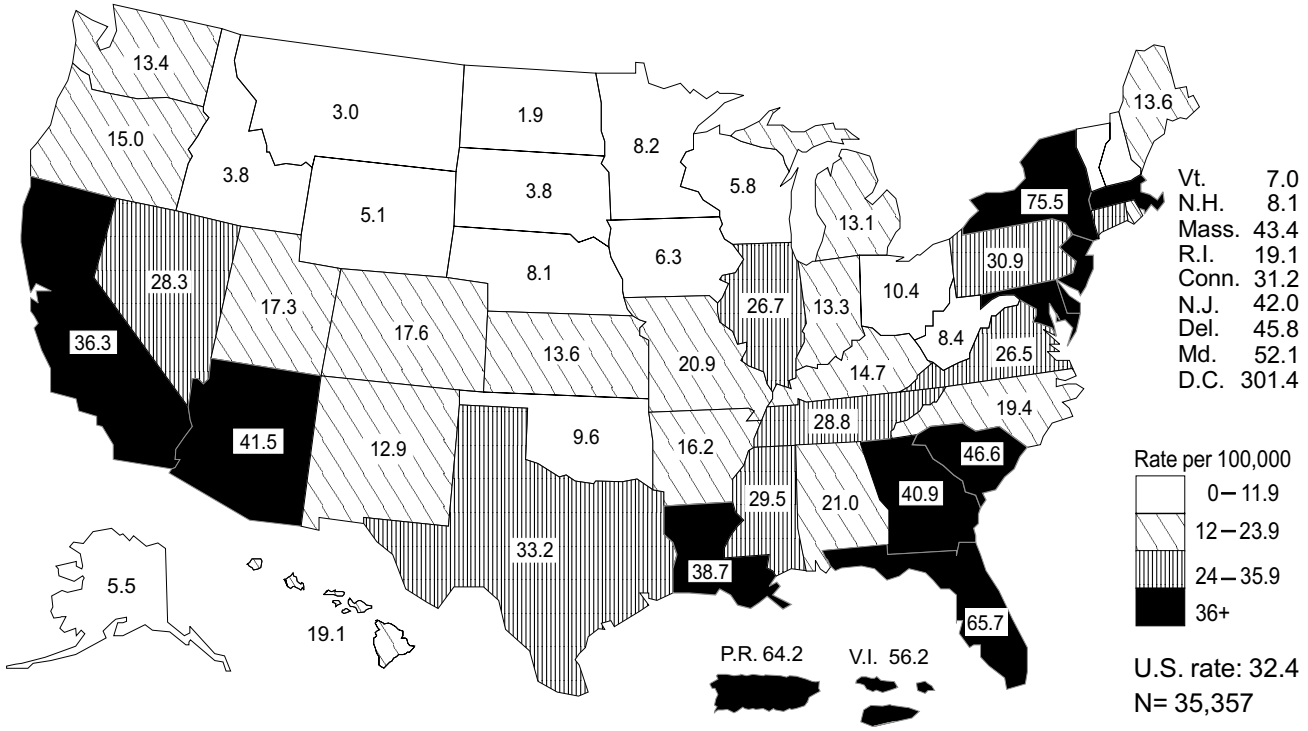
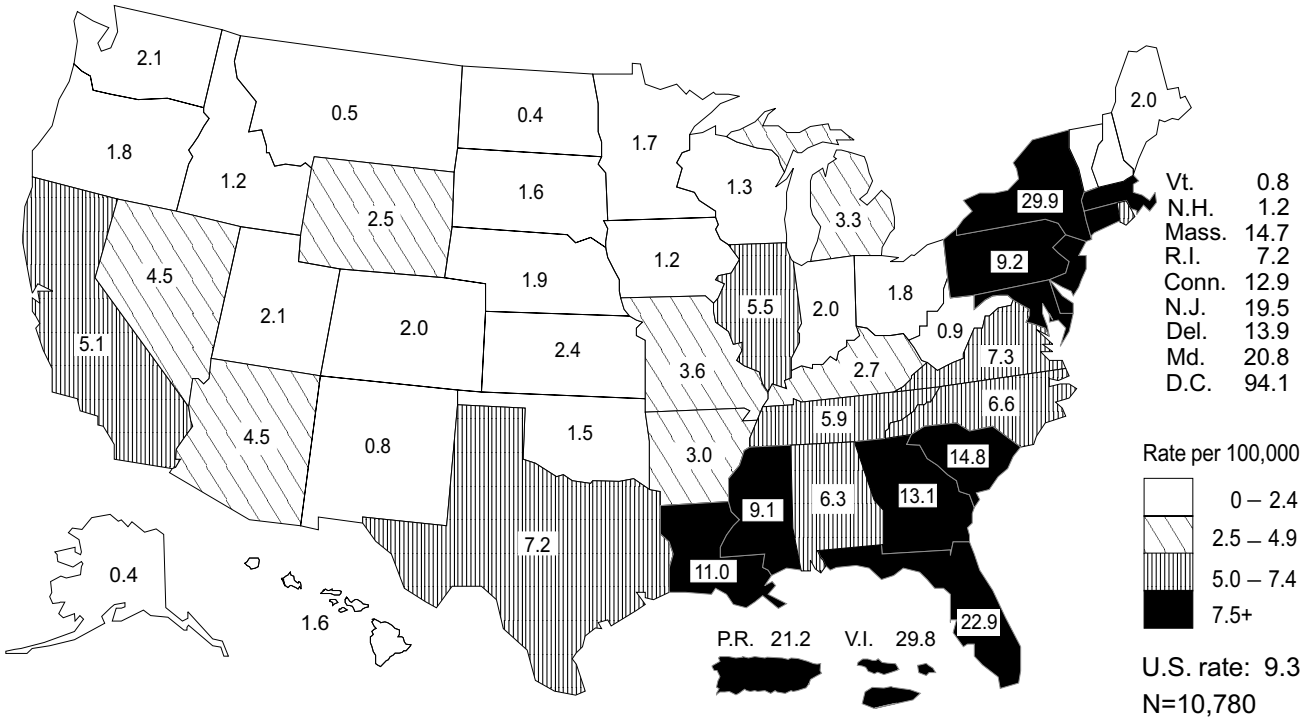


Figure 2. Female adult/adolescent annual AIDS rates per 100,000 population, for cases reported in 1999, United States



Source: CDC. **HIV/AIDS Surveillance Report**, 1999; 11(no.2). Internet accessible at http://www.cdc.gov/hiv

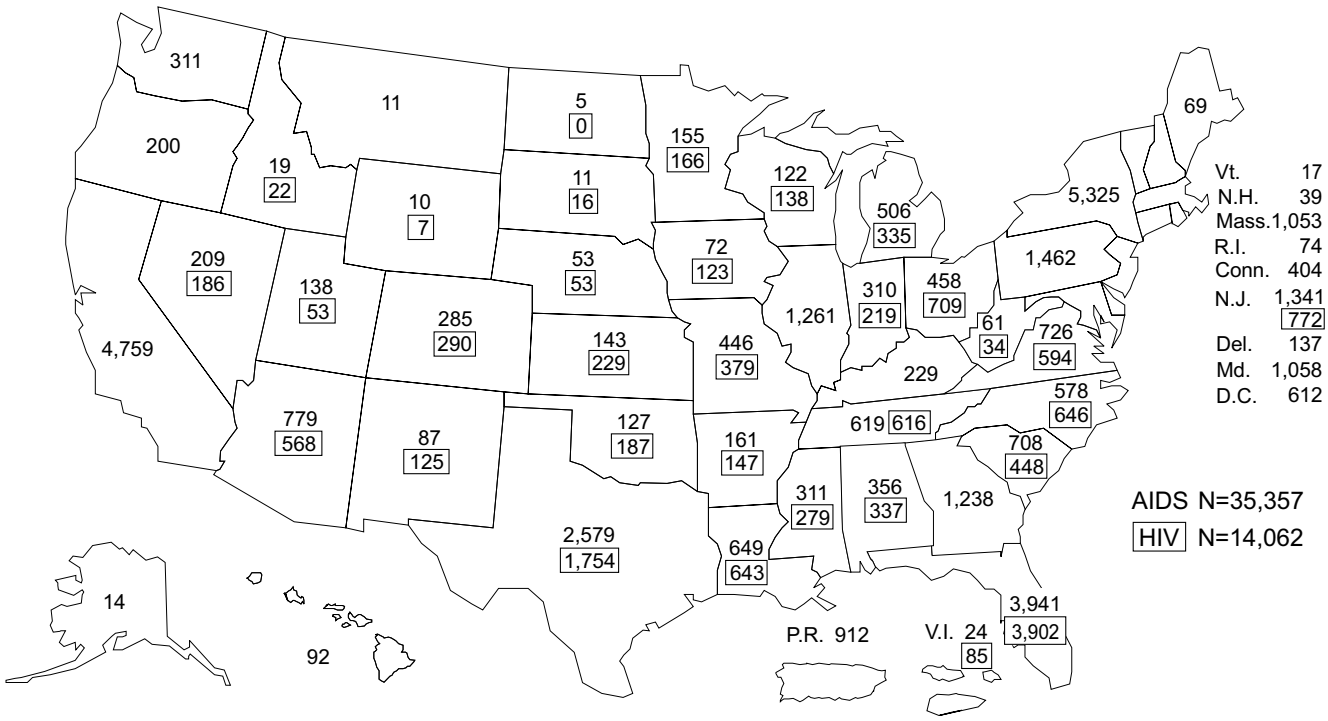
HIV Infection cases[1] by area and age group, reported through December 1999, from areas with confidential HIV Infection reporting*

Area of residence (Date HIV reporting initiated)	1999	Cumulative totals		
		Adults/ adolescents	Children <13 years old	Total
Alabama (Jan. 1988)	519	4,963	44	5,007
Arizona (Jan. 1987)	694	4,347	39	4,386
Arkansas (July 1989)	214	1,888	20	1,908
Colorado (Nov. 1985)	325	5,494	28	5,522
Connecticut (July 1992)[2]	5	–	105	105
Florida (July 1997)	6,402	14,329	143	14,472
Idaho (June 1986)	28	332	5	337
Indiana (July 1988)	301	3,272	36	3,308
Iowa (July 1998)	169	255	3	258
Kansas (July 1999)	287	650	7	657
Louisiana (Feb. 1993)	971	6,770	118	6,888
Michigan (April 1992)	499	4,964	106	5,070
Minnesota (Oct. 1985)	230	2,556	30	2,586
Mississippi (Aug. 1988)	464	4,110	46	4,156
Missouri (Oct. 1987)	472	4,201	41	4,242
Nebraska (Sept. 1995)	79	470	6	476
Nevada (Feb. 1992)	232	2,734	24	2,758
New Jersey (Jan. 1992)	1,330	13,094	377	13,471
New Mexico (Jan. 1998)	145	538	3	541
North Carolina (Feb. 1990)	1,017	9,240	117	9,357
North Dakota (Jan. 1988)	2	67	1	68
Ohio (June 1990)	919	5,393	67	5,460
Oklahoma (June 1988)	219	2,219	17	2,236
Oregon (Sept. 1988)[2]	–	–	16	16
South Carolina (Feb. 1986)	717	6,776	103	6,879
South Dakota (Jan. 1988)	21	189	5	194
Tennessee (Jan. 1992)	897	5,431	51	5,482
Texas (Jan. 1999)[2]	2,563	2,697	292	2,989
Utah (April 1989)	64	747	6	753
Virginia (July 1989)	878	7,743	77	7,820
West Virginia (Jan. 1989)	49	517	3	520
Wisconsin (Nov. 1985)	184	2,264	28	2,292
Wyoming (June 1989)	9	69	–	69
Subtotal	**20,905**	**118,319**	**1,964**	**120,283**
U.S. dependencies, possessions, and associated nations				
Virgin Islands, U.S (Dec. 1998)	153	164	3	167
Persons reported from areas with confidential HIV reporting who were residents of other areas[3]	361	2,098	59	2,157
Total	**21,419**	**120,581**	**2,026**	**122,607**

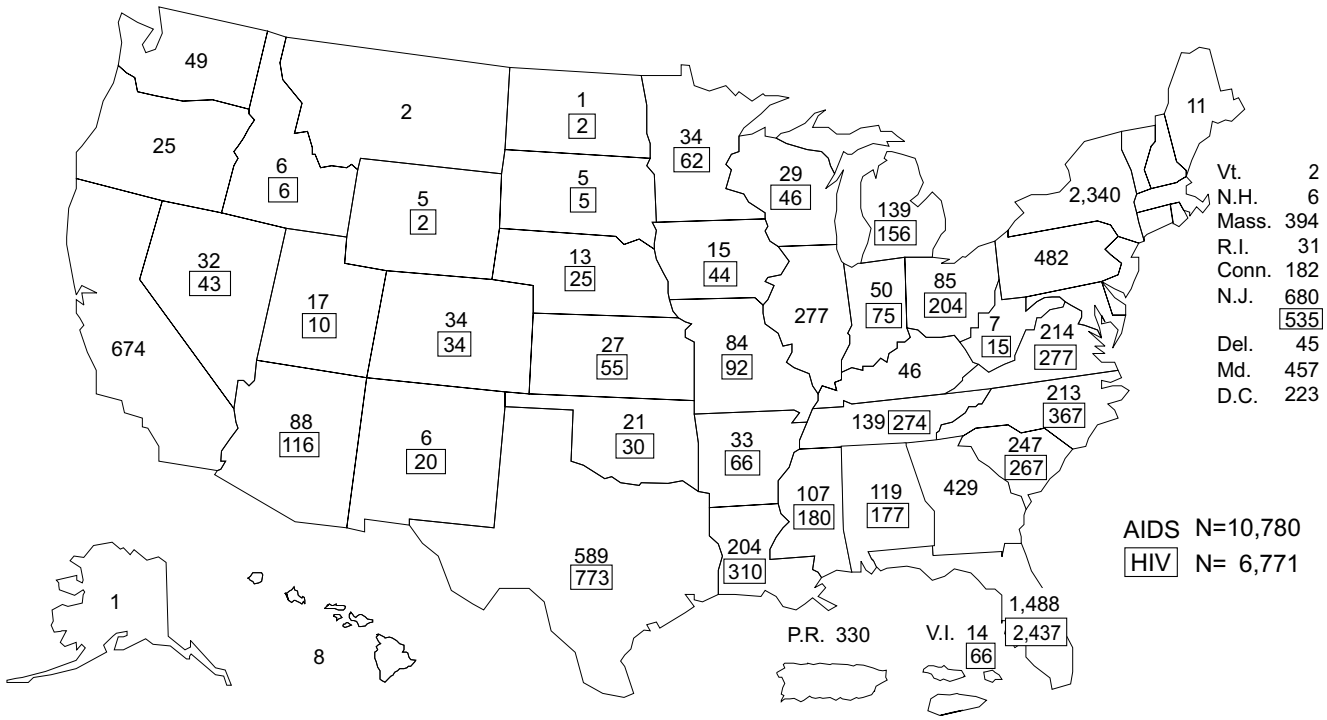
[1]Includes only persons reported with HIV infection who have not developed AIDS.
[2]Connecticut has confidential HIV infection reporting for pediatric cases only; Oregon has confidential HIV infection reporting for children less than 6 years old; Texas reported only pediatric HIV infection cases from February 1994 until January 1999.
[3]Includes 336 persons reported from areas with confidential HIV infection reporting, but whose area of residence is unknown.

*Washington state initiated HIV infection case reporting in 9/99; HIV data will appear in CDC statistical reports that include data through December 2000.
Source: CDC. **HIV/AIDS Surveillance Report**, 1999; 11(no.2). Internet accessible at http://www.cdc.gov/hiv

Male adult/adolescent HIV infection and AIDS cases reported in 1999, United States



Female adult/adolescent HIV infection and AIDS cases reported in 1999, United States



Source: CDC. **HIV/AIDS Surveillance Report**, 1999; 11(no.2). Internet accessible at http://www.cdc.gov/hiv

Epidemiological Profile of AIDS in Washington State Residents Living Outside Seattle-King County

Acquired immunodeficiency syndrome (AIDS) is a specific group of diseases and conditions indicative of severe immunosupression related to the human immunodeficiency virus (HIV) infection. In Washington State, the AIDS epidemic historically has predominately affected White individuals 30 to 39 years of age especially and men who have sex with men (MSM). The majority of the cases are reported to be living in the Seattle-King County (S-KC) area, but the proportion of AIDS cases living outside S-KC is increasing. Recent trends also show a rise in the number of females and racial/ethnic minorities affected, as well as an increase in the proportion of cases attributed to injection drug use (IDU) and to heterosexual contact.

Methods

The results in this report are based on AIDS cases diagnosed in Washington and reported to the Department of Health through May 31, 2000. The AIDS cases in this report include those meeting the 1993 revision of the AIDS surveillance case definition as well as earlier versions.

Cases were categorized as S-KC or non-King County and by AIDS Service Network (AIDSNET) Region, according to the county of residence at AIDS diagnosis. King County comprises Region 4; for the other AIDSNET regions, the most populous counties are Spokane (Region 1), Yakima (Region 2), Snohomish (Region 3), Pierce (Region 5), and Clark (Region 6). Patients diagnosed in 1999 and the first half of 2000 may not have been reported in time for this summary; therefore, absolute numbers of cases diagnosed should be considered provisional.

Table 1 represents characteristics of Washington State AIDS cases since the beginning of the epidemic in 1982 and is for reference only. Table 2 represents characteristics of those diagnosed since 1993. This article will focus on those most recently diagnosed and, unless noted, refer to Table 2.

Impact of AIDS in Washington

Figure 1 illustrates the epidemic curve of reported AIDS cases for the years 1982 to 1998 for Seattle-King County (SK-C) and the rest of the state. The greatest number of cases were diagnosed in 1993 with the annual AIDS incidence decreasing since that time. In 1993, the AIDS case definition was expanded by the Centers for Disease Control and Prevention (CDC) to include not only HIV positive individuals with an opportunistic infection, but also asymptomatic infection with laboratory evidence of severe immunodeficiency (CD4T-lymphocyte count < 200 or 14%). As a result, persons were reported earlier in the course of their disease, a phenomenon that contributed to an apparent peak in AIDS incidence. The 1993 peak in case numbers and the subsequent decline likely relates to several factors: the 1993 expansion of the case definition; the use of improved antiretroviral therapies forestalling the development of AIDS among persons with HIV infection; and earlier reductions in HIV transmission rates due to behavioral changes among populations receiving HIV prevention messages.

Cumulatively through May 2000, 9167 AIDS cases had been reported to the Washington State Department of Health. In 1998, Washington ranked 28th among states including the District of Columbia in the number of AIDS cases reported that year to the CDC, and ranked 21st among states for the rate of AIDS cases.[1] The 383 Washington AIDS cases diagnosed in 1998 represented a 26% decrease from the number of cases diagnosed in 1997. The annual incidence of AIDS in Washington State per 100,000 population declined from 19.0 in 1993 to 6.7 in 1998. Of all AIDS cases reported in washington since 1982, 58% are known to have died. Like AIDS case numbers, deaths due to AIDS have also declined in recent years. In 1997, 215 deaths of diagnosed AIDS cases were reported while in 1998, 147 deaths were reported, a 32% decrease.

In Washington State, 3871 (42%) of the 9167 reported AIDS cases are presumed living (i.e.,

not known to have died) as of May 2000. Of those presumed to be alive, 1452 cases (38%) were reported with a residence at diagnosis outside S-KC and 62% of the resided in S-KC at the time of diagnosis. At the peak in 1993, 65% of cases diagnosed that year were reported among S-KC residents and 35% were from outside S-KC. In 1998, 60% of the cases were reported in S-KC, while the proportion of cases reported outside S-KC had increased to 40%.

Trends by geographic region

Trends in persons developing AIDS may also be assessed geographically. The trends presented are based on AIDSNET region of residence at time of diagnosis. Figure 2 shows the trends for the AIDSNET regions excluding Region 4 (King County) per 100,000 population. All regions saw a decrease in the number of cases diagnosed from 1997 to 1998 with Region 1 experiencing the greatest decrease (48%) and Region 2 the smallest decrease (16%). Of cases diagnosed since 1993 outside King County, the highest number were from Region 5 with 549 cases (12%) followed by Region 6 with 432 cases (9%) and Region 3 with 426 cases (9%). ***Note:*** *Geographic data should be interpreted with caution since a person's county of residence at the time of AIDS diagnosis may not necessarily represent where they acquired HIV infection or their current area of residence.*

Region 5 continued to have the highest proportion of female cases with 20% of total cases being women. Other regions with high proportions of female AIDS cases included Regions 2 and Region 3, each with 16%. In comparison, only 6% of S-KC cases since 1993 were among women.

The proportion of non-Hispanic Black cases ranged from 5% in Region 2 to 21% in Region 5. Region 2 had the highest proportion of Hispanic cases (35%). In all regions, the majority of the AIDS cases were diagnosed in persons between 30-39 years of age. Region 2 had a higher proportion of 20-29 year old cases (28%), while the proportion of cases in the 40-49 year old age group was higher in the other regions.

As is true in SKC, MSM continues to be the major exposure category for all the regions outside S-KC, although the proportion of cases is decreasing. In Region 2, a higher proportion (15%) of AIDS cases were contracted through heterosexual contact and in Region 5 a greater percentage (24%) were due to IDU. The proportion of AIDS cases with no identified risk (NIR) ranged from 7% in Region 6 to 13% in Region 2.

Gender

Of the 383 AIDS cases diagnosed in 1998, males made up the majority (90%) while females comprised 10%. Trends show that the number of male cases declined by 63% from a peak of 919 cases in 1993. From 1997 to 1998, the incidence of AIDS outside King County dropped for males (9.6 per 100,000 vs. 6.7 per 100,000, respectively) as well as females (1.9/100,000 vs. 0.9/100,000, respectively). While the proportion of male cases has been declining, the percent of cases in women has been steadily increasing. In 1986, women comprised only 2% of all cases diagnosed whereas in 1998, 10% were female.

Race/ethnicity

The majority of cumulative AIDS cases reported in Washington State have been diagnosed in Whites, both in S-KC (75%) and outside S-KC (76%). Among persons of color, AIDS case numbers were higher in non-Hispanic Blacks than in other racial/ethnic groups. Non-Hispanic Blacks and Hispanics accounted for 16% and 10%, respectively, of all persons diagnosed with AIDS in Washington in1998, the highest proportions thus far in the epidemic.

All racial/ethnic groups experienced a decline in cases diagnosed between 1997 and 1998 with the greatest decline in Asian/Pacific Islanders (30%) and the smallest decline in Blacks (3%). Non-Hispanic Blacks had the greatest increase in the proportion of cases from 1997 to 1998 (13% vs. 16%, respectively), although all minority groups except Asian/Pacific Islanders either remained stable or saw a proportional increase in cases compared to Whites in 1998.

Age

Historically, the majority of cases in the state have been in the 30-39 years age group at the time of AIDS diagnosis. From 1997 to 1998

Table 1. Characteristics of Washington State AIDS cases by AIDSNET region of residence at time of diagnosis, as reported to the Department of Health through May 31, 2000

AIDSNET Region	1	2	3	5	6	Non-S-KC	S-KC[4]
Sex							
Male	466 (93%)	252 (87%)	632 (88%)	815 (85%)	657 (89%)	2822 (88%)	5676 (95%)
Female	35 (7%)	38 (13%)	89 (12%)	149 (16%)	85 (12%)	396 (12%)	273 (5%)
Race/Ethnicity							
White, not Hispanic	434 (87%)	194 (67%)	613 (85%)	674 (70%)	653 (88%)	2568 (80%)	4785 (80%)
Black, not Hispanic	21 (4%)	12 (4%)	34 (5%)	184 (19%)	31 (4%)	282 (9%)	603 (10%)
Hispanic	28 (6%)	80 (28%)	35 (5%)	65 (7%)	35 (5%)	243 (8%)	359 (6%)
Asian/PI	3 (1%)	1 (<1%)	16 (2%)	18 (2%)	6 (1%)	44 (1%)	114 (2%)
Am Ind/AK Nat	11 (2%)	3 (1%)	22 (3%)	22 (2%)	15 (2%)	73 (2%)	88 (2%)
Unknown	4 (1%)	0 (0%)	1 (<1%)	1 (<1%)	2 (<1%)	8 (<1%)	0 (0%)
Age at Diagnosis							
0-12 years	2 (<1%)	2 (1%)	4 (1%)	9 (1%)	1 (<1%)	18 (1%)	14 (<1%)
13-19	5 (1%)	5 (2%)	4 (1%)	7 (1%)	5 (1%)	26 (1%)	12 (<1%)
20-29	95 (19%)	71 (25%)	127 (18%)	225 (23%)	132 (18%)	650 (20%)	1017 (17%)
30-39	230 (46%)	113 (39%)	310 (43%)	435 (45%)	324 (44%)	1412 (44%)	2893 (49%)
40-49	105 (21%)	67 (23%)	204 (28%)	199 (21%)	196 (26%)	771 (24%)	1488 (25%)
Over 49	64 (13%)	32 (11%)	72 (10%)	89 (9%)	84 (11%)	341 (11%)	525 (9%)
Exposure Category							
MSM	296 (60%)	151 (52%)	418 (58%)	492 (51%)	437 (59%)	1794 (56%)	4500 (76%)
IDU	74 (15%)	37 (13%)	81 (11%)	175 (18%)	111 (15%)	478 (15%)	330 (6%)
MSM/IDU	51 (10%)	34 (12%)	76 (11%)	91 (9%)	60 (8%)	312 (10%)	611 (10%)
Heterosex contact	29 (6%)	29 (10%)	63 (9%)	91 (9%)	67 (9%)	279 (9%)	187 (3%)
Hemophillia	5 (1%)	7 (2%)	12 (2%)	18 (2%)	14 (2%)	56 (2%)	30 (1%)
Transfusion	15 (3%)	2 (1%)	14 (2%)	18 (2%)	17 (2%)	66 (2%)	52 (1%)
Parent at Risk/HIV+	2 (<1%)	2 (1%)	3 (<1%)	8 (1%)	1 (<1%)	16 (1%)	14 (<1%)
Undetermined	29 (6%)	28 (10%)	54 (8%)	71 (7%)	35 (5%)	217 (7%)	224 (4%)
TOTAL (row%)	**501 (6%)**	**290 (3%)**	**721 (8%)**	**964 (11%)**	**742 (8%)**	**3218 (35%)**	**5949 (65%)**
Presumed Living	**227 (45%)**	**131 (45%)**	**325 (45%)**	**420 (44%)**	**349 (47%)**	**1452 (45%)**	**2419 (41%)**

Percentages may add up to more than 100% due to rounding; percents are column percents except for TOTAL

the number of state AIDS cases that were 20-29 years old had the greatest decline (30%) followed by 30-39 year olds (27%). Those that were 50 or older made up 11% of diagnosed cases in 1997 and 13% in 1998.

Mode of HIV exposure

The most commonly reported HIV infection exposure group continued to be MSM, accounting for 49% of non-S-KC and 71% of S-KC cases diagnosed since 1993. For cumulative cases diagnosed outside of S-KC, the next most commonly reported infection risk group was IDU (18%), while in S-KC it was MSM/IDU (9%). Almost 50% of non-S-KC cases were attributable to MSM while 18% were attributable to IDU. Twelve percent of cases reported heterosexual contact as their risk factor for HIV infection.

In Washington State from 1997 to 1998, AIDS incidence declined 26% among MSM but only 2% among IDUs. Cases attributable to IDU made up an increasing proportion of cases from 1997 to 1998 (10% vs. 14%, respectively). The proportion of cases with no identified risk remained stable from 1997 to 1998. More re-

Table 2. Characteristics of Washington State AIDS cases diagnosed since January 1, 1993, by AIDSNET region of residence at time of diagnosis, as reported to the Department of Health through May 31, 2000

AIDSNET Region	1	2	3	5	6	Non-S-KC	S-KC(4)
Sex							
Male	248 (91%)	149 (84%)	359 (84%)	437 (80%)	375 (87%)	1568 (84%)	2622 (94%)
Female	25 (9%)	28 (16%)	67 (16%)	112 (20%)	57 (13%)	289 (16%)	177 (6%)
Race/Ethnicity							
White, not Hispanic	227 (83%)	106 (60%)	349 (82%)	366 (67%)	363 (84%)	1411 (76%)	2101 (75%)
Black, not Hispanic	15 (6%)	8 (5%)	24 (6%)	115 (21%)	28 (7%)	190 (10%)	350 (13%)
Hispanic	18 (7%)	62 (35%)	24 (6%)	37 (7%)	26 (6%)	167 (9%)	227 (8%)
Asian/PI	1 (<1%)	0 (0%)	11 (3%)	14 (3%)	5 (1%)	31 (2%)	62 (2%)
Am Ind/AK Nat	8 (3%)	1 (1%)	17 (4%)	16 (3%)	8 (2%)	50 (3%)	59 (2%)
Unknown	4 (2%)	0 (0%)	1 (<1%)	1 (<1%)	2 (1%)	8 (<1%)	0 (0%)
Age at Diagnosis							
0-12 years	2 (1%)	2 (1%)	1 (<1%)	3 (1%)	1 (<1%)	9 (1%)	7 (<1%)
13-19	2 (1%)	3 (2%)	3 (1%)	5 (1%)	3 (1%)	16 (1%)	5 (<1%)
20-29	40 (15%)	49 (28%)	74 (17%)	103 (19%)	71 (16%)	337 (18%)	442 (16%)
30-39	128 (47%)	67 (38%)	178 (42%)	261 (48%)	198 (46%)	832 (45%)	1333 (48%)
40-49	67 (25%)	36 (20%)	128 (30%)	130 (24%)	114 (26%)	475 (26%)	750 (27%)
Over 49	34 (13%)	20 (11%)	42 (10%)	47 (9%)	45 (10%)	188 (10%)	262 (9%)
Exposure Category							
MSM	143 (52%)	80 (45%)	213 (50%)	239 (44%)	233 (54%)	908 (49%)	1995 (71%)
IDU	53 (19%)	25 (14%)	54 (13%)	129 (24%)	81 (19%)	342 (18%)	199 (7%)
MSM/IDU	26 (10%)	15 (9%)	40 (9%)	44 (8%)	31 (7%)	156 (8%)	262 (9%)
Heterosex contact	19 (7%)	26 (15%)	54 (13%)	74 (14%)	44 (10%)	217 (12%)	125 (5%)
Hemophillia	0 (0%)	4 (2%)	7 (2%)	6 (1%)	7 (2%)	24 (1%)	11 (<1%)
Transfusion	6 (2%)	2 (1%)	8 (2%)	4 (1%)	4 (1%)	24 (1%)	11 (<1%)
Parent at Risk/HIV+	2 (1%)	2 (1%)	2 (<1%)	3 (1%)	1 (<1%)	9 (1%)	8 (<1%)
Undetermined	24 (9%)	23 (13%)	48 (11%)	50 (9%)	31 (7%)	176 (10%)	187 (7%)
Total (row%)	**273 (6%)**	**177 (4%)**	**426 (9%)**	**549 (12%)**	**432 (9%)**	**1857 (40%)**	**2799 (60%)**
Presumed Living	**193 (71%)**	**111 (63%)**	**291 (68%)**	**366 (67%)**	**309 (72%)**	**1270 (68%)**	**1963 (70%)**

Percentages may add up to more than 100% due to rounding; percents are column percents except for TOTAL

cently diagnosed cases may still be under investigation by epidemiology staff to determine the HIV exposure mode.

Since 1993 in Washington State, MSM has been the major mode of transmission for males, accounting for 69% of all cases. Heterosexual contact was the most frequently reported risk for females (48%). IDUs diagnosed with AIDS represented 10% of cases in men and 31% of cases in women. In all 5 regions excluding S-KC, MSM was the most commonly reported HIV exposure category, followed by IDU and then MSM/IDU.

Pediatric AIDS cases

There have been a total of 32 pediatric (under 13 years of age at diagnosis) AIDS cases reported in Washington State through May 31, 2000. In 1997, there were two pediatric AIDS cases reported compared to zero in 1998. While the number of pediatric cases in Washington has always been small, this drop likely reflects the continued success of efforts to reduce perinatal transmission through promotion of voluntary HIV testing and antiretroviral therapy for pregnant HIV-infected women and their infants. Such trends have been observed in states with higher rates of pediatric HIV and AIDS.

Comments

The most notable epidemiologic trend over the past several years are decreases in Washington state in the number of AIDS cases and AIDS deaths attributable to AIDS. Along with the decrease in cases and deaths, the epidemic appears to be shifting to affect different populations, namely females and racial/ethnic minorities. Increases are also being seen in the proportion of cases acquired by injection drug use and by heterosexual contact.

Region 5 accounted for a greater proportion of AIDS cases outside S-KC with increases in female, non-Hispanic black and IDU cases. While all of the regions had higher proportions of 30-39 year old individuals with AIDS, Region 2 had the highest proportion of younger people (20-29 year olds) affected by AIDS. These trends are important guides for future prevention activities.

Traditionally, long term collection and analysis of AIDS data offered the opportunity to identify new patterns of disease morbidity and mortality. These patterns were assumed to show, albeit in a delayed fashion, gross trends in HIV transmission. However, current studies show that newer treatment regimens (combination antiretroviral therapy plus protease inhibitors) have altered the natural history of HIV infection by delaying progression to AIDS.

This delay in disease progression has led to a decrease in the numbers of reported AIDS cases and deaths. As a result, when AIDS reporting is used to describe the epidemic, it appears to be on the decline when in fact there is no evidence that HIV incidence has declined in recent years. In fact, new reports of HIV infection rates in San Francisco[2] and in the Seattle area[3] suggest that HIV infections are on the rise among men who have sex with men. This trend needs to be confirmed by other surveys and by continued monitoring.

In the past, the state of Washington has only been required reporting of AIDS and symptomatic HIV cases. On September 1, 1999 Washington Administrative Code was changed, adding asymptomatic HIV infection as a reportable condition in Washington State. Future articles will include HIV data, which will reveal more about recent transmission patterns and will improve the information base upon which HIV prevention and care services are planned.

Although not reflected in this analysis, the number of AIDS cases being reported has increased since the implementation of HIV reporting. When comparing the same 8-month period for 1998-1999 and 1999-2000, an increase of 28% was seen in AIDS cases reported outside SKC. In looking at the diagnosis dates of those cases, 60% of the cases were diagnosed in 1999 and 25% were diagnosed in the year 2000. The increase in AIDS case numbers may be attributable to the increased attention given to surveillance with HIV reporting, or it may be a result of therapy failures related to resistance/difficult adherence issues. Most likely, it is a combination of the two phenomena. Further analysis of the surveillance data are needed.

❑ *Contributed by Kristen Janusz MPH*

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[1]Centers for Disease Control and Prevention. **HIV/AIDS Surveillance Report**, 1999:11 (No.2):p.8.

[2]McFarland, Willi. San Francisco Public Health Department as reported in the Seattle Times, July 1, 2000.

[3]Thiede, Hanne. **HIV/AIDS Epidemiology Report**; First half, 2000. See pages 38-45 of this issue.

Figure 1. King County and non-King County AIDS cases by year of diagnosis, 1982-1998

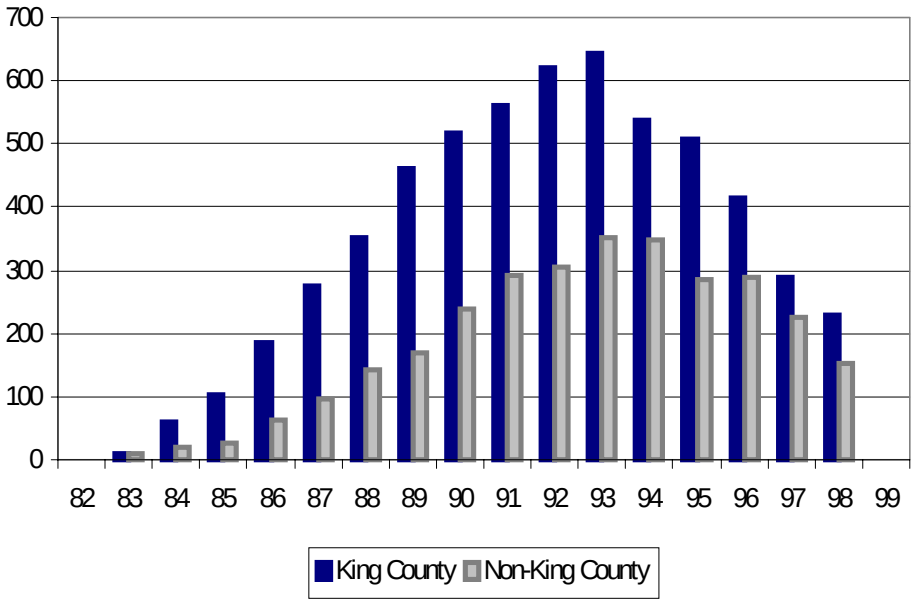
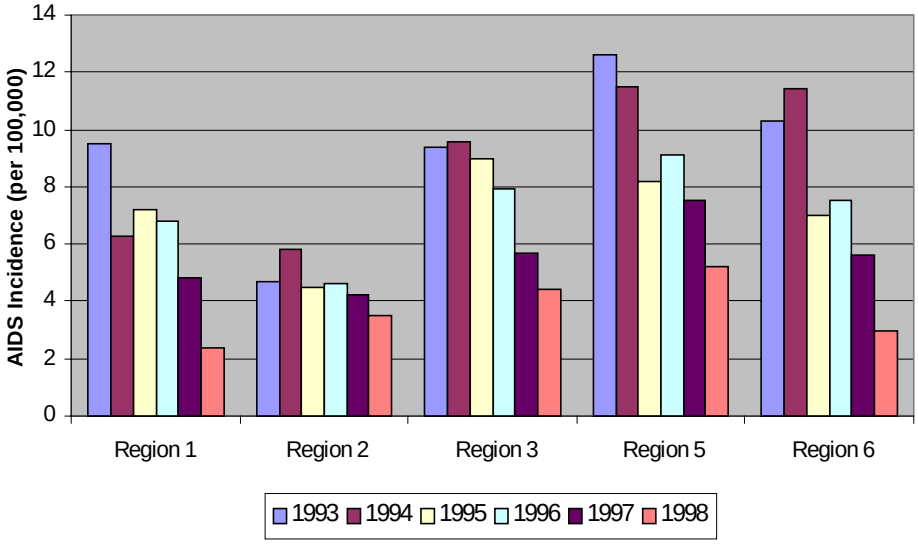


Figure 2. Incidence of AIDS per 100,000 population by AIDSNET Region of residence (excluding region 4, King County) at time of diagnosis and by year of diagnosis, 1993-1998



Annual Review of the Epidemiology of AIDS in King County

The first AIDS case was diagnosed in King County (KC) in 1982. By the end of 1999, 5,890 KC residents had been diagnosed with AIDS and more than 3,500 had died. This article reviews the epidemiology of AIDS in KC through 1999, examines trends over the past five years, and makes comparisons with national data. The statistics in this article are derived from AIDS cases diagnosed in KC residents through 1999 and reported to Public Health - Seattle & King County by May 31, 2000. Due to delays in AIDS case reporting, 1998-1999 results are provisional and statistics from earlier years are subject to minor changes.

KC AIDS Rates—National & State Comparisons

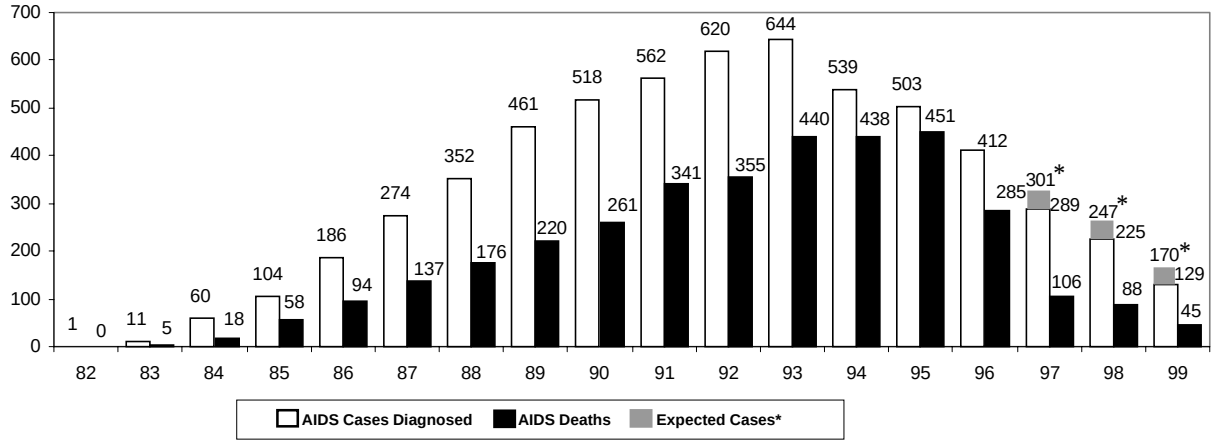
Comparing 1999 AIDS rates published by the Centers for Disease Control and Prevention (CDC),[1] the Seattle metropolitan statistical area (King, Snohomish and Island counties) ranks 66 among the 101 metropolitan areas in the U.S. with populations of 500,000 or more (see pages 8-9 of this issue). The rate of reported AIDS cases in the Seattle metro area was 10.3 per 100,000 population. New York City had the highest rate at 72.7 cases per 100,000. Other areas with high rates in 1999 were Miami (65.3); Fort Lauderdale (61.2); Columbia, South Carolina (54.6); San Francisco (50.8); and Newark (47.0). The rate in the Portland metro area was lower than Seattle at 8.8, as was the Tacoma rate at 7.0 per 100,000. US metropolitan areas with populations over 500,000 had an average rate of 21.7 cases per 100,000 compared with 10.2 per 100,000 in areas of 50,000 to 500,000 and 6.2 per 100,000 in non-metropolitan (rural) parts of the US. Overall, the average US rate of AIDS cases reported in 1999 (16.7) was 4% lower than the rate in 1998 (17.4).

King County has the highest rate of AIDS of all Washington counties. Although KC has less than one-third (29%) of Washington's population, almost two-thirds (65%) of the state's cumulative AIDS cases have been diagnosed in KC residents (see Table 2 on page 2). However, there has been a significant trend toward proportionately fewer AIDS cases occurring in KC: in 1985, 79% of the State's cases were KC residents declining to 60% by 1998 and 49% in 1999 (see Table 6 on page 5).

Case Numbers and Deaths

King County AIDS cases increased annually through 1993 when a peak of 644 cases were reported (Figure 1). After accounting for reporting delay (the average lag between AIDS diagnosis and receipt of a case report is > 4 months), approximately 247 cases in 1998 and 170 cases in 1999 are expected to be recorded. The total annual number of new AIDS cases

Figure 1. AIDS cases and deaths in King County by year, 1982-1999



*Adjusted for reporting delay

in KC is expected to continue to decline due primarily to improvements in treatment resulting in a delay of HIV progressing to AIDS. A similar drop in new annual AIDS cases has been observed in many other areas of the country. However, the proportion of AIDS cases among people of color is projected to continue to increase (Figure 4).

Figure 1 also shows the number of deaths occurring during each year. As of 5/31/2000 a total of 3,528 (60%) of the 5,890 cumulative cases diagnosed through 12/99 had died. Deaths in 1996 were down 36% from the previous three years when an average of 443 (range 438-451) deaths occurred each year. In 1997 deaths of AIDS cases declined an additional 63%, with 106 deaths recorded. In 1998, this decreased another 17%, with 88 deaths recorded. In 1999, only 45 deaths were recorded, a decline of 49% from the previous year.

Major contributions to these declines in mortality most likely include improvements in antiviral treatment and prophylaxis for opportunistic infections and advances in the ability to use both HIV viral load and CD4 counts to tailor treatment regimens.

HIV/AIDS was the leading cause of death in 25-44 year old male King County residents from 1989 until 1996. In 1997, HIV/AIDS dropped to the fourth leading cause among men in this age group, after unintentional injury, cancer and suicide. In 1998, HIV/AIDS fell further to the fifth leading cause of death among 25-44 year old King County men (just behind heart disease), and it was the eighth leading cause among women in this age group. If deaths among only Seattle residents are considered, HIV/AIDS ranks second (after unintentional injury) among men age 25-44 and eighth among women in this age range. Data for deaths in 1999 are not yet available.

Geographic Distribution

The AIDS case report records the city and zip code of residence at time of the initial diagnosis of AIDS. Of the 5,890 cumulative King County AIDS cases, 82% resided in Seattle, 18% lived in other areas of the county and <1% were missing zip code information or did not have a permanent address. The geographic distribution of AIDS cases in KC has recently shifted somewhat: between 1987 and 1995, roughly 19% of cases each year were diagnosed in persons residing outside the city of Seattle while in 1997, 27% of cases occurred outside Seattle, in 1998, 23%, and in 1999, 20% (data not shown).

Of cumulative AIDS cases through 1999, the proportion of female AIDS cases was 9% outside Seattle compared to 4% in Seattle (Table 1). Thirty-five percent of the KC female AIDS cases lived outside Seattle at the time of their diagnosis compared to 17% of the males. King County AIDS cases residing outside Seattle were more likely to have been exposed through injection drug use (7% vs. 5%), by heterosexual contact (7% vs. 2%) or have undetermined risk (8% vs, 3%) compared to Seattle cases. The racial/ethnic distribution was similar among AIDS cases in Seattle and the rest of the county.

Population-based AIDS rates vary widely within King County. For cases diagnosed in the 3-year interval 1/97 - 12/99, the city of Seattle average annual rate of 22.3 per 100,000 population was 5 times the rate observed in KC outside Seattle at 4.3 per 100,000. Within Seattle there was an eleven-fold variation in the rates, from 99.1 per 100,000 in the Central area to 8.7 per 100,000 in north Seattle. A more detailed description of AIDS rates by geographic area in KC follows this article.

Gender and Exposure Category

Of the 5,890 cumulative AIDS cases diagnosed in KC, 5,626 (96%) were male and 264 (4%) were female (Table 2). Female cases as a percent of all adult/adolescent cases in KC have risen over time—from 2-3% in 1987-90 to 7% in 1995-96, 8% in 1997, and 9% in 1998 (Figure 3). In 1999, this declined somewhat to 7%. Nationwide, according to statistics from the CDC, females were 17% of the cumulative adult/adolescent cases reported between 1981 and 1999, but 23% of adult/adolescent cases reported in 1999 alone.[1]

Among the 5,619 cumulative adult/adolescent male AIDS cases in KC, 81% were men who had sex with other men (MSM), 11% were MSM who were also injection drug users (IDU), 4% were heterosexual IDU, and 1% were associ-

Figure 2. Trends in the percent of total AIDS cases in King County by HIV exposure category, 1987-1999

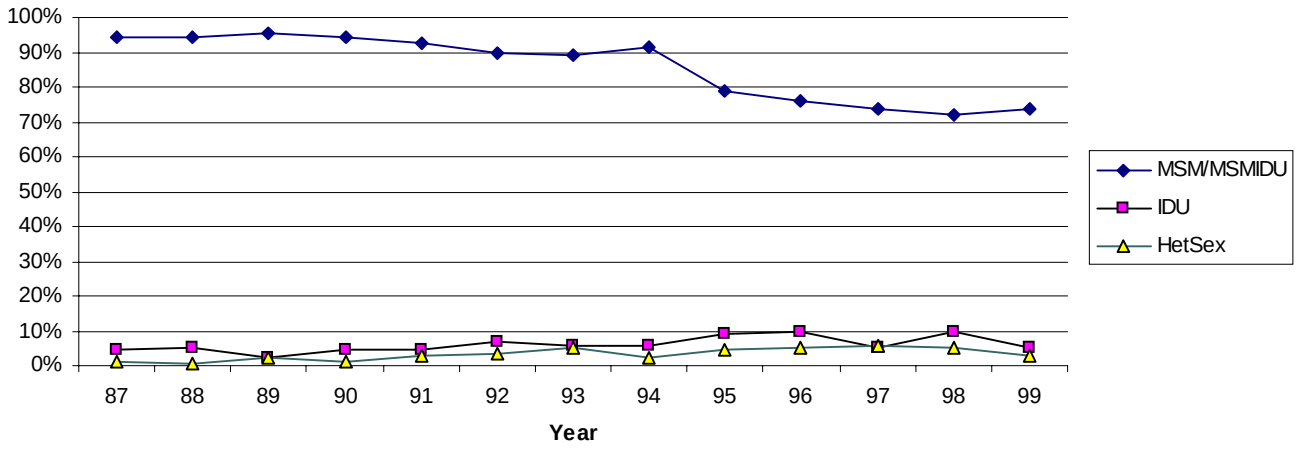


Figure 3. Trends in the percent of total AIDS cases in King County by sex, 1986-1999

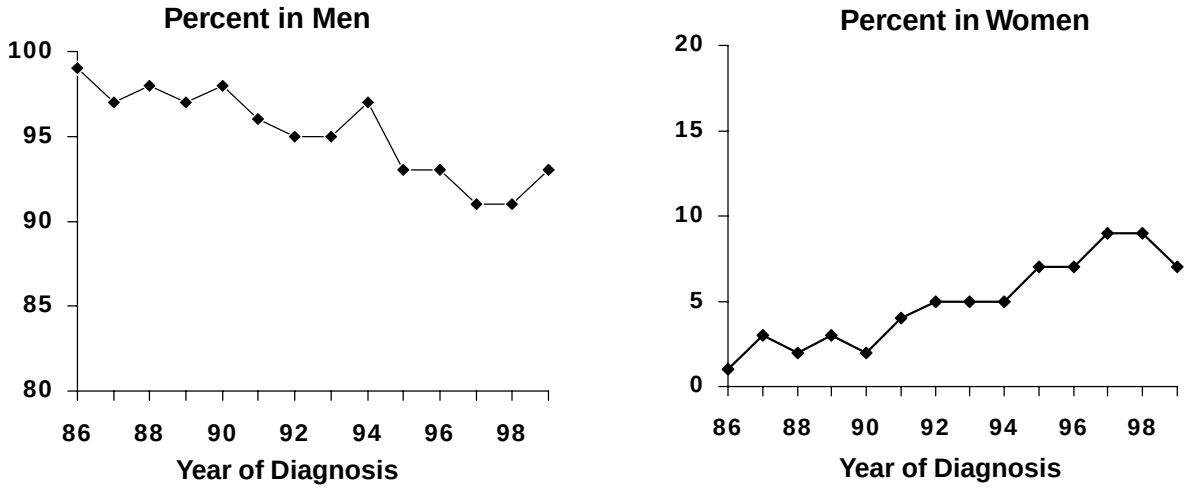


Figure 4. Trends in the percent of total AIDS cases in King County by race, 1987-1999

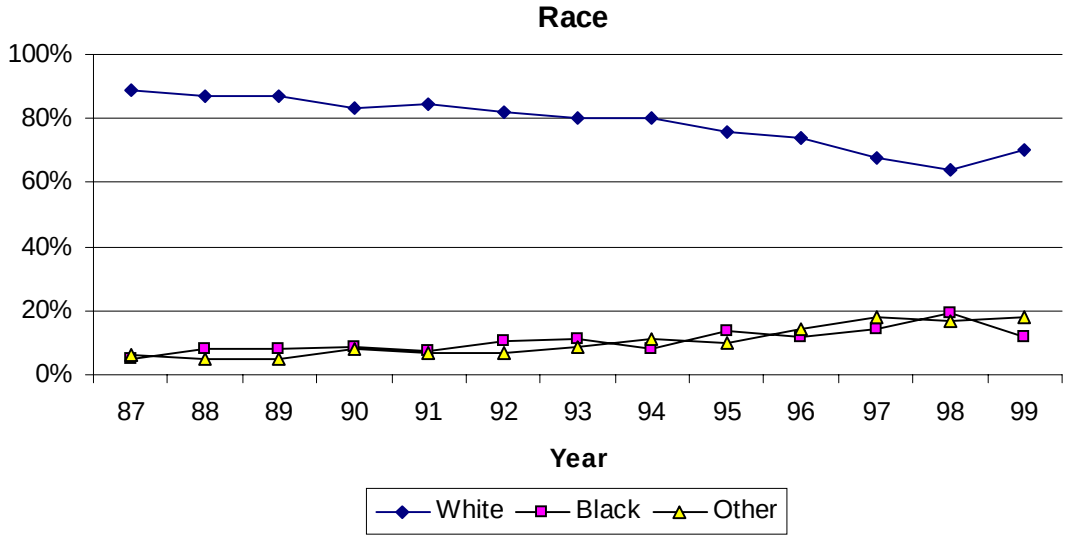


Table 1. AIDS in King County by Geographical Region*, 1982-1999

	City of Seattle		KC outside Seattle	
	No.	%	No.	%
SEX				
Male	4,659	96%	967	91%
Female	171	4%	93	9%
RACE/ETHNICITY				
White, not Hispanic	3,906	81%	844	80%
Black, not Hispanic	475	10%	113	11%
Hispanic	278	6%	74	7%
Asian/Pacific Islander	94	2%	20	2%
Am. Indian/AK Native	77	2%	9	1%
EXPOSURE CATEGORY				
Male/male sex	3,761	78%	709	67%
Injection drug use (IDU)	245	5%	75	7%
IDU & male/male sex	523	11%	81	8%
Heterosexual contact	113	2%	71	7%
Undetermined/other/pediatric exposures	188	4%	124	12%
TOTAL CASES*	**4,830**	**82%**	**1,060**	**18%**

*Excludes 2 cases whose residence within KC was unknown at the time of AIDS diagnosis

ated with heterosexual transmission (Figure 5). The routes of HIV transmission for KC adult male AIDS cases remained relatively stable between 1987 and 1994. In 1995 and 1996, however, a higher proportion of cases (7%) were associated with IDU and a lower proportion with male-male sex (75%) compared to previous years (data not shown). In 1999, 69% of adult/adolescent male cases were attributed to MSM, 5% to IDU, 11% to MSM/IDUs, 3% to heterosexual sex and 11% were reported without a specified risk factor and are undergoing epidemiologic investigation to determine their HIV exposure route.

Nationwide, 56% of all cumulative adult/adolescent male cases were exposed through sex with another man, 8% through male/male sexual contact and IDU, 22% through IDU, and 4% via heterosexual contact. In 1999, the proportion of US adult/adolescent male cases attributed to sex with another male decreased to 44%, while that for heterosexual contact increased to 8%. In this year, 20% of the adult males were exposed by IDU and 5% had the combined risk of male/male sex and IDU.

Among the 257 cumulative adult/adolescent female AIDS cases in KC, 48% were exposed by heterosexual contact and 29% by IDU (Figure 5). Further exposure characterization of the 48% attributed to heterosexual contact showed that 16% were exposed by sex with an IDU, 7% with a bisexual man, 2% with a transfusion or blood product recipient, and 23% with an HIV-infected man whose transmission route was not identified on the case report form. Of the cumulative adult/adolescent female cases, 16% did not have an identified mode of exposure. In 1998 to 1999, 24% of the female cases reported were exposed by IDU and 24% by heterosexual contact; however, 45% of these cases did not have an exposure mode identified on the case report form and are undergoing epidemiologic follow-up to determine their HIV risk.

Among KC women with AIDS, fewer were related to injection drug use and a greater proportion were related to heterosexual contact as compared to the nation as a whole. Nationwide, 40% of the cumulative AIDS cases in women have been attributed to heterosexual contact, 42% to IDU, and about 15% to different or unknown exposure modes. In 1999 alone, 40% were exposed by heterosexual contact, 27% by IDU, and about 32% had other or unknown exposure modes.

Universal screening of blood for HIV antibody began in 1985. The effects of the virtual elimination of HIV transmission through blood transfusion and clotting products are reflected

Table 2. AIDS in King County: Cases diagnosed through 1999 and reported as of 6/30/00

Category	Cases diagnosed in 1995		Cases diagnosed in 1996		Cases diagnosed in 1997		Cases diagnosed in 1998 [a]		Cases diagnosed in 1999 [a]		Cumulative Cases Reported 1982-1999 [b]	
TOTAL CASES	503		412		289		225		129		5,890	
SEX	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Male	469	93%	383	93%	265	92%	205	91%	120	93%	5,626	96%
Female	34	7%	29	7%	24	8%	20	9%	9	7%	264	4%
RACE/ETHNICITY												
White, not Hispanic	383	76%	304	74%	197	68%	145	64%	90	70%	4,750	81%
Black, not Hispanic	70	14%	51	12%	40	14%	43	19%	16	12%	588	10%
Hispanic	34	7%	36	9%	32	11%	25	11%	19	15%	352	6%
Asian/Pacific Islander	10	2%	9	2%	9	3%	6	3%	2	2%	114	2%
Am. Indian/AK Native	6	1%	12	3%	11	4%	6	3%	2	2%	86	1%
AGE AT DIAGNOSIS												
<13 (yrs)	1	<1%	3	1%	1	<1%	0	0%	0	0%	14	<1%
13-19	0	0%	1	<1%	1	<1%	0	0%	1	<1%	12	<1%
20-29	72	14%	57	14%	44	15%	30	13%	17	13%	1002	17%
30-39	237	47%	209	51%	141	49%	109	48%	60	47%	2,872	49%
40-49	137	27%	114	28%	70	24%	57	25%	42	33%	1,472	25%
>49	56	11%	28	7%	32	11%	29	13%	9	7%	518	9%
HIV EXPOSURE[c]												
Male/male sex	354	70%	282	68%	181	63%	141	63%	83	64%	4,470	76%
Injection drug use (IDU)	47	9%	35	9%	15	5%	22	10%	7	5%	320	5%
IDU & male/male sex	46	9%	31	8%	33	11%	22	10%	13	10%	604	10%
Heterosexual contact	21	4%	22	5%	16	6%	11	5%	4	3%	184	3%
Hemophilia	1	<1%	3	1%	3	1%	0	0%	0	0%	29	1%
Transfusion/transplant	1	<1%	0	0%	3	1%	2	1%	1	1%	52	1%
Parent at risk/has HIV	1	<1%	3	1%	1	<1%	0	0%	0	0%	13	<1%
Undetermined/other	32	6%	36	9%	37	13%	27	12%	21	16%	218	4%
Deaths During Period	**451**		**285**		**106**		**88**		**45**		**3,528**	

[a] Provisional data due to reporting delays
[b] Cumulative cases in King County residents meeting the 1993 CDC surveillance case definition of AIDS diagnosed through 12/31/99 and reported as of 5/31/2000; includes cases diagnosed prior to 1993
[c] Cases with more than one risk factor other than the combinations given are tabulated only in the category listed first

Table 3. AIDS cases diagnosed in King County in 1997-1999 and average annual rates per 100,000 population by race/ethnicity

	MALE		FEMALE		TOTAL	
RACE/ETHNICITY	No.	Rate (95% CI)	No.	Rate (95% CI)	No.	Rate (95% CI)
White, not Hispanic	380	19.1 (17.2-21.1)	19	0.9 (0.6-1.5)	399	10.0 (9.0-11.0)
Black, not Hispanic	74	54.2 (42.6-68.1)	23	17.3 (11.0-25.9)	97	36.0 (29.2-43.9)
Hispanic	63	69.2 (53.2-88.5)	1	1.1 (0.0-5.8)	64	35.9 (27.7-45.9)
Asian/Pacific Islander	13	5.3 (2.8-9.0)	4	1.5 (0.4-3.9)	17	3.4 (2.0-5.4)
American Indian/ Alaska Native	16	60.0 (34.4-97.3)	2	7.2 (0.8-24.6)	18	33.0 (19.6-52.1)
TOTAL, FOR ALL RACES	**546**	**21.9 (20.1-23.8)**	**49**	**1.9 (1.4-2.6)**	**595**	**11.9 (10.9-12.9)**

* Rates in this table were calculated by summing cases diagnosed during 3 year period 1997-1999 divided by the sum of population estimates for each racial/ethnic group for each of the 3 years. Population data were extrapolated from the 1990 U.S. census.

in declining numbers of AIDS cases attributed to blood product exposure in recent years. In 1999, one KC AIDS case due to a transfusion was reported and there were no cases reported in persons with hemophilia.

Race/Ethnicity

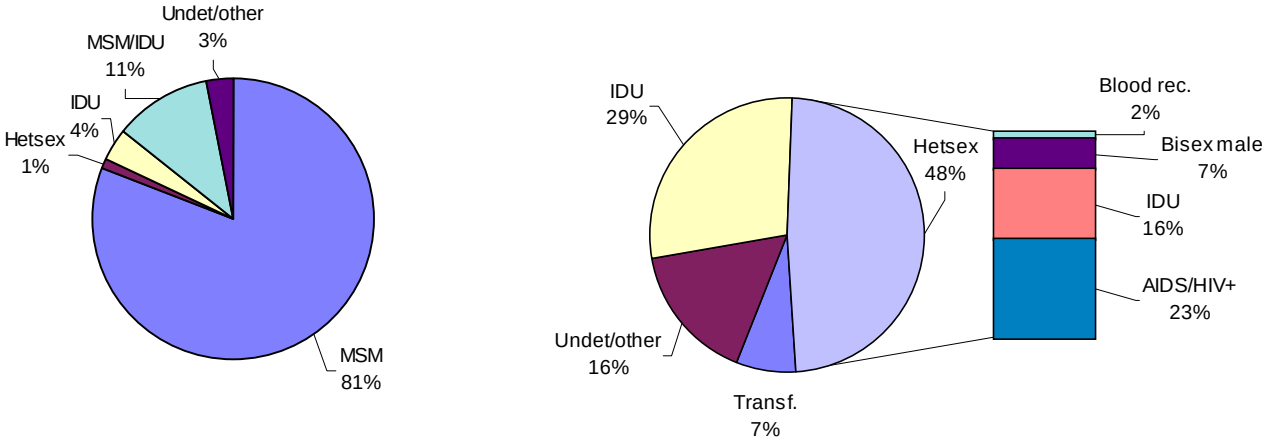
The majority of AIDS cases in KC have occurred among Whites. In the 1990s, however, people of color have comprised an increasing proportion of AIDS cases. People of color were 11% of cases in 1982-86, 14% in 1987-91, 19% in 1992-94, 25% in 1995-96, 32% in 1997, 36% in 1998 and 43% in 1999. The proportion of KC AIDS cases occurring among Blacks rose steadily from 5% in 1987 to 19% in 1998 although the proportion was somewhat lower in 1999 (12%, see Figure 4). In the same time interval, the proportion of cases in persons of Hispanic ethnicity increased from 3% to 15% and cases among Native Americans went from 1% to 3%. African Americans and Hispanics also account for a disproportionate number of cases relative to their population in the county.

AIDS cases were diagnosed among Blacks and persons of Hispanic ethnicity for the 3-year period of 1997-99 at the average annual rate of 36.0 per 100,000 and 35.9 per 100,000, respectively (Table 3). This compares to a rate of 10.0 for Whites. For each racial/ethnic category, rates were considerably higher for males than females. Overall the rate in males was 21.9 per 100,000 compared to 1.9 in females, a 12-fold difference (Table 3). It is important to note that with the exception of Asian/Pacific Islanders the average annual rates for each racial/ethnic group continue to be significantly higher than that for Whites.

National statistics also show the marked disproportionate burden of AIDS among people of color. African Americans, who are 12% of the US population, comprise 37% of cumulative AIDS cases. Hispanics total about 9% of the population but are 18% of cases. The AIDS rate for US cases reported in 1999 was 66.0 per 100,000 for African Americans and 25.6 for Hispanics compared to 7.6 for Whites. [1]

The proportion of cases by race varied between females and males in KC. Black males comprised 14% of the male cases diagnosed between 1997 and 1999 and had approximately three times the AIDS rate of White men. Black

Figure 5. Adult/adolescent AIDS cases diagnosed in King County through 1999 by gender and exposure category



Males: No.=5,619 **Females: No.=257**

females were 47% of the female cases and had a rate 19 times higher than White females (Table 3). Nationwide, the relative difference between rates in Blacks and Whites by sex shows an even greater discrepancy. For US AIDS cases reported in 1999, the rates in Black males and females were 8 and 21 times higher than the rates in White males and females, respectively. [1]

Mode of HIV exposure varied by race (data not shown in tables). Among cumulative White male AIDS cases in KC, 93% had male/male sexual contact with (11%) or without (82%) injection drug use, 3% were reported as heterosexual IDUs, and 1% of the cases were exposed through heterosexual contact. African American males were less likely than White males to have been exposed through male/male sex (69%) and more likely to have acquired HIV through IDU (15%) or heterosexual contact (4%).

Among the 337 male Hispanic cases in KC, 81% were reported with male/male sexual contact, 9% with IDU, and 3% with heterosexual transmission. Among the 73 Native American males reported with AIDS, 84% were exposed through male/male sex, including 26% who were reported as MSM who also injected drugs, 10% were heterosexual IDU, and 1% with heterosexual transmission. The HIV risk in the 106 reported male Asian/Pacific Islanders most closely resembled White cases with 87% in men who have sex with men, 3% in heterosexual drug injectors, and 1% with heterosexual transmission.

Among the 264 cumulative female KC AIDS cases there were some differences by race in mode of exposure. Twenty-six percent of the 149 White women with AIDS had IDU exposure, 52% had heterosexual risk, and 12% unidentified risk. Among 79 African American women with AIDS, 34% had IDU exposure, 39% heterosexual, and 19% unidentified risk.

The number of female cases in KC that were Hispanic (15), Asian (8) and American Indian/Alaska Native (13) was too small to make fully reliable comparisons of mode of exposure. Nevertheless, the distribution of exposure risk was as follows: for Hispanics, 7% had IDU exposure, 60% had heterosexual risk and 13% had no identified risk. For Asians, 38% had heterosexual risk and 50% had no identified risk. Sixty-nine percent of American Indian/Alaska Native women had IDU exposure, 23% had heterosexual exposure and 8% had no identified risk.

Age at Diagnosis

AIDS affects persons at a relatively young age. Almost half (49%) of all KC AIDS cases were between 30 and 39 years old at the time of

their AIDS diagnosis, 25% were 40 to 49 years old, and 17% were 20 to 29 years old (Table 2). A higher proportion of female (29%) than male (17%) cases was under 30 at the time of their AIDS diagnosis. A similar gender difference is seen for all US cases.

In KC, a cumulative total of 14 pediatric AIDS cases had been diagnosed through 1999, with 7 of these diagnosed since 1992. A cumulative total of 12 adolescent (age 13-19) AIDS cases had been reported, with 6 of these diagnosed since 1992.

Comments

The first AIDS case in a King County resident was diagnosed 18 years ago, in 1982. During the initial phase of the epidemic new cases accumulated rapidly. Although case numbers continued to increase every year through the first decade, the rate of increase slowed significantly after 1989 with cases peaking in 1993 and declining since then. This trend is primarily due to declining annual number of AIDS cases among MSM with lesser declines among other risk categories. The proportion of AIDS cases among people of color continues to increase and that among women has increased steadily since 1990, although it declined somewhat in 1999. This overall pattern reflects a peak in HIV transmission among MSM which is believed to have occurred in the early 1980s.

In 1996, for the first time, there was a significant drop in deaths among persons diagnosed with AIDS with a concomitant increase in the number of persons living with AIDS. This effect is attributed primarily to improvements in the clinical monitoring and treatment of HIV disease. The trend continues to date, although there is evidence that the rate of decline is slowing.

While the decrease in new annual AIDS cases and AIDS deaths is extremely encouraging, AIDS remains a very significant health issue in King County. Currently an estimated 2,360 persons are living with AIDS, an increase of almost 300 persons over the past two years. Current estimates suggest that about 6,000-8,000 persons in KC are living with HIV infection. With the implementation of HIV infection reporting in late 1999, we expect to have a better overall picture of the impact of HIV and AIDS on our community within the next 2-3 years as HIV case reports are recorded and data analyzed.

Other Public Health-Seattle & King County publications on the epidemiology of HIV and AIDS in KC are available. The HIV/AIDS Epidemiology Fact Sheets include general reports on HIV and AIDS in KC as well as targeted populations including MSM, substance users, people of color, women, young people, homeless adults and heterosexuals. The KC *HIV/AIDS Epidemiology Profile for Community Planning* is an extensive report which presents local data on HIV, AIDS, STDs and other surrogate measures useful for planning HIV prevention and education programs.

If you would like any of these publications, please call the HIV/AIDS Epidemiology Program at (206) 296-4645. Most can also be accessed from Public Health-Seattle & King County's WEB home page under the AIDS Information section at: http:// www.metrokc.gov.health.

Questions about AIDS surveillance and epidemiology in King County may be addressed to epidemiologists Dr. Sharon Hopkins or Katherine Faricy at the HIV/AIDS Epidemiology Unit at Public Health - Seattle & King County at (206) 296-4645. Or email them at:

- *Sharon.Hopkins@metrokc.gov*
- *Katherine.Faricy@metrokc.gov*

❑ *Contributed by Susan Barkan PhD, Katherine Faricy MPH, and Sharon Hopkins DVM, MPH*

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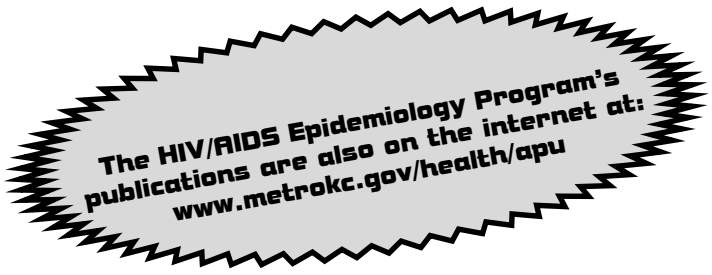
[1]Centers for Disease Control and Prevention. **HIV/AIDS Surveillance Report**, 1999;11(No. 2):1-44.



Geographic Distribution of AIDS in King County

Mapping of the residence of AIDS patients at the time of diagnosis generally reveals marked concentrations of cases in urban areas of greatest population density. Within Washington, the majority of cases reside in King County, although the County's proportion of cases has dropped from about 75% in the late 1980s to 50-60% in recent years. There is also great geographic variation in where AIDS cases occur within King County, with about 80% of cases residing within the city of Seattle at the time of AIDS diagnosis. This information is important in planning AIDS care services and in targeting HIV prevention efforts.

For this report, the rates of AIDS cases per 100,000 population diagnosed from 1997-1999 and reported through May 30, 2000 are calculated by geographical area in King County. Data from 1999 are provisional because of reporting delay. The rates will increase when all diagnosed cases are reported, however reporting delay is not expected to affect the relative differences between geographical areas.

The population for each area for each of the three years was estimated by extrapolation from the U.S. Bureau of Census 1990 census. Geographical areas used are based on aggregations of census tracts which were originally designed by Public Health-Seattle & King County to correspond as closely as possible with neighborhoods, utilization of clinics, travel patterns, and other factors of community interaction. Since census tract is not recorded for AIDS cases, some change in these boundaries was necessitated by the fact that ZIP codes overlap some census tracts. As a result, geographical areas do not correspond precisely to city boundaries.

The confidence intervals take into account the degree of variability in the data and represent the range of values within which, upon repeated measure, the rate can be expected to fall 95% of the time. ZIP codes are shown in Table 1. Cumulative AIDS cases, AIDS cases diagnosed 1997-1999, annual rates per 100,000, and 95% confidence intervals (CI) are shown in Table 2.

As previously reported, the highest rates for AIDS were in Seattle, with lower rates occurring in King County outside Seattle. The overall average annual rate for Seattle was 22.3 (all rates are per 100,000 population). Within Seattle, rates ranged from 8.7 in North Seattle to 99.1 in the Central area. It is important to note that there continues to be a significant decline in the overall average annual rate of AIDS in Seattle since the 1993-1995 report in which the average annual rate was 70.8 per 100,000.

The overall average annual rate for King County outside Seattle also declined, to 4.3 per 100,000. Rates ranged from 8.7 in Bellevue to 1.2 in Southeast counties, and zero cases on Vashon Island during this three year period. While rates of AIDS actually increased in one area, Bothell/Woodinville, it should be noted that rates from areas with small populations will vary as new cases accrue, and should be interpreted with caution.

❑ *Contributed by Susan Barkan PhD*

Table 1. ZIP Codes by Geographical Area

SEATTLE	
Central	98101, 98104, 98111, 98114, 98121, 98122
North	98125, 98133, 98155, 98160, 98177
North Central	98102, 98109, 98112, 98119, 98199
North of Canal	98103, 98105, 98107, 98115, 98117, 98145, 98195
Southeast	98108, 98118, 98124, 98134, 98144
West	98106, 98116, 98126, 98136

KING COUNTY OUTSIDE SEATTLE	
Auburn	98001, 98002, 98047, 98071
Bellevue	98004, 98005, 98007, 98008, 98009, 98039
Bothell/Woodinville	98011, 98028, 98041, 98072

KING COUNTY OUTSIDE SEATTLE (CONTINUED)	
Burien/Highline	98062, 98138, 98148, 98158, 98166, 98188, 98198
East/Northeast County	98014, 98019, 98024, 98045, 98050, 98051, 98065, 98068, 98224, 98288
Eastgate/Issaquah	98006, 98027, 98029
Federal Way	98003, 98023, 98054, 98063
Kent	98031, 98032, 98035, 98064
Kirkland/Redmond	98033, 98034, 98052, 98053, 98073, 98083
Mercer Island	98040
Renton	98055, 98056, 98057, 98058, 98059
Southeast County	98010, 98022, 98025, 98038, 98042, 98048
Vashon	98013, 98070
White Center/Skyway	98146, 98168, 98178

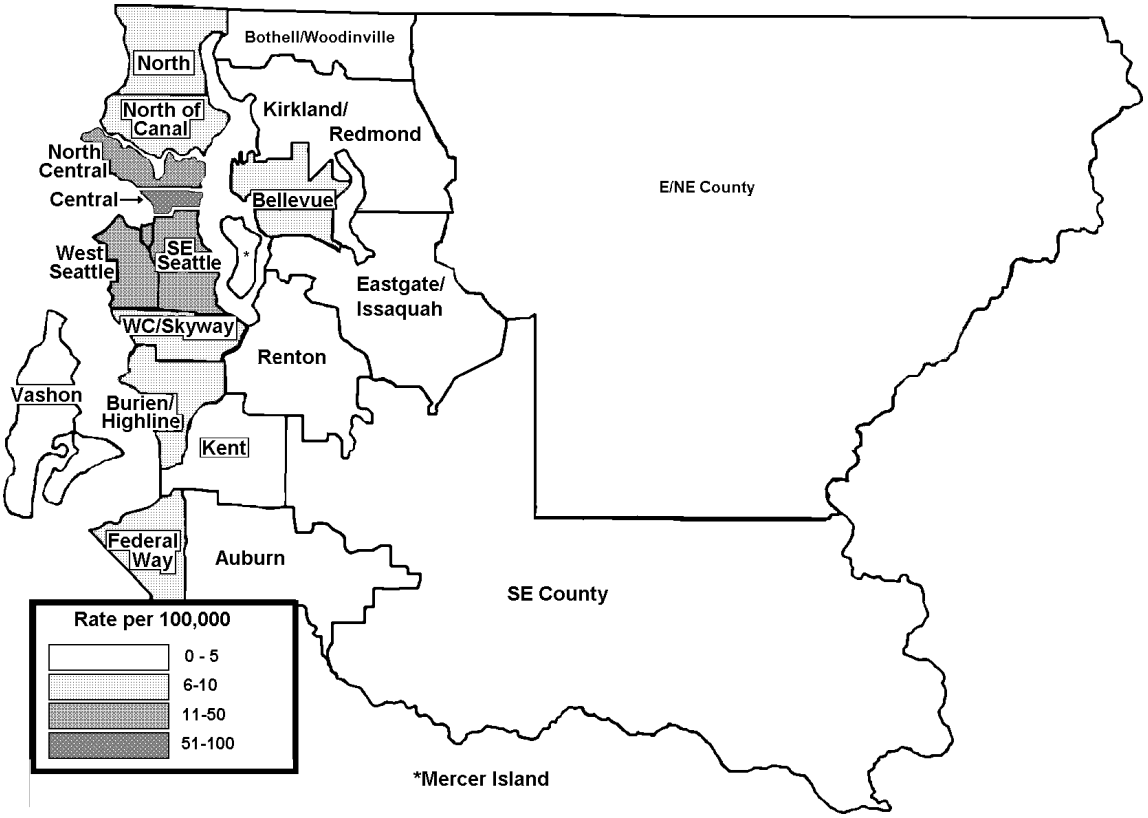


Table 2. Average Annual AIDS Rates by Geographical Area in King County, 1997-1999

GEOGRAPHICAL AREA	Cumulative AIDS Cases 1982-99	AIDS CASES 1997--99	RATE PER 100,000	LOWER 95% CI	UPPER 95% CI
SEATTLE					
Central	1,400	142	99.1	83.5	116.7
North Central	1,582	120	43.0	35.7	51.5
North of Canal	598	47	9.3	6.8	12.3
North	296	34	8.7	6.0	12.1
Southeast Seattle	374	29	11.5	7.7	16.6
West Seattle	306	30	13.0	8.8	18.6
Subtotal	4,556	402	22.3	20.2	24.6
NON-SEATTLE					
Auburn	60	7	2.7	1.1	5.4
Bellevue	150	22	8.7	5.5	13.2
Bothell/Woodinville	40	5	2.3	0.7	5.3
Burien/Highline	135	15	6.5	3.6	10.6
East/Northeast County	27	4	3.7	1.0	9.4
Eastgate/Issaquah	41	6	2.6	0.9	5.5
Federal Way	95	18	7.0	4.2	11.1
Kent	91	12	4.5	2.3	7.8
Kirkland/Redmond	108	13	2.8	1.5	4.8
Mercer Island	23	3	4.6	0.9	13.1
Renton	84	14	4.1	2.3	6.9
Southeast County	33	3	1.2	0.2	3.3
Vashon	23	0	--	--	--
White Center/Skyway	133	15	6.5	3.6	10.6
Subtotal	1,043	137	4.3	3.6	5.0
ZIP UNKNOWN/HOMELESS	230	56	--	--	--
ALL KING COUNTY	**5,829**	**595**	**11.9**	**10.9**	**12.9**

Home Collection HIV Testing in Washington State

In Washington State, it is estimated that about 12,000 individuals are infected with HIV and that about with 600 new infections occur every year.[1] In recent years, those HIV-infected individuals who are aware of their status have benefited from developments in treatment of HIV and prevention or treatment of opportunistic infections that can accompany HIV. However, these developments mean little to those infected individuals who are unaware of their serostatus.

The HIV epidemic in the state, as well as the nation, has centered around men who have sex with men (MSM) and intravenous drug users (IDU). However, recent trends show that higher proportions of minority populations, heterosexuals, and younger individuals are becoming infected. There is still no cure or vaccine for HIV so the best means to prevent the spread of disease remains behavioral risk reduction. In order to participate most effectively in risk reduction, people need to be aware of their HIV serostatus. New evidence suggests that certain people recently diagnosed with HIV will adopt safer behaviors.[2]

National studies have shown that, regardless of the desire to be tested for HIV, many have not been tested due to barriers such as failure to acknowledge risk, fear, inconvenience and privacy concerns.[3,4,5] The Centers for Disease Control and Prevention (CDC) estimate that over one-third of HIV-infected people living in the United States are unaware of their HIV+ status.[6] For these people, the missed opportunities for prevention and treatment are many.

Technological advances have allowed new methods of HIV testing to be developed. In addition to the standard blood test, methods for rapid testing, oral specimen testing, and urine testing are being used. The home testing kit, which uses the same technology as the standard blood test, was also devised. These tests were developed to allay fears of not only venipuncture, but also much-publicized issues surrounding privacy. Results from the 1992 National Health Interview Survey found that people with less access to health care, less education, and lower incomes would be more likely to use a home testing kit.[7] Further results showed that Black and Hispanic participants would be more likely to use a home test and that the availability of a home test would deter blood donation as a means of HIV testing.[7] Overall, a substantial number of participants expressed an interest in using a home collection test as a means of HIV testing.

Despite this interest, there continue to be arguments against home HIV testing. These include lack of traditional post-test counseling; the possibility of a higher occurrence of false positive results; whether to restrict purchase by minors; compatibility with state HIV reporting laws; and abuse of the tests by parents, employers, insurers or health care providers.[8]

In 1996, the Food and Drug Administration (FDA) approved two products, one by Home Access Health Corporation and the other by Direct Access Diagnostics, for HIV testing by home sample collection. National analyses of data from these two corporations found that most of the users were heterosexual, male and of Caucasian race.[9] HIV prevalence was highest among African Americans and Hispanics, males, 35-44 year olds, MSM and IDU.[9] Overall, 97% of users called for their results and HIV prevalence was 0.9%.[9] In 1997, Direct Access Diagnostics withdrew their product from the market due to lack of demand. Today, Home Access remains as the only FDA-approved HIV home sample collection test.

Methods

Data from Home Access Health Corporation (HAHC, Hoffman Estates, IL) were included in this analysis. The test can be bought at select stores in Washington (Rite Aid, Walgreens, Wal-Mart, Drug Emporium, ShopKo and Bartell's Drug) or can be ordered through Home Access. A touch tone phone is required to register the kit and provide demographic and behavioral information before a specimen is submitted. A blood sample is collected on filter paper by a self-administered finger prick and submitted by mail for testing. A second call must be made to obtain test results and receive post-test counseling and referrals if de-

sired. The test results are available in either three or seven days from mail-in.

The data for this analysis were extracted from the HAHC database to include only those tests that indicated Washington State residence. A positive result was defined as having a positive ELISA test with a confirmatory positive Immunofluorescent Antibody Assay (IFA) test. Post-test counseling was defined as those who chose to talk to a live counselor after receiving their results. Partner notification was defined as: 1) the user indicated notifying his/her partner or, 2) the user requested the counselor discuss the test result with their partner.

This analysis represents the number of tests performed, which may not be indicative of the number of individuals using the product. Only those who provided a zip code in Washington State were included. The test is anonymous and repeat users cannot be identified. Furthermore, from January 1, 1997 through December 31, 1997, Snohomish Health District and Public Health-Seattle & King County participated in a national multicenter evaluation of home collection kits.[2] Data presented may reflect higher usage in Washington State AIDSNET Regions 3 and Region 4 than what would have actually be seen in the absence of such a study.

Results

A total of 2,739 tests were submitted to HAHC from Washington State from August 1996 through December 1999. A comparison of the completeness of information of Washington State to national data for the same time period is shown in Table 1. Washington ranked 15th out of 55 states/territories for number of tests submitted during this time period.[10] One hundred and seventy nine samples (6.5%) were unsuitable for testing because the sample had clotted, become contaminated, contained an inadequate amount of blood, or was submitted too long after it was obtained.

User demographics and behaviors are presented in Table 2. The majority of users were White (87.3%), spoke/understood English (99.8%), and were ages 25 through 44 years (62.1%). A slightly higher proportion of Hispanic males submitted samples versus Hispanic females (2.2% vs. 1.5%) and a slightly higher proportion of Native American females than males submitted samples (2.2% vs. 0.9%). A higher proportion of females under the age 25 submitted samples than males (25.6% vs. 13.7%). More samples (49.8%) were submitted from Region 4 (King County) than any other AIDSNET region.

Sixty-five percent of users were not identified as being at risk of HIV infection. The risk most commonly reported was MSM (18.3%) followed by exposure to a blood product (11.9%). Among males, the most commonly reported risk was MSM (29.5%); for females it was exposure to a blood product (11.6%). The majority of users, both male and female, had been previously tested (overall, 53.5%). Only 2 of the users reported a previous positive test result; however, 55 (2%) expected a positive test result from the sample they submitted.

Of the 2,560 tests with recorded results, 22 samples (0.9%) had a positive ELISA test; however, only 19 of the 22 had a positive IFA confirmatory test. Overall, 2541 (99.3%) had negative HIV test results.

Table 3 describes characteristics of those who tested positive compared to those who tested negative. Of the 19 who tested positive by both

Table 1. Home Collection HIV Testing: Comparison of Washington State versus national data for completeness of information

	Washington State	National Data[8]
Number of tests	2,739	222,403
Specimen unsuitable	179 (6.5%)	13,379 (6.0%)
Zip code data provided	2,717 (99%)*	114,961(56.1%)**
Race information provided	2,677 (97.7%)	~ 137,890 (62%)
Gender information provided	2,730 (99.7%)	~ 155,682 (70%)

***All data received had Washington State zip code data available, 1% of the data had invalid zip codes. These data do not include tests that might have been from Washington but without zip code information, therefore, the value may be overestimated**
**** This number reflects data that had missing/invalid zip code information.**

Table 2. Demographic characteristics and behaviors of Washington State residents using home collection HIV testing, 8/96-12/99

	Male	Female	Total
Race/Ethnicity			
White	1490(87.7%)	897(87.0%)	2390 (87.3%)
African American	44(2.6%)	28(2.7%)	72 (2.6%)
Hispanic	38(2.2%)	15(1.5%)	53 (1.9%)
Asian	42(2.5%)	22(2.1%)	64 (2.3%)
Native American	16(0.9%)	23(2.2%)	39 (1.4%)
Other	34(2.0%)	24(2.3%)	59 (2.2%)
Missing	35(2.1%)	22(2.1%)	62 (2.3%)
Language			
English	1695(99.8%)	1029(99.8%)	2733(99.8%)
Spanish	4(0.2%)	0(0%)	4(0.1%)
Missing	0(0%)	2(0.2%)	2(0.1%)
Age Group			
Under 18	14(0.8%)	23(2.2%)	37 (1.4%)
18-24	220(12.9%)	241(23.4%)	462 (16.9%)
25-34	623(36.7%)	346(33.6%)	972 (35.5%)
35-44	481(28.3%)	247(24.0%)	728 (26.6%)
45-54	251(14.8%)	126(12.2%)	378 (13.8%)
Over 55	84(4.9%)	32(3.1%)	116 (4.2%)
Missing	26(1.5%)	16(1.6%)	46 (1.7%)
AIDSNET Region			
Region 1	102 (6.1%)	50 (4.9%)	152 (5.6%)
Region 2	84 (5.0%)	55 (5.4%)	139 (5.1%)
Region 3	334 (19.8%)	282 (27.6%)	616 (22.7%)
Region 4	877 (52.0%)	470 (45.9%)	1353 (49.8%)
Region 5	137 (8.1%)	78 (7.6%)	217 (8.0%)
Region 6	151 (9.0%)	88 (8.6%)	240 (8.8%)
Total	1685 (62.2%)	1023 (37.8%)	2717 (100%)
Reported Risk Factor			
MSM	501(29.5%)	0(0%)	501 (18.3%)
IDU	44(2.5%)	1(<0.00%)	45 (1.6%)
MSM/IDU	43(2.5%)	0(0%)	43 (1.6%)
Heterosexual*	19(1.1%)	23(2.2%)	42 (1.5%)
Exposed to blood	206(12.1%)	120(11.6%)	327 (11.9%)
Not at Risk	886(52.1%)	887(86.0%)	1781 (65.0%)
Previously Tested			
Yes	924(54.4%)	539(52.3%)	1465 (53.5%)
No	741(43.6%)	472(45.8%)	1216 (44.4%)
Missing	34(2.0%)	20(1.9%)	58 (2.1%)
Previous Result			
Positive	2(0.1%)	0(0%)	2 (0.1%)
Negative	904(53.2%)	526(51.0%)	1432 (52.3%)
Indeterminate	8(0.5%)	5(0.5%)	13 (0.5%)
Unknown	4(0.2%)	6(0.6%)	10 (0.4%)
Missing	781(46.0%)	494(47.9%)	1282 (46.8%)
Expected Result			
Positive	40(2.4%)	15(1.5%)	55 (2.0%)
Negative	1380(81.2%)	824(79.9%)	2208 (80.6%)
Missing	279(16.4%)	192(18.6%)	476 (17.4%)
Post Test Counseling			
Yes	137(8.1%)	106(10.3%)	244 (8.9%)
No	1562(91.9%)	925(89.7%)	2495 (91.1%)
TOTAL**	**1699 (62.2%)**	**1031 (37.8%)**	**2739 (100%)**

*Heterosexual contact with high-risk partner
**Excluding AIDSNET Region section

Table 3. Testing patterns of Washington State residents using home collection HIV testing by HIV test result

	HIV Positive	HIV Negative	Result Missing
Previously tested			
Yes	11 (57.9%)	1376 (54.2%)	78 (43.6%)
No	8 (42.1%)	1130 (44.5%)	78 (43.6%)
Missing	0 (0%)	35 (1.4%)	23 (12.8%)
Previous test result			
Positive	2 (10.5%)	0 (0%)	0 (0%)
Negative	9 (47.4%)	1351 (53.2%)	72 (40.2%)
Indeterminate	0 (0%)	9 (0.4%)	4 (2.2%)
Unknown	0 (0%)	8 (0.3%)	2 (1.1%)
Missing	8 (42.1%)	1173 (46.2%)	101 (56.4%)
Expected result			
Positive	4 (21.1%)	43 (1.7%)	8 (4.5%)
Negative	4 (21.1%)	2080 (81.9%)	124 (69.3%)
Missing	11 (57.9%)	418 (16.5%)	47 (26.3%)
Call-in results			
Received results at least once	17 (89.5%)	2452 (96.5%)	164 (91.6%)
Did not receive results	2 (10.5%)	89 (3.5%)	15 (8.4%)
Post-test counseling			
Received post-test counseling	7(36.8%)	175(6.9%)	62(34.6%)
No post-test counseling	12(63.2%)	2366(93.1%)	117(65.4%)
Partner Notification			
Partner notification	2(10.5%)	NA	NA
No partner notification	17(89.9%)	NA	NA

the ELISA and IFA tests, 11 (57.9%) had been previously tested, 2 (10.5%) had had a previous positive test, and 4 (21.1%) had expected the test result to be positive. Of those who tested positive, 17 (89.5%) called at least once for their results, 7 (36.8%) received post-test counseling and 2 (10.5%) had partner notification done. Overall, the majority of users did not have post-test counseling (91.1%) (Table 2).

Discussion

Data collected from those using home collection testing kits in Washington State look similar to HIV data collected from publicly-funded counseling and testing clinics in Washington State in regards to demographic composition and seroprevelance during the same time period except the clinics reported a higher proportion Blacks (11% vs. 3%) and Hispanics (7% vs. 2%), IDU (18% vs. 2%) and heterosexual risk (13% vs. 2%). This may be due to use of a more detailed questionnaire regarding risk categories that is used at the clinics. While the majority of home test users did not indicate they were at risk for HIV infection (65%), only 4% of those testing at a publicly-funded clinic reported no risk.[10]

A higher number of users than expected (12%) reported their risk as being exposure to a blood product. This finding points to the need for education regarding blood products in the United States and the low risk of receiving blood that is contaminated. It may also point to home testing as an alternative for people who have been exposed to a blood product and want to know if they have been infected. This option affords anonymity and reassurance while preserving publicly funded counseling and testing sites for high-risk groups.

An interesting finding was that the majority of users (54%) had reported having been tested previously with a negative test result, however, 42% of those testing positive were not previously tested. Re-testing could mean that people continue to put themselves at risk. Some people may use repetitive testing as a

means of "practicing" prevention. A higher number reported they expected a positive result than actually had a positive result, again indicating people believe they are engaging in high-risk activities. Infected persons were more likely to predict a positive result than were uninfected persons (21% vs. 2%).

The high response rate of users calling for their results is promising. The range for number of times a user called for the result was 0 and 4, with 1 being the most common answer. Almost 21% of the users called 2 or 3 times for their result. However, 2 (10.5%) of 19 HIV positive users did not access their results compared to 3.5% of persons testing negative.

Overall, the use of home collection HIV testing is a viable option for Washington State residents. The test appears to be relatively easy to use (only 6.5% of the samples were unsuitable for use) and obtain although the cost of the kit could be a barrier ($55 kit for results in three days, $44 for results in seven days). The low percentage of those receiving post-test counseling is concerning, especially with users reporting risky behaviors and repeat testing. However, the beneficial impact of traditional post-test counseling on seronegatives remains to be demonstrated. A disadvantage of home testing is the inability to follow-up with individuals who are positive in order to get them appropriate care as well as high-risk individuals who are negative, to support them in remaining negative.

Several limitations in this analysis need to be addressed. The first, is the validity of self-reported data. Respondents are asked to answer questions with a touch-tone phone. If they do not understand the question, select the wrong answer, or deliberately answer the question incorrectly, inaccurate hypotheses about the data may be made. Secondly, those who use the home test kit who are Black may be underreported. Users are asked to select African American as a race option and those that identify as African and not American may chose the 'other' race category. Finally, the generalizability of the results is limited due to non-representation by Washington State residents who did not provide a zip code and the anonymous nature of the test. Information is not available about non-respondents or all Washington residents using the home testing kits; consequently it is unknown how representative the data may be.

Despite these limitations, the findings of this analysis are that home collection is an alternative method of HIV testing for Washington State residents. Home testing affords complete anonymity to those who test and is accessible for those who may not be able to get to a clinic if they are can read and follow the instructions, are willing to collect their own blood, and can afford it. The greatest public health benefit of home testing may be that its use by the "worried well" may free up resources at public sites in order to target services to those at highest risk. Furthermore, it provides insight into the types of populations that are using alternative testing. Additional studies need to be done to identify why people would choose home testing over anonymous HIV testing at a clinic and if prevention messages are being successfully delivered through this method.

❑ *Contributed by Kristen Janusz MPH*

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HIV Prevalence, Incidence, and Risk Behaviors among Drug Users Entering Treatment in King County, 1988-1999

The HIV/AIDS Epidemiology Program of Public Health - Seattle & King County (PHSKC) conducted unlinked HIV prevalence surveys of drug users entering drug treatment between 1988 and 1999. These surveys were part of a national HIV serosurveillance system sponsored by the Centers for Disease Control and Prevention (CDC) to monitor HIV prevalence among sentinel populations at higher risk for HIV.[1,2] Unlinked surveys were only conducted in facilities which offered routine HIV counseling and testing to their clients. Earlier results from this study have been reported in this publication, most recently in the Third Quarter 1998 issue.

In 1997 (the most recent year for which national results are available) CDC-sponsored unlinked drug treatment center surveys were conducted in 12 metropolitan areas in the US. HIV prevalence among injection drug users varied widely in different regions of the country with the highest median HIV prevalence rates in the East and South including 38% in Newark, 29% in New York City, 21% in Baltimore, and 20% in San Juan. In the Great Lakes area, Chicago was 17% and Detroit 6%. Lower prevalence was seen in the West with 0% in Denver, 9% in San Francisco, 1% in Los Angeles and 2% in Seattle.[3]

Methods

Six different drug treatment centers have participated in the PHSKC survey at different times between 1988 and 1999 with three facilities participating since 1995. Only data from these three facilities are presented in this report to minimize any bias caused by differences between different clinic populations. Clients entering drug treatment who had used injection or non-injection drugs in the past year were eligible for inclusion in the survey. Leftover blood specimens collected for other clinical purposes were tested for antibodies to HIV after removal of all personal identifiers. Results were linked via an anonymous code to demographic and drug-related data abstracted from treatment center records. The unlinked nature of this survey minimizes participation bias and helps assure a more representative sample of the survey population while maintaining patient anonymity. Data on individual clients were only included once in each survey year, but data on the same client may be included in different survey years. Results from these surveys are representative of drug users entering drug treatment at the participating facilities and cannot be generalized to all drug users in King County.

Results

The table presents HIV prevalence trends over time for the three drug treatment centers which participated through the 1999 survey period. Data from a total of 7,372 DTC clients were collected at the three participating sites between 1988 and 1999. A little over half of the clients were males and among the males 5.4% reported sex with another man. Almost three-quarters were White, one-fifth were Black, 3.2% were Hispanic, 1.5% were Asian or Pacific Islander, and 2.4% were American Indian or Alaska Native. The median age was between 35 and 39. Ninety percent had used injection drugs in the past year and 40% had shared needles in the past year.

HIV prevalence varied between a low of 0.8% in the1988-90 survey period and a high of 2.1% in the 1991-1993 survey period. HIV prevalence did not change significantly over the survey periods. However, HIV prevalence was statistically significantly higher among African American clients compared to White clients and Hispanic, and American Indian/Alaska Native clients also had higher HIV prevalence compared to Whites in 1997-99 (none of the 1999 Hispanic or American Indian/Alaska native clients were HIV positive). HIV prevalence was also significantly higher in men who have sex with men compared to men who had sex with women only and females throughout the survey periods. HIV prevalence tended to be higher among those who had shared needles although the difference did not

reach statistical significance in the individual time periods.

Comments

Compared to areas in the East and South which participated in the CDC unlinked surveys, HIV prevalence has remained low among injection drug users entering treatment in the Seattle-King County area and other western parts of the country. Another PHSKC study found a slightly higher HIV prevalence of 2.9% among injection drug users who were not in treatment.

CDC recently presented a comparison of HIV incidence estimates for injection drug users included in this survey in three US cities between 1994 and 1996 using the serologic testing algorithm for recent HIV seroconversion (STARHS).[4] The annualized HIV incidence was 0.3% in Seattle, 2.5% in New York City and 2.9% in Newark.[5]

The low HIV prevalence and incidence among injectors entering drug treatment in the Seattle-King County area is reassuring. However, high incidence and prevalence of hepatitis B and C and continued high prevalence of risky sharing practices observed in other studies of local injection drug users as well as continuing HIV outbreaks among Canadian IDUs in nearby British Columbia[6] (most recently in Victoria) underscore the importance of effective prevention programs for local drug injectors and continued close monitoring of bloodborne infections and risky behaviors in this population.

❑ *Contributed by Hanne Thiede DVM, MPH and the DTC HIV Seroprevalence Survey Team (Stanley Brown, Jan Fields, Heather Haynes, Ben Masaoka, Nadine Snyder, and Theresa Oakland).*

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We appreciate the cooperation of the participating drug treatment centers which makes this survey possible.

Table 1. HIV prevalence trends among clients entering drug treatment at selected facilities in King County, 1988-1999

Characteristics and behaviors	Total	1988-1990	1991-1993	1994-1996	1997-1999
	N (%)	N (%HIV+)	N (%HIV+)	N (%HIV+)	N (%HIV+)
Total[1]	7,372	737 (0.8)	1,987 (2.1)	2,664 (1.2)	1,984 (1.5)
Sex					
Male	4,111 (55.8)	430 (1.2)	1,073 (2.3)	1,490 (1.2)	1,118 (1.3)
Female	3255 (44.2)	303 (0.3))	913 (1.8)	1,174 (1.2)	865 (1.5)
Male sexual behavior					
Sex with women only	3,680 (51.5)	336 (0.9)	956 (2.0)	1.354 (0.9)	1,034 (1.0)
Sex with men	209 (2.9)	--	39 (10.3)	75 (6.7)	84 (6.0)
Race/ethnicity					
White non-Hispanic	5,252 (71.4)	519 (1.0)	1,374 (1.7)	1,921 (0.8)	1,438 (1.0)
Black non-Hispanic	1,460 (19.9)	182 (0.5)	435 (3.0)	533 (2.3)	310 (3.2)
Hispanic	236 (3.2)	20 (0)	78 (2.6)	75 (0)	63 (3.2)
Asian/Pacific Islander	113 (1.5)	--	36 (0)	22 (0)	48 (0)
AM Indian/AK Native	178 (2.4)	--	55 (0)	69 (5.8)	48 (6.2)
Other	117 (1.6)	--	--	43 (0)	65 (0)
Age					
<25	482 (6.6)	37 (0)	142 (2.8)	176 (0.6)	127 (1.6)
25-29	869 (11.8)	106 (0)	251 (1.2)	277 (1.4)	235 (0.9)
30-34	1,280 (17.4)	176 (1.1)	381 (2.9)	433 (0.7)	290 (0.7)
35-39	1,727 (23.5)	214 (1.9)	574 (1.6)	586 (1.4)	353 (2.3)
≥40	2,987 (40.7)	194 (0)	633 (2.1)	1,187 (1.3)	973 (1.5)
Transient living status					
No	6,486 (93.0)	386 (1.0)	1,804 (2.0)	2,485 (1.2)	1,811 (1.4)
Yes	490 (7.0)	--	164 (3.0)	156 (0.6)	159 (2.5)
Drug use					
Injection drug use past year	6,586 (89.5)	699 (0.9)	1,750 (2.0)	2,395 (1.2)	1,742 (1.7)
IDU since 1978, not past yr.	199 (2.7)	--	57 (7.0)	61 (3.3)	66 (0)
Non-injection drug use only	577 (7.8)	21 (0)	176 (1.1)	204 (0.5)	176 (0)
Needle sharing ever[2]					
No	2,051 (30.0)	88 (1.1)	589 (1.5)	764 (0.7)	610 (1.0)
Yes	4,786 (70.0)	292 (1.0)	1,293 (2.2)	1,868 (1.4)	1.333 (1.7)
Needle sharing past year[2]					
No	4,106 (60.3)	193 (1.0)	1,182 (1.9)	1,490 (1.4)	1,241 (1.6)
Yes	2,708 (39.7)	183 (1.1)	710 (2.1)	1,144 (1.0)	671 (1.0)

[1]All categories may not add up to total because of missing values for individual variables
[2]Data collected between 1/1/89 and 12/31/99
-- Not shown because of small denominator (<20)

HIV Prevalence, Incidence and Risk Behaviors among Seattle-King County STD Clinic Patients, 1988-1999

The Centers for Disease Control and Prevention (CDC) has sponsored unlinked anonymous HIV seroprevalence surveys in different sentinel populations in selected metropolitan areas since 1988.[1,2,a] 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 1999 at the Public Health - Seattle & King County (PHSKC) Sexually Transmitted Diseases (STD) Clinic. Leftover blood specimens collected for clinical purposes were tested for HIV antibodies and linked via an anonymous code to data collected from patient records. The PHSKC Laboratory used Abbott's less sensitive (LS) 3A11 HIV-1 EIA (Serological Testing Algorithm for Recent HIV Seroconversion, STARHS) methodology described by Janssen et al. to estimate HIV incidence.[3] The unlinked nature of these surveys avoids participation bias and helps assure a representative sample of the survey population while preserving the anonymity of STD Clinic clients. Data from only one visit during each annual survey period were included.

Our findings among eligible surveyed STD patients are summarized below. Results are combined for women and men who have sex with women only (MSW) because of the similar HIV seroprevalence and are 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 analysis, according to the gender of their sex partners. Tables 1 and 2 present cumulative HIV prevalence for the 12 survey years and trends grouped into two-year periods. Table 3 includes data on recent sexual behaviors which have been collected since 1997, and Table 4 presents HIV incidence estimates for MSM in two-year intervals from 1990-99.

Between 1988 and 1999, data from a total of 19,177 patient visits including 17,243 women and MSW, and 1,934 MSM were collected (Table 1). Of these, 350 (1.8%) were HIV positive. Cumulative HIV prevalence was 0.5% among women and MSW and 14.0% among MSM.

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

There were 10,627 (61.6%) MSW and 6,616 (38.4%) women (Table 1). Over half (56.9%) were White, 27.2% African American, 5.2% Hispanic, 4.0% Asian/Pacific Islander, 2.0% American Indian/Alaska Native, and 4.7% of another race or ethnicity. Almost half were between 20 and 29 years old. The gender distribution remained stable over the years of the survey, while the proportion of African American clients dropped from 31.9% in 1988-89 to 22.2% in 1998-99. Seven percent had injected drugs at some time in their life and 4.0% had injected in the 12 months prior to their visit.

Fifty-four (0.5%) of the men and 21 (0.3%) of the women tested positive for HIV. HIV prevalence declined significantly from 0.9% in 1988-89 to 0.3% in 1998-99; this trend was attributable to a significant decline among men, who had higher HIV prevalence in earlier years of the survey, compared to women surveyed. HIV prevalence declined among both White and Black STD clients although the decline was only statistically significant among Whites. The HIV prevalence among Hispanic clients fluctuated between 1.6% in 1994-95 and 0.6% in 1996-97. No Asian/Pacific Islander or American Indian/Alaska Native clients tested positive after 1989 and 1991, respectively. African American and Hispanic clients had higher HIV prevalence than White clients during all the survey years.

There were no HIV infections detected among the 2,049 clients younger than 20. HIV prevalence declined significantly over the survey period among 20-39 year olds but remained unchanged among clients 40 and older. Although HIV prevalence was higher among clients who reported having ever injected drugs in the earlier years of the survey, no clients with a history of illicit drug injection were HIV positive after 1995. Also, since injection drug use in the year prior to the STD Clinic visit was recorded starting in 1993, none of the STD clients who reported injection in the past year

[a]CDC funding through 1997; local funding 1998-99

have been HIV positive. Although the proportion of patients who were diagnosed with gonorrhea declined from 8.6% in 1989 to 1.3% in 1998-99, patients with gonorrhea consistently had higher HIV prevalence.

Men who have sex with men - HIV prevalence and trends

A total of 1,934 male STD patients reported sex with other men (Table 2). They comprised 15.4% of the male STD Clinic clients, increasing from 9.1% in 1988-89 to 24.2% in 1998-99. The demographic and exposure characteristics of MSM were very different from those of the female and MSW STD Clinic population. Almost 80% were White while 7.8% were African American, 6.2% Hispanic, 2.5% Asian/Pacific Islander, 2.0% American Indian/Alaska Native, and 4.0% of another race/ethnicity. The MSM clients were older than the female and MSW clients with 2.4% under the age of 20, 42.1% between the ages of 20 and 29 years, and 35.8% between the ages of 30 and 39 years. A history of drug injection was reported by 9.0%, and 4.5% had injected in the year prior to their visit.

A total of 271 (14.0%) MSM were HIV positive including 17.1% of the men who reported sex with men only and 6.1% of the men who reported sex both with men and women (data not shown). During the 12 annual survey periods, only 1 of the 46 MSM younger than 20 tested HIV positive.

HIV prevalence declined significantly from 35.6% in 1988-89 to 5.2% in 1996-97 reaching a low of 3.6% in 1997 when the trend reversed and increased to 6.0% in 1998 and 10.7% in 1999 (totaling 42 cases in 1998-99). In spite of the recent increases, the overall reduction in prevalence from 1988-89 to 1998-99 was statistically significant in the total group and in several subcategories. HIV prevalence doubled in White MSM and quadrupled in Black MSM between 1996-97 and 1998-99. The increase was confined to MSM 30 and older.

Those who were seropositive in 1998-99 were more likely to have a diagnosis of gonorrhea compared to those who were seronegative (18.4% vs. 7.8%; $p<0.05$), whereas none of the HIV-seropositive MSM had a diagnosis of syphilis. None of the seropositive MSM reported injection drug use in the past year. Seventy percent of the HIV-seropositive MSM reported 2 or more partners in the past year, 46% reported 2 or more partners in the past 2 months, and 56% reported a new partner in the past 2 months (data not shown).

Recent sexual behaviors

In 1997, information on recent sexual risk behaviors was added to the survey (Table 3). Slightly less than one-quarter of females and MSW reported four or more sexual partners in the past year compared to well over half of MSM. Eleven percent of female/MSW clients reported two or more new sex partners in the past 2 months compared to 40.7% of MSM. Condom use at last sex increased with increasing number of partners, although almost 60% of both females/MSW and MSM with four or more partners in the past year reported no condom use at last sex.

Thirty-seven percent of women/MSW and 30% of MSM who reported sex with an IDU in the past year had also injected drugs in the past year. None of the females/MSW who reported sex with an HIV-positive person were themselves HIV-positive whereas 10% of the MSM who reported this behavior were positive. Three percent of women reported sex with a bisexual man and 16.5% of MSM reported sex with a woman in the past year—4.4% of these men were HIV-seropositive.

HIV testing

Information on HIV testing was also added to the survey in 1997. Among the STD clients surveyed in 1997-99, 94.3% of women/MSW and 81.1% of MSM had HIV testing and counseling as part of their current STD Clinic visit and 73.3% of women/MSW and 88.4% of MSM had a history of a prior HIV test (not necessarily at the STD Clinic).

Of the 10 female/MSW patients who tested seropositive in 1997-99, six were tested at this visit, two reported a prior positive test, and two reported a prior negative test which indicates that they likely were unaware of their HIV-positive status. Among the 49 MSM who tested HIV-seropositive between 1997 and 1999, 18 received HIV counseling and testing

at the current visit, one had no information on prior testing, 16 had previously tested seropositive, and 14 had previously tested seronegative. Thus, 14 of the 49 (29%) were apparently unaware of their HIV-seropositive status. Twelve of these 14 men were seen in 1999 and therefore the percent of HIV-positive MSM clients in 1999 who might not have been aware of their positive status was 41%.

HIV incidence

To measure the HIV incidence, the LS-EIA was performed on 249 stored HIV-positive specimens from 1990-99 including samples from 51 females/MSW and 198 MSM. Only 5 specimens were not available for LS-EIA testing. Six of the 51 retested specimens from females/MSW were non-reactive by LS-EIA indicating that the patient had likely been infected within 4-6 months prior to the blood draw. All of the LS-EIA non-reactive specimens were from 1990-96 indicating that none of the HIV-positive female/MSW clients surveyed between 1997 and 1999 had recent HIV infections. There were too few recent seroconverters among the female/MSW population to allow for a valid calculation of HIV seroincidence.

Fifteen (7.6%) of the 198 retested specimens for MSM were non-reactive by LS-EIA resulting in an estimated seroincidence of 2.4% per year, (95% CI 0.9%-5.0%) (Table 4). Seroincidence is estimated to have been 4.9% per year during 1990-1991, with a decline to 1.0% per year during 1994-1995, and an increase to 3.2% per year during 1998-1999. These differences were not statistically significant. HIV-positive specimens from persons on antiretroviral combination therapy or with very compromised immune systems may test non-reactive on LS-EIA because of low levels of circulating HIV antibody and may artificially inflate the incidence estimates. Two persons with non-reactive LS-EIA but a history of a prior positive test were excluded from the seroincidence calculation.

Throughout the survey years MSM who presented at the STD Clinic with gonorrhea were more likely to be HIV-positive than men who did not have gonorrhea (Table 2). The estimated annual HIV seroincidence was also greater among MSM with a gonorrhea diagnosis (10.2%) than among MSM without a gonorrhea diagnosis (2.0)%, though this difference was not statistically significant, probably due to low numbers of recent seroconverters overall.

Comments

HIV prevalence has remained low among female and MSW STD Clinic clients in King County and the overall HIV prevalence has even decreased as a result of a decrease among MSW over the twelve survey years. Furthermore, none of the surveyed female/MSW STD Clinic clients under 20 tested HIV positive and no clients with a recent drug injection history tested positive after 1992. Using the LS-EIA methodology there was no indication of any new HIV infections among females/MSW after 1996. HIV prevalence among MSM STD clients declined sharply between 1988-89 and 1996-97, and increased in 1998 and again in 1999 when prevalence reached 1994 levels. Estimated HIV incidence among MSM also increased in recent years. Discrepancies in prevalence between different patient groups persisted with MSM having a 29-fold higher HIV prevalence in 1998-99 than females/MSW and African American and Hispanic females/MSW continuing to have higher HIV prevalence than White females/MSW. Information on HIV testing showed high rates of testing at the PHSKC STD Clinic. However, a high proportion of the MSM who tested seropositive in the 1999 survey appeared not to know their HIV-positive status or were unwilling to disclose it to the STD clinic staff.

Compared to the 14 other areas of the country where this survey was conducted in 1997 (the most recent year for which national results are available), the PHSKC STD Clinic ranked lowest in HIV prevalence among MSM (3.6%) following Washington, D.C. (8.2%).[4] The highest HIV prevalence among MSM was in Atlanta (35.6%) and New York City (24.0%). On the West Coast, HIV prevalence among MSM STD Clinic clients was 20.2% in Phoenix, 17.9% in Los Angeles, and 13.9% in Denver. HIV prevalence among non-IDU female STD clients ranged from 0.2% in Seattle and Phoenix to 6.4% in Miami and prevalence among non-IDU MSW clients from 0.1% in Seattle to 5.9% in Washington, D.C. A study of HIV incidence in STD clinics in Baltimore, Houston, Denver, Miami, and New Orleans using the LS-EIA technology found an HIV incidence of 7.4% per year among MSM between 1993 and 1997.[5]

HIV prevalence and incidence trends may be difficult to interpret based on serial cross-sectional STD Clinic surveys because of potential differences in STD Clinic clients in

different survey years. The declining trends in HIV prevalence and incidence among MSM STD Clinic patients through 1997 and 1995, respectively, are consistent with declining trends in AIDS case incidence among MSM observed since 1993[6] and may reflect declining HIV incidence among MSM in general. Other sources of local HIV epidemiology trends such as HIV/AIDS reporting data and results from HIV testing at publicly funded sites have not registered any increases at this point. The rise in gonorrhea, chlamydia and syphilis infection rates among King County MSM in recent years,[7,8] however, have caused great concern that a resurgence of HIV could occur and it is possible that the findings from this survey may be the first indicator of such a change.

Changes in testing patterns for syphilis and other infections may influence the results of this survey if persons with HIV infection are differentially excluded from serology testing for other infections. In 1997, 1998, and 1999 data from 74%, 62%, and 59% of new client visits, respectively, were included in the survey. The remaining clients did not have blood drawn at their first visit in the survey period. Among those without blood draws in 1998 and 1999, about 80% had notations about HIV status in their chart. HIV prevalence among MSM was higher among those without blood draws, indicating that the "true" seroprevalence among STD Clinic MSM clients was closer to 10% in 1998 (compared to 6.0% in the survey) and 12% in 1999 (compared to 10.7% in the survey). HIV prevalence noted in the madical chart among females and MSW clients without blood draws was similar to those with blood draws. It is possible that survey results from some of the previous years similarly underestimated MSM HIV prevalence, but the relative difference in HIV prevalence over the survey years is not likely to be due to differences in testing practices alone. Results from STD Clinic HIV counseling and testing visits show a parallel declining HIV prevalence trend through 1997 for MSM with slightly lower prevalence in individual time periods as expected because most HIV-seropositive patients do not repeat HIV testing (Wil Whittington, personal communication). HIV prevalence rose in 1998 and dropped again in 1999.

Finally the accuracy of the information in this survey depends on the accuracy of the STD Clinic patient records. The records, however, are structured in a way that allows for easy recording of patient information and very rarely was information missing that we needed for our survey.

Because STD clinics serve large numbers of persons at increased risk for HIV due to unprotected sex and multiple sexual partners, these clinics continue to be important sites for monitoring emerging patterns and trends in local HIV epidemiology. Clearly, the recent increases in HIV prevalence and incidence among MSM STD Clinic clients are of great concern and warrant close monitoring of HIV and other STDs and associated risk behaviors among local King County MSM as well as a heightened emphasis on prevention.

For additional information on the King County HIV seroprevalence surveys, please contact Dr. Hanne Thiede at (206) 296-8663 or e-mail at hanne.thiede@metrokc.gov.

❑ *Contributed by Hanne Thiede DVM, MPH, Ted White MPH, and the STD Clinic Serosurvey Team (Nadine Snyder, Jan Fields, Stanley Brown, Chung Rikard, Eileen Hough and Diem Tran).*

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We appreciate the cooperation of the PHSKC STD Clinic which makes this survey possible.

Table 1. HIV prevalence and trends among female and MSW STD Clinic patients, King County, 1988-1999

Characteristics	Women & men who have sex with women only						
	Total	1988-89	1990-91	1992-93	1994-95	1996-97	1998-99
	N (%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)
Total	17,243 (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)*
Sex							
Male	10,627 (61.6)	1,943 (1.1)	1,832 (0.6)	1,986 (0.5)	1,596 (0.4)	1,739 (0.1)	1,531 (0.3)*
Female	6,616 (38.4)	1,094 (0.5)	1,188 (0.3)	1,147 (0.3)	1,000 (0.3)	1,186 (0.3)	1,001 (0.4)
Race/ethnicity[1]							
White	9,778 (56.9)	1,678 (0.5)	1,606 (0.2)	1,784 (0.4)	1,500 (0.2)	1,706 (0.1)	1,504 (0.2)*
Black	4,665 (27.2)	969 (1.4)	956 (0.5)	873 (0.7)	663 (0.8)	642 (0.3)	562 (0.7)
Hispanic	895 (5.2)	123 (0.8)	172 (1.2)	171 (0.6)	128 (1.6)	155 (0.6)	146 (0.7)
Asian/PI	682 (4.0)	95 (1.1)	92 (0)	110 (0)	104 (0)	139 (0)	142 (0)
AI/AK Native	341 (2.0)	59 (1.7)	65 (6.2)	58 (0)	49 (0)	64 (0)	46 (0)*
Other	810 (4.7)	87 (1.1)	119 (0)	131 (0)	141 (0)	209 (0)	123 (0)
Age (years)							
<20	2,049 (12.0)	446 (0)	441 (0)	378 (0)	301 (0)	277 (0)	206 (0)
20-29	8,134 (47.4)	1,461 (0.8)	1,521 (0.7)	1,504 (0.3)	1,208 (0.2)	1,351 (0)	1,089 (0.1)*
30-39	4.467 (26.1)	790 (1.8)	738 (0.4)	802 (1.0)	674 (0.7)	747 (0.3)	716 (0.4)*
40+	2,495 (14.6)	330 (0.3)	313 (0.6)	413 (0.2)	391 (0.5)	534 (0.6)	514 (0.8)
IDU ever							
No	16,052 (93.1)	2,839 (0.7)	2,809 (0.2)	2,911 (0.3)	2,411 (0.4)	2,720 (0.2)	2,362 (0.3)*
Yes	1,191 (6.9)	198 (3.0)	211 (3.8)	222 (2.3)	185 (0.5)	205 (0)	170 (0.6)*
IDU past year[1]							
No	9,297 (96.0)	NA	NA	1,565 (0.4)	2,499 (0.4)	2,793 (0.2)	2,440 (0.3)
Yes	388 (4.0)	NA	NA	67 (0)	97 (0)	132 (0)	92 (0)
Sex w/IDU ever							
No	15,794 (91.6)	2,924 (0.9)	2,746 (0.3)	2,822 (0.4)	2,375 (0.4)	2,627 (0.2)	2,300 (0.3)*
Yes	1,449 (8.4)	113 (0.9)	274 (2.2)	311 (1.0)	221 (0)	298 (0.3)	232 (0.9)
Gonorrhea[2]							
No	15,070 (95.6)	1,387 (0.5)	2,756 (0.5)	3,018 (0.4)	2,527 (0.4)	2,883 (0.2)	2,499 (0.3)
Yes	653 (4.2)	130 (0.8)	264 (0.8)	115 (1.7)	69 (1.4)	42 (0)	33 (3.0)

*Indicates statistically significant trend over time at p<0.05
[1]IDU last year collected 1993-1999
[2]Gonorrhea at this visit collected 1989-1999
Individual categories may not add up to total because of missing data.

Table 2. HIV prevalence and trends among MSM STD Clinic patients, King County, 1988-1999

Characteristics	Men who have sex with men						
	Total	1988-89	1990-91	1992-93	1994-95	1996-97	1998-99
	N (%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)
Total	1,934 (100.0)	194 (35.6)	240 (26.7)	342 (14.0)	305 (9.5)	365 (5.2)	488 (8.6)*
Race/ethnicity							
White	1,490 (77.4)	157 (37.6)	201 (25.4)	276 (15.2)	226 (9.3)	265 (3.8)	365 (7.4)*
Black	150 (7.8)	--	--	29 (13.8)	--	33 (6.1)	36 (25.0)
Hispanic	120 (6.2)	--	--	23 (0)	21 (4.8)	24 (12.5)	33 (9.1)
Asian/PI	49 (2.5)	--	--	--	--	--	--
AI/AK Native	39 (2.0)	--	--	--	--	--	--
Other	77 (4.0)	--	--	--	--	25 (8.0)	--
Age (years)							
<20	46 (2.4)	--	--	--	--	--	--
20-29	806 (42.1)	82 (28.0)	107 (22.4)	150 (12.7)	124 (10.5)	163 (4.9)	180 (3.3)*
30-39	686 (35.8)	84 (40.5)	87 (27.6)	113 (14.2)	97 (9.3)	126 (7.1)	179 (12.3)*
40+	377 (19.7)	20 (45.0)	43 (37.2)	61 (19.7)	71 (8.5)	65 (1.5)	117 (12.0)*
IDU ever							
No	1,759 (91.0)	180 (35.0)	217 (25.3)	297 (13.8)	273 (9.2)	331 (4.8)	461 (8.9)*
Yes	175 (9.0)	--	23 (39.1)	45 (15.6)	32 (12.5)	34 (8.8)	27 (3.7)*
IDU past year[1]							
No	1,265 (95.5)	NA	NA	158 (14.6)	289 (9.3)	342 (5.3)	476 (8.8)
Yes	60 (4.5)	NA	NA	--	--	23 (4.3)	--
Sex w/IDU ever							
No	1,741 (90.0)	178 (35.6)	216 (25.9)	297 (13.8)	272 (9.6)	327 (4.9)	451 (8.4)*
Yes	193 (10.0)	--	24 (33.3)	45 (15.6)	33 (9.1)	38 (7.9)	37 (10.8)*
Gonorrhea[2]							
No	1,717 (92.0)	102 (27.5)	204 (24.5)	320 (10.9)	291 (8.6)	350 (4.9)	450 (7.8)*
Yes	139 (8.0)	--	36 (38.9)	22 (59.1)	--	--	38 (18.4)*

*Indicates statistically significant trend over time at p<0.05
[1]IDU last year collected 1993-1999
[2]Gonorrhea at this visit collected 1989-1999
--Data not shown because of small denominator (N< 20) which makes percentages less reliable
Individual categories may not add up to total because of missing data.

Table 3. Recent sexual behaviors among STD Clinic patients, King County, 1997-99

Sexual behaviors	Women and men who have sex with women only N=3,976	Men who have sex with men N=683
	Percent	Percent
Numbers of partners in past yr.		
0 partners	3.3	2.0
1 partner	29.3	12.9
2 partners	29.8	15.2
3 partners	15.4	12.5
4 or more partners	22.1	57.4
Number of partners in past 2 mo.		
0 partners	16.4	8.9
1 partner	57.3	34.8
2 or more partners	26.3	56.3
Number of new partners in past 2 mo.		
0 new partners	56.8	31.7
1 new partner	31.9	27.6
2 or more new partners	11.3	40.7
Condom used at last sex by no. of partners		
1 partner past year	30.7 (N=1,008)	34.3 (N=67)
2 partners past year	35.1 (N=1,073)	36.5 (N=85)
3 partners past year	38.1 (N=556)	42.4 (N=66)
4 or more partners past year	41.8 (N=797)	42.7 (N=330)
Sex with IDU in past yr.		
Yes	4.3	4.4
Sex with HIV+ in past yr.		
Yes	0.6	13.8
Exchanged $/drugs for sex in past yr.		
Yes	5.2	3.4
Sex with a bisexual man (women) in past yr.		
Yes	3.3	NA
Sex with a woman (MSM) in past yr.		
Yes	NA	16.5

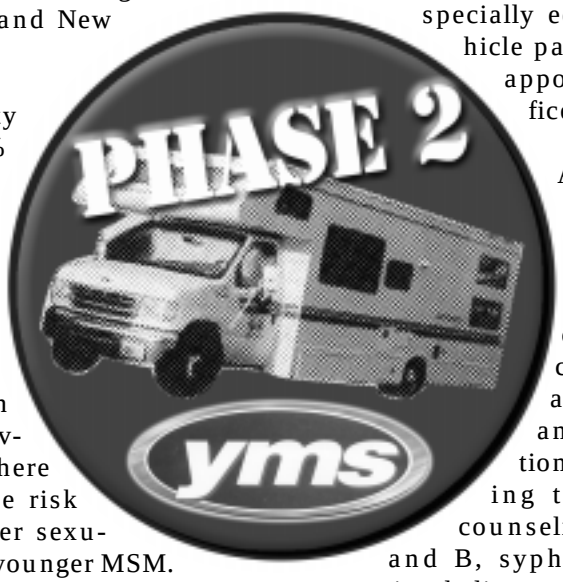
Table 4. HIV prevalence and estimated annual incidence among MSM STD Clinic patients, King County, 1990-1999

Year of survey	Men who have sex with men	
	Prevalence % HIV+ (95% CI*)	Estimated Incidence % new HIV+ (95% CI*)
Total	11.6 (10.2-13.2)	2.4 (0.9-5.0)
1990-91	26.7 (21.4-32.5)	4.9 (0.6-12.5)
1992-93	14.0 (10.7-18.0)	2.0 (0.2-8.9)
1994-95	9.5 (6.6-13.2)	1.0 (0.1-4.4)
1996-97	5.2 (3.3-7.9))	1.7 (0.1-7.6)
1998-99	8.6 (6.4-11.3)	3.2 (0.8-9.3)

* 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 the 95% CIs overlap then the difference in prevalence or incidence in different time periods is not statistical significant

The Seattle Area Young Men's Survey: Phase 2 results

Public Health - Seattle & King County recently completed Phase 2 of the Young Men's Survey (YMS 2). The purpose of this study was to gain a better understanding of the prevalence of HIV and hepatitis A and B, and sexual and drug-use risk behaviors among young men who have sex with men (MSM). YMS Phase 1 (15-22 year old MSM) was conducted between October 1997 and October 1998. Data collection for Phase 2 (22-29 year old MSM) occurred between December 1998 and February 2000. YMS was part of a multi-site Centers for Disease Control and Prevention study that was also conducted in the San Francisco Bay area, Los Angeles, Baltimore, Dallas, Miami, and New York City.



In the Seattle-King County area MSM account for 82% of persons living with AIDS and 75% of persons living with non-AIDS HIV infection. In recent years rates of infection with syphilis, gonorrhea, and chlamydia have increased among King County MSM indicating high levels of risky sexual behaviors among some MSM and there is great concern about the risk and spread of HIV and other sexually transmitted diseases in younger MSM. Most other surveys of young MSM have used convenience samples and their results cannot be generalized to broader populations of young MSM. Prior to YMS there was little local information available to guide prevention planning and evaluation efforts for young MSM. This report presents an overview of results from the Seattle Area Phase 2 YMS. Results from YMS Phase 1 were reported in earlier issues of this publication (4th Quarter 1998 and 2nd quarter 1999).

Methods

The Young Men's Survey was an anonymous cross-sectional probability sampling survey that used multi-stage sampling methods to recruit young men at venues that were frequented by young MSM.[1] Sampling venues were identified through a community assessment process and included street locations, bars, dance clubs, parks, beaches, and other locations or events that are popular with younger MSM. Venues that yielded 7 or more eligible persons in a 4-hour period were included in a sampling frame from which 12-14 venues were randomly chosen every month to construct a sampling calendar. During sampling events YMS interviewers approached potential participants and asked them about their age and county of residence to determine eligibility. Those between 23 and 29 years old who resided in King County were invited to participate. Participants could either complete the study at the time of recruitment (inside a specially equipped recreational vehicle parked nearby) or make an appointment at the YMS office on Capitol Hill.

After obtaining informed consent, study interviewers administered a standardized questionnaire that included questions on sociodemographic characteristics, sexual and drug use behaviors, and health care and prevention services history. Following the interview, pre-test counseling for HIV, hepatitis A and B, syphilis and other sexually transmitted diseases (STDs) was conducted and a blood sample was drawn. All participants received a monetary incentive and were offered free condoms and risk-reduction information. A results and post-test counseling appointment was also scheduled. Referrals for hepatitis A and B vaccinations and other health and social services were provided as needed. Stored sera were tested for antibodies to hepatitis C after all data collection was completed.

Results

Between December 1998 and February 2000 the YMS team conducted 197 sampling events at 27 different community venues and intercepted 2,843 men of whom 934 (36%) were eligible for the study. A total of 506 (54%) agreed to participate, 92% (468) of whom were

MSM. After exclusion of data from 5 duplicate participants and one participant whose responses were judged to be unreliable, the final sample available for this analysis was 462 MSM.

Sociodemographic characteristics (Table 1): The vast majority (85%) of the participants identified as gay. The median age of the respondents was between 25 and 26. Over three-quarters were White, 9% were Asian or Pacific Islander, 5% were Hispanic, 4% Black, and 1% American Indian or Alaska Native. The majority was employed full-time. Well over half had a college degree and another quarter had some college experience; 13% were currently in school. The median income was between $20,000 and $29,000. Most lived with friends or roommates (43%) or alone in a house or apartment (28%); 20% lived with a sex partner.

Sexual behavior (Tables 2, 3 and 4): Ninety-two percent reported ever having had anal sex with another man and 78% (361) reported anal sex with another man in the past 6 months (Table 2). While over half of the participants reported ever having had sex with a female, only 8% reported sex with a female in the past 6 months. The median number of lifetime male sex partners was 20 and the median for the past 6 months was 2. In the past 6 months, 28% reported one male partner, 36% 2-4 male partners, and 29% 5 or more male partners. When asked about type of male sex partner in the past 6 months, 71% reported at least one new male sex partner, 75% reported at least one steady male sex partner (regular boyfriends or lovers with whom the participant had sex 3 or more times), 59% reported at least one non-steady male sex partner (pick-ups, one-night stands, or casual partners with whom the participant had sex less than 3 times), and 3% reported at least one exchange partner (partners with whom the participant had sex in exchange for things like money, food, or drugs).

The questionnaire asked about condom use during anal sex with other men in the past 6 months and about number and type of sex (anal or oral) partners in the past 6 months, but it did not ask about condom use with individual partners or with specific type of partners. Overall, 49% (224) of all participants

Table 1. Sociodemographic characteristics of Seattle-King Co. YMS 2 participants

Sociodemographic characteristics	Total N=462	Sociodemographic characteristics	Total N=462
Sexual identity		**Education**	
Gay	85.2	High School/GED or less	11.5
Bisexual	8.3	Technical/vocational	5.6
Heterosexual	2.8	Some college	27.1
Don't know	3.7	College degree	55.8
Age		**Currently in school**	
23-26 years	58.4	Yes	13.0
27-29 years	41.6	**Income**	
Race/ethnicity		<$15,000	15.8
White	76.8	$15,000-29,999	41.8
Black	3.7	$30,000-39,999	23.2
Hispanic/Latino	5.4	≥$40,000	19.3
American Indian/Alaska Native	0.9	**Living status**	
Asian/Pacific Islander	9.3	Alone in house/apartment	28.4
Other	3.9	With parents/guardians/ relatives	7.6
Working status		With friends/roommates	42.9
Full-time	81.8	With sex partner	20.1
Part-time/Occasionally	9.7	Other	1.1
Unemployed	8.4		

reported not always using a condom during anal sex with men in the past 6 months (Table 2). Among the 361 respondents who reported anal sex with a man in the past 6 months, 20% never used a condom, 42% used a condom sometimes and 38% always used a condom (Table 3). Young men with two or more partners were more likely to have used a condom either sometimes (50%) or always (39%) compared to those with only one partner (20% and 34%, respectively). Participants who reported new partners or non-steady partners were also more likely to report condom use than those who did not report these types of partners.

Table 4 shows the different reasons for not always using a condom among those with only one partner in the past 6 months and those with two or more partners in the past 6 months. Ninety-two percent of those with one sex partner said that "being in a mutually-faithful relationship" was the reason they didn't use a condom. Among those with 2 or more male sex partners in the past 6 months, 47% (77) also said the reason was that they were in a mutually-faithful relationship. When further questioned whether their unprotected sex was only with partners with whom they had a mutually-faithful relationship, 58 of 77 (75%) responded yes. Fifty-one of these 77 men reported 2-4 partners and 26 reported 5 or more partners in the past 6 months. Other common reasons for not always using condoms among those with multiple partners included knowing that they were HIV-negative (56%), knowing that their partners were HIV-negative (47%), knowing that they both had the same HIV status (51%), or believing that their partners were at low risk (52%). Forty-seven percent said that they did not use a condom because "they were in the heat of the moment" and 27% said it was because they were high on drugs or alcohol. About one-third said that either they or their partners did not like using condoms.

Drug and alcohol use (Table 5): Virtually all respondents had used alcohol and 82% had used some form of drugs in their lifetime; 63% had used drugs in the past 6 months. Overall, 71% had been high or buzzed on alcohol (63%) or drugs (39%) during sex in the past 6 months. The most commonly used drug was marijuana (78%) followed by LSD or other hallucinogens (45%), ecstasy (41%), poppers (40%), cocaine or crack (36%), and crystal (32%). In the 6 months prior to the interview 52% had used marijuana, 24% ecstasy, 22% poppers, and 18% crystal. Five percent reported ever having injected drugs and 1% had injected in the past 6 months.

Health history (Table 6): Over two-thirds reported a regular source of health care, with health care maintenance organizations being

Table 2. Sexual behaviors among Seattle-King Co. YMS 2 participants

Sexual behaviors	Total N=462	Sexual behaviors	Total N=462
Anal sex with men		**Male sex partners last 6 mos.***	
Ever	92.4	0	7.8
Past 6 months	78.1	1	27.5
Sex with female		2-4	36.1
Ever	57.8	≥5	28.6
Last 6 months	8.0	**Type of male sex partner last 6 mos.***	
Male sex partners ever*		New	70.8
1-4	11.9	Steady	74.7
5-9	15.2	Non-steady	59.3
10-19	21.6	Exchange	2.6
≥20	51.3	**Condom use last 6 mos.****	
		Not always	48.5

* Includes partners with whom participant had anal or oral sex
** Denominator includes all YMS MSM participants; only 78% reported anal sex with another man in the past 6 months

Table 3. Condom use during anal sex in the past 6 months among Seattle-King Co. YMS participants

Sexual behaviors and partner characteristics	Any condom use in the past 6 months* N=361			
	Total N (col %)	Never N (row %)	Sometimes N (row %)	Always N (row %)
Type of anal sex				
Any anal sex	361 (78.1)	72 (19.9)	152 (42.1)	137 (38.0)
Insertive anal sex	320 (69.3)	63 (19.7)	145 (45.3)	112 (35.0)
Receptive anal sex	296 (64.1)	56 (19.0)	129 (43.9)	110 (37.2)
Number of partners				
1	93 (25.8)	42 (45.2)	19 (20.4)	32 (34.4)
≥2	268 (74.2)	30 (11.2)	133 (49.6)	105 (39.2)
New partner				
0	81 (22.4)	39 (48.2)	18 (22.2)	24 (29.6)
1	61 (16.9)	16 (26.3)	22 (36.1)	23 (37.7)
≥2	219 (60.7)	17 (7.8)	112 (51.1)	90 (41.1)
Non-steady partner				
0	127 (35.2)	46 (36.2)	35 (27.6)	46 (36.2)
≥1	234 (64.8)	26 (11.1)	117 (50.0)	91 (38.9)
Steady partner				
0 - 1	240 (66.5)	64 (26.7)	88 (36.7)	88 (36.7)
≥2	121 (33.5)	8 (6.6)	64 (52.9)	49 (40.5)

* The questionnaire asked about number and type of sex partners and about condom use in the past 6 months, but it did not did ask about condom use with specific or individual male partners. Thus condom use refers to any condom use in the 6 months prior to the interview.

Table 4. Reasons why condoms were not always used during anal sex in the past 6 months among Seattle-King Co. YMS participants

Any reasons why condoms were not used during anal sex with male partners in the past 6 months	Didn't always use condoms during anal sex in the past 6 months N=224		
	Total N=224 %	1 partner* N=61 %	≥2 sex partners* N=163 %
Didn't like using condoms	35.7	37.7	35.0
Partner didn't like using condoms	33.5	34.4	33.1
No condom was available**	16.1	6.6	19.6
Didn't worry about using condoms**	46.9	60.7	41.7
Didn't think he could get/transmit HIV	16.5	23.0	14.1
Were in the heat of the moment**	38.4	16.4	46.6
High or buzzed on drugs or alcohol**	21.0	4.9	27.0
Knew he was HIV-negative**	62.1	78.7	55.8
Knew partner was HIV-negative**	53.6	72.1	46.6
Knew he and partner had same HIV status**	58.9	80.3	50.9
Thought partner was at low risk for HIV	52.2	52.5	52.2
Was in mutually faithful relationship**	59.4	91.8	47.2

* The YMS participants included in this table had all had unprotected anal sex with another man in the past 6 months. However, questions regarding number of sex partners do not distinguish between oral and anal sex partners and it is possible that some of the sex partners were oral sex partners only.

**Indicates a statistically significant difference at $p<0.05$ in reason for not using a condom between those with 1 partner versus those with 2+ partners

the most common source (29%) followed by a physician or group practice (non-HMO) (23%). One-quarter reported having been diagnosed with a sexually transmitted disease at least once in their life. One-third had completed the 3-shot hepatitis B (HBV) vaccination series and 21% had completed hepatitis A (HAV) vaccinations. Among those who had not been vaccinated the most common reasons was not having been informed about the vaccine by their health care provider (45% for HAV and 42% for HBV vaccinations), and lacking knowledge about the vaccine (22% for HAV and 37% for HBV vaccination). Seventeen percent said they were not vaccinated because they were at low risk for HAV and 18% said they were at low risk for HBV. Lack of time was cited as a reason by 10% of those without HAV vaccination and 8% of those without HBV vaccination. Eight percent said that they had already had HAV or HBV infection. Only about 5% said that cost was an issue. More than 90% had previously been tested for HIV—17% within 3 months, 33% within 6 months, and 58% within a year.

Prevalence of infections (Table 7): A total of 22 (5%) participants were seropositive for HIV and 13 (59%) knew of their positive HIV status. Nineteen percent showed serological markers for prior infection with hepatitis B; less than 2% had chronic hepatitis B infection and 40% were seropositive for surface antibodies indicating immunity as a result of

Table 5. Drug and alcohol use behaviors among Seattle-King Co. YMS 2 participants

Drug and alcohol use behaviors	Total N=462 %	Drug and alcohol use behaviors	Total N=462 %
Alcohol use		**Poppers or nitrites**	
Ever	98.5	Ever	39.8
Last 6 months	94.8	Last 6 months	22.1
High during sex last 6 months	62.9	High during sex last 6 months	18.6
Any drug use		**Crystal**	
Ever	82.3	Ever	32.3
Past 6 months	63.4	Last 6 months	18.2
High during sex last 6 months	39.0	High during sex last 6 months	10.6
Marijuana/Hash		**Uppers/Speed***	
Ever	77.5	Ever	14.5
Last 6 months	51.9	Last 6 months	2.6
High during sex last 6 months	22.3	High during sex last 6 months	0.6
Ecstasy/XTC		**Cocaine or crack**	
Ever	40.7	Ever	36.1
Last 6 months	23.8	Last 6 months	16.4
High during sex last 6 months	11.9	High during sex last 6 months	5.4
LSD/Hallucinogens		**Downers/Barbiturates**	
Ever	45.2	Ever	14.9
Last 6 months	13.2	Last 6 months	7.8
High during sex last 6 months	4.1	High during sex last 6 months	2.0
Special K		**Heroin**	
Ever	15.6	Ever	4.8
Last 6 months	6.5	Last 6 months	0.9
High during sex last 6 months	2.4	High during sex last 6 months	0.6
GHB		**Injected drugs**	
Ever	10.6	Ever	5.2
Last 6 months	4.6	Last 6 months	1.3
High during sex last 6 months	1.3		

*Not including crystal or cocaine

Table 6. Health history among Seattle-King Co. YMS 2 participants

Heath history	Total N=462 %	Heath history	Total N=462 %
Source of regular health care (any)		**Hepatitis B vaccination**	
Health Maintenance Organization (HMO)	28.6	Yes - completed series	32.5
Physician's office/non-HMO group practice	22.5	Yes - did not complete series	6.9
Community health clinic	5.8	**Hepatitis A vaccination**	
Hospital	4.3	Yes - completed series	21.0
Other	6.9	Yes - did not complete series	6.9
No regular source of health care	31.8	**Received HIV testing**	
Ever had a sexually transmitted disease		Ever	91.1
Yes	25.8	In the last 6 months	33.2

Table 7. Prevalence of sexually and parenterally transmitted infections among Seattle-King Co. YMS 2 participants

Serologies	Total N=462 % reactive
HIV (anti-HIV+)	4.8
Syphilis	0.4
History of hepatitis B infection (anti-HBc+)	18.5
Chronic hepatitis B infection (HBsAg+)	1.5
Hepatitis B immunity (anti-HBs+)*	40.0
Hepatitis A immunity (IgG+)*	28.1
Hepatitis C (anti-HCV+)	0.9

*Either as a result of natural infection or vaccination

past infection or vaccination. Twenty-eight percent were positive for hepatitis A antibodies due to prior infection or vaccination; 50% of these young men reported either a complete or a partial HAV vaccination series. Four (less than 1%) were seropositive for hepatitis C, 2 of whom reported a history of injection drug use. Only 2 participants tested positive for syphilis. Seventy percent of all participants returned for their test results.

Comments

Results from this survey show that the majority of participants had multiple recent sex partners, many of whom were new sex partners. Because this survey did not ask about condom use with specific partners, we do not know whether participants with multiple recent partners, who reported not always using condoms, reserved their condom use for sex with casual partners. It was encouraging to find that a higher proportion of men with multiple sex partners reported using condoms during anal sex "sometimes" or "always" than those with fewer partners. Interestingly, one of the more common reasons for not always using a condom among participants with 2 or more recent partners was "being in a mutually-faithful relationship." This response along with the high proportion of participants who reported several recent steady and non-steady partners suggest short-term, serially monogamous relationships were common. Because these relationships were generally short-lived, HIV status may not have been determined or even discussed, and these young men may be at higher risk for HIV and other STDs than they perceive.

The prevalence of alcohol and drug use was high. In comparison, the 1998 National Household Survey on Drug Abuse (NHSDA) conducted by the Substance Abuse and Mental Health Services Administration found that 50% of

young adults 21-29 years of age reported having used drugs at least once in their life and that 11% were current users (used in the last month). Almost three-quarters reported being high or buzzed on alcohol or drugs during sex in the past 6 months and this was also cited as a reason for unprotected sex among over a quarter of the participants with recent multiple partners.

The prevalence of HIV among these 23-29 year old men (5%) was over twice the prevalence found among the 15-22 year old men surveyed in Phase 1 (2%) indicating that HIV transmission continues to occur among MSM in their twenties. The difference in HBV (anti-HBc) prevalence was even more striking. Only 5% of Phase 1 participants had markers of prior HBV infection compared to 19% of Phase 2 participants. A minority of participants reported HAV and HBV vaccination indicating the ongoing need to promote vaccination by educating both young gay men as well as their health care providers.

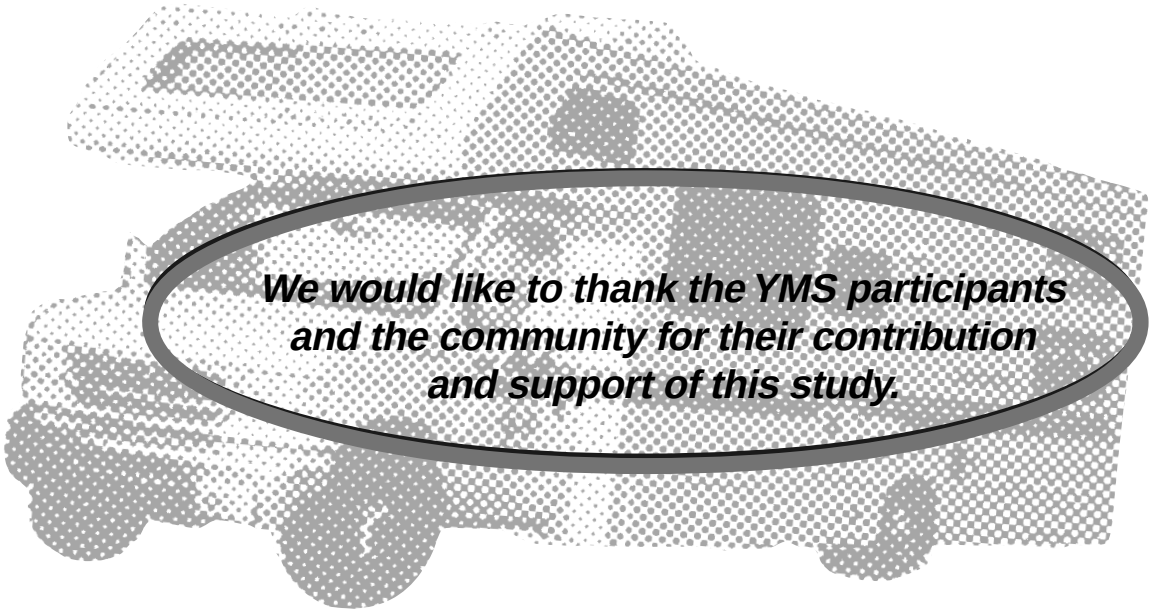
As of this writing, data collection was still underway at the other YMS sites and results for comparisons were therefore not available.

In summary, our results demonstrate the continued need for effective education and prevention efforts among younger MSM in the Seattle-King County area focusing on 1) safer sex practices including perceived safety of brief serial monogamous relationships, 2) the risk contributed by drug and alcohol use, and 3) increasing HAV and HBV vaccination rates.

Please contact Hanne Thiede (hanne.thiede@metrokc.gov) at (206)296-8663, or Tom Perdue (tom.perdue@metrokc.gov) at (206)205-7357 if you have questions about the Young Men's Survey.

❑ *Contributed by Contributed by Hanne Thiede DVM, MPH, Tom Perdue MPH and the YMS Phase 2 Team (Stanley Brown, Russell Campbell, Jennifer Davis, Jan Fields, Justin Haines, Damon Jameson, Barry Kosloff, David Miller, Jason Naki, Richard Newman, Dana White, Misha Williams, and Robert Yoon).*

[1]MacKellar D, Valleroy, Karon J, Lemp G, Janssen R. The Young Men's Survey: Methods for estimating HIV seroprevalence and risk factors among young men who have sex with men. **Public Health Rep** 1996;111:138-144.



New Questionnaire for the SHAS Interview Project

The Supplement to HIV/AIDS Surveillance (SHAS) Interview Project is a multicenter study sponsored by the Centers for Disease Control and Prevention (CDC) that has been conducted in Washington State since 1991. Since that time, the study has expanded from limited counties in the Puget Sound area to the entire state, and eligible participants now include not only those with AIDS but also asymptomatic HIV infection. To date, 1,500 interviews have been completed with Washington State residents with HIV/AIDS, and SHAS staff continue to work with health care providers and case managers to recruit people eligible for interview.

Although recruitment for the study has expanded over time, the interview instrument itself has remained essentially unchanged. Washington State has added some local questions to the national questionnaire in order to gather information on relevant issues such as use of needle exchange. Additionally, a module was added to the national instrument in early 1997 to collect information on new antiretroviral therapies and the accompanying adherence issues. But it was not until May 2000 that a fully revised national instrument became available, and this instrument is now being used by SHAS interviewers. This article provides information about the additions and improvements that have been made to the SHAS questionnaire.

Demographic/Socioeconomic Module: This module of the interview contains questions about marital status, race/ethnicity, education, employment, source of income, and living situation. Questions about ethnicity and race were revised to conform to the new census standards for the year 2000; consequently, respondents are allowed to choose multiple race categories. A question was added to ascertain whether the respondent is the sole provider for any children under 18 years of age living in the household, a question particularly relevant for women with HIV. A series of questions was added to ascertain how and why people migrate geographically after they get diagnosed with HIV. Questions were also added to collect information about history of incarceration.

Drug Use Module: This module of the interview contains questions about non-injection drug use (including alcohol) and injection drug use. Questions were revised after discussions with the CDC Substance Use Working Group and were written to be more consistent with Risk Behavior Assessment questions used by the National Institute for Drug Abuse (NIDA). While the questions about drug use are similar to questions on the previous SHAS questionnaire, the time frames for use have been changed from "ever used," "used in past five years," and "used in past year" to "ever used," "used in past 12 months," and "last time used." Questions have been added about sharing cookers, cottons, and rinse water, and a series of questions has been added addressing needle exchange.

Sexual Behavior and STD History Module: This module had the most questions added as a result of revision. Questions were developed in consultation with the CDC Behavioral Surveillance Workgroup. As with the Drug Use Module, time frames were changed to capture behaviors "ever", "past 12 months", and "last time." Questions are asked about anal, vaginal, and oral sex, and about these behaviors with steady partners versus other partners. Questions were added about drug and alcohol use with sex, and sex in high risk places (bathhouses, rest stops, etc.).

Reproductive History Module: While both the old and new SHAS questionnaires include questions about pregnancy outcomes, the new questionnaire also has a question about pregnancy intention.

HIV Testing and Medical Therapy Module: This module contains questions on HIV testing, diagnostic tests related to HIV, drug regimens, and adherence issues. Questions were revised after consultation with Adult Spectrum of HIV-related Disease (ASD) project scientists at CDC; additionally, some questions were modified and added to be consistent with questions on the HIV Testing Survey (HITS). Ques-

tions were added regarding motivation to obtain HIV testing, anonymous versus confidential testing, and partner notification. First and most recent CD4 and viral load results are collected on the new instrument. Questions were added about whether respondents had ever been told they had hepatitis (A,B,C) and whether they had received hepatitis B vaccinations.

Since questions about medication regimens and adherence were first added to the national questionnaire in early 1997, much has been learned about these issues. In order to get better information about medication regimens and adherence, questions were revised to specify the numbers of spoonfuls of medicine or pills that are taken on a daily basis, and then respondents are asked about missing doses in the prior 48 hours. This specificity allows for a more quantitative definition of adherence. Additionally, respondents are asked to give a less precise response about how well they had been able to take their medications in the prior 30 days (never/rarely, sometimes, usually, always). Questions were also added to get information about what types of activities aid respondents in taking their medications as prescribed.

Lastly, a question was added to capture information about alternative therapies that the respondents took/participated in during the prior 12 months.

Health and Social Services Module: This module contains questions about health care provision, emergency room visits and hospital admissions, insurance, and access to other health and social services. Questions were added to gather information about the respondents' perception of their physical and mental health in the prior 30 days and limitations to daily activities due to impairments or health problems.

The new SHAS questionnaire may be useful to: (1) people who need to know what data are being collected through the Interview Project so they may make requests for analyses that support HIV prevention and care planning, and (2) people who are writing similar types of questionnaires, since much effort was put into revising this questionnaire to be consistent with other national data collection instruments.

To get a copy of the new questionnaire, please contact Maria Courogen at (360) 236-3458. If you are eligible to participate in the project or have clients who are eligible, please contact project interviewers Emma Moreno at (206) 464-6108 or Tiffany Buckner at (206) 464-6615.

❑ *Contributed by Maria Courogen MPH*

HIV/AIDS Program Report: the 2000 HIV/AIDS Care and Prevention Collaboration Project

Seattle-King County has a national reputation for its successful HIV/AIDS care and prevention system. As the demographics of the HIV epidemic continue to change and local data show increasing STD and HIV co-infection rates among men who have sex with men (MSM), local providers and planners sensed a need to increase collaboration between HIV/AIDS prevention and care systems. Thus, the Ryan White Title I HIV/AIDS Planning Council ("the Council") in Seattle undertook a care and prevention collaboration needs assessment in the first quarter of 2000. The assessment, called the "Collaboration Project," was jointly conducted by the Council and Public Health – Seattle & King County (PHSKC), the Ryan White Title I grantee.

The project aimed to see if care service providers discuss sex and drug use risk reduction with their HIV+ clients, and if they make appropriate referrals for clients whom they determine have ongoing risk reduction needs. The project also examined whether prevention workers who encounter HIV+ individuals in their work appropriately refer these clients into the care service delivery system. The project explored whether referrals were happening across systems, whether those referrals were effective, and what barriers stood in the way of effective referrals. Once barriers to cross-system referrals were identified, the final project goal was to determine what changes can be made to improve the resource linkage and referral capacity for each of these HIV/AIDS systems.

Methods

The Council convened a Collaboration Work Group including members of both the care and prevention sides of the Council, including persons living with HIV/AIDS, to develop and oversee the project. The assessment consisted of a series of one-on-one phone or in-person interviews with providers from the prevention and care systems, and follow-up focus groups with care and prevention interview subjects and HIV+ consumers to construct solutions to barriers and problems identified in the interview process.

Two staff members of the PHSKC HIV/AIDS Program conducted the interviews, along with two contract interviewers, one familiar with HIV care programs, and one familiar with the prevention field. The Council sought to interview 102 providers from the spectrum of care services; 74 interviews were actually conducted (72.5% of target). Also sought were interviews with 46 prevention providers and 31 of these were completed (67.3% of target). Interviews were conducted during January and February of 2000 and took about 20-25 minutes each.

Results of Provider Interviews

Demographic characteristics: The survey revealed notable differences in the populations of care and prevention providers and the ways in which services are delivered: Care service providers were twice as likely to be female than prevention providers (53% versus 26%). Prevention providers were much more racially diverse than those in the care system. Over half of the prevention providers interviewed identified as non-white (26% Latino/a, 13% American Indian or Alaska Native, 10% Asian/Pacific Islander and 10% African American; the remaining 48% were Caucasian). In contrast, 82% percent of the care providers interviewed were Caucasian, with far smaller numbers of persons of color (4% Asian/Pacific Islander, 3% Latino/a, 1% African-American and 1% American Indian/Alaska Native).

Thus, the care provider population was fairly similar to the demographics of King County as a whole, while the demographics of the prevention system were more representative of

the epidemic trends in populations at risk for HIV. This suggests that clients being referred into the care system by prevention workers are less likely to encounter providers from their ethnic and cultural backgrounds.

Populations served: Unlike care service providers, all prevention providers focused activities on specific target populations. The most frequently targeted populations were MSM (61%), communities of color (35%), and injection drug users (IDU, 19%), with smaller numbers or providers targeting women, youth and adolescents, and HIV+ individuals. In contrast, 68% of care providers stated that they do not work with a specific target population, instead offering services to all eligible clients.

Job focus: Prevention providers were much more likely than care service providers to engage in more than one form of service provision. Nearly half (48%) of the prevention providers interviewed engaged in multiple activities (e.g., doing outreach and giving presentations or performing both individual and group level counseling). Only 8% of care service providers reported performing multiple activities, instead they focused on specific job functions (e.g., case management, primary medical care, mental health therapy, peer counseling, substance use treatment and counseling).

Previous history of service delivery: Forty-two percent of prevention providers interviewed had previously worked in the care service arena, while only 11% of care providers had previously performed prevention activities. This suggests that prevention workers may be more likely to know about care services (e.g., types of programs, methods, expected outcomes) than care workers are to know about prevention services.

Referral capacity between systems: Prevention providers were asked if they had offered any referrals to medical care or other services in the past year. "Referral" was defined as giving a client the name and/or phone number of a specific provider or provider agency, rather than just suggesting that the individual needed care. Ninety percent of the prevention providers interviewed said that they had made a care referral in the past year. The 10% who had not made referrals were providers who stated that none of their clients revealed their HIV status.

The most common referral was for medical care; about 70% of providers made specific medical care referrals. Sixty-one percent of respondents made case management referrals, 50% made referrals for housing assistance, 46% referred clients for mental health therapy, and 46% made referrals for substance use treatment. Smaller numbers made referrals to emotional support programs (21%), insurance programs (21%), complementary therapies (14%), food and meal programs (11%), and various other services. Eleven other services were mentioned once or twice.

To find out if prevention providers who make referrals are referring their clients to the appropriate programs, the interview asked "Where would you refer clients for each of the following services?" Providers were instructed to name as many service providers within each category as they knew. In general, referral sources were most appropriate in the areas of HIV counseling and testing, medical care, and case management. Prevention workers were less likely to identify available mental health and substance use resources. Of particular concern was the limited awareness prevention workers had about referrals to medical insurance programs (such as the Early Intervention Insurance Program and the Evergreen Insurance Program) and Washington State's AIDS Prescription Drug Program.

Care providers were less likely to have made referrals for clients into prevention/risk reduction programs than prevention providers were to have made referrals into care. While 90% of prevention providers had made referrals into the care system, only 43% of care providers referred clients into sexual risk reduction services. Many fewer volunteers (7%) than paid staff (51%) made risk reduction referrals.

Most of the sexual risk reduction referrals made by care providers seemed to be appropriate. The majority were to programs targeting gay/lesbian/bisexual/ transgender (GLBT) individuals. Providers who were asked follow-up questions about the specific programs or methods offered by these agencies were relatively unaware of the specific nature of the programs to which they were referring. Care providers seemed to need as much information about prevention programs as prevention providers needed about care service referrals.

Two-thirds (66%) of care providers referred a client during the past year to a program that addressed drug use risk reduction. Seventy-eight percent of paid staff had made such a referral versus 14% of the volunteers. Similar to referrals for sexual risk reduction, the largest number of referrals for substance use treatment and counseling were made to agencies targeting the GLBT population.

Barriers to inter-system collaboration: Prevention workers were asked about the barriers they encountered in making referrals to care services. Cultural and language barriers were a main concern, particularly for providers targeting clients of color (23%). When prevention workers referred clients into the care system, these clients may encounter providers who neither speak their language nor understand their cultural backgrounds. Nineteen percent of the interview subjects said that needed services were not available. This may represent a lack of information, since the King County care continuum is fairly comprehensive and prevention providers might be unaware that services are actually available. Nineteen percent stated that they did not know where to make appropriate referrals and 16% expressed concerns about client confidentiality.

Focus group participants offered several suggestions about improving the relationship between prevention and care providers. They urged care and prevention providers to conduct presentations at each other's agencies to establish resource linkages. Prevention providers also wanted to see care service agencies make a commitment to changing their staffing patterns to increase diversity, which means paying increased attention to recruitment, hiring and training.

Some prevention providers were very concerned about "handing off" clients to the care service continuum. Despite lengthy up-front work to actually get a client into the care system, once that client enters that system the prevention worker may no longer be seen as a valuable resource. When the prevention provider has established a relationship with the client, these prevention providers suggested that the care provider (including the client's case manager) consider the prevention provider as part of the client's immediate support system and involve the prevention provider in client consultations.

When care service providers were asked about barriers they faced in making referrals to HIV risk reduction programs, over a third (38%) lacked information about available programs. They lacked knowledge about specific agencies to which referrals could be made, as well as lack of familiarity with the kinds of programs offered by these agencies. Nineteen percent of care providers said their clients were resistant to or not interested in risk reduction programs. Care providers interviewed and focus groups expressed a desire for in-service training offered by prevention agencies, particularly inter-agency presentations between care and prevention providers. This kind of approach would allow them to become familiar with other agencies' staffs, identify key resource persons to whom they could make referrals, and learn about the range of prevention programs.

Care providers' discussion of sexual and drug use issues with clients: Asked about discussing sexual risk reduction, a quarter (26%) said they discuss sexual risk reduction with all their clients. Eight percent said they never discuss risk reduction with any clients, while 23% said they discuss it with less than one-quarter of their clients. An important distinction was that 66% of paid staff discussed sexual risk reduction with at least half of their clients versus only 36% of volunteers.

Smaller numbers of care providers reported inquiring about STD risks from their clients. Only 18% asked all clients about risk behaviors related to STD transmission, and 11% discussed STD risk reduction with clients. Some providers stated that since they already have this information in the client's chart, they did not re-initiate a discussion. However, it is unclear if these providers continued to discuss ongoing risk potential with their clients. Again, most (59%) paid staff discussed STD risk reduction with clients, versus only 14% of volunteers.

Barriers to offering clients sexual risk reduction messages that providers mentioned most were client- rather than provider-related. The largest barrier identified was perceived client

discomfort in talking about sex, mentioned by 35% of providers. Sixteen percent mentioned that clients' might perceive personal guilt or shame discussing sexual behaviors. Fifteen percent believed that male clients might feel uncomfortable talking to female providers about sexual issues. An additional 15% of providers, mostly volunteers, said that discussing sexual behaviors and risk reduction with clients was not part of their job.

A much higher percentage of care providers discussed drug-using behaviors and risk reduction with their clients. Nearly half (47%) initiated discussion about drug-related behaviors with all clients. Only 15% never initiated discussion about drug use behaviors. Again, 56% of paid staff inquired about drug use from all of their clients versus only 7% of volunteers.

To questions about barriers to discussing drug use related risks and what might help overcome these barriers, most of the barriers mentioned were client-related, including clients' denial of drug use (identified by 23% of providers); clients' fear of being judged or of reprisals being levied against them (23%); general resistance to talking about this topic (22%); and shame about using drugs (19%). Only 8% of providers identified personal barriers, in this case their own negative attitudes towards drug use and IDU.

Two follow-up focus groups interviewed 23 care providers, including 13 females and 10 males, all of whom were White. Participants wanted sexual and drug use behavior and risk reduction discussions formalized into their jobs, with questions on these topics included in all initial client assessments and periodic re-assessments. They also wanted to see provider trainings around various sexual counseling issues. Care providers also wanted more training on substance use issues and increased linkages between the HIV and substance use systems.

Consumer focus groups: Project staff followed up the prevention and care provider focus groups with two focus groups of HIV+ consumers to expand on issues brought up by providers, and to see if consumers could offer additional solutions to the problems identified in provider interviews. A total of 22 consumers attended the groups, including 17 males and 5 females. At least 10 of the participants were persons of color.

To feel comfortable discussing sexual risk behaviors, focus group participants reiterated the need for trust to be developed between providers and clients. There was unanimous agreement among focus group participants that it was always appropriate for medical care providers to bring up these issues, since they felt that confidentiality was guaranteed in the medical setting. If consumers understood that medical providers routinely inquired about these issues with patients, no one would feel singled out.

Consumers felt it was only acceptable for case managers to discuss sexual and drug use risk reduction issues with clients if trust had been established. They felt it was very important for case managers to explain how and where this information would be used. Some clients expressed concerns that revealing unsafe sexual behaviors to non-medical providers, such as case managers and mental health therapists, would lead to providers "policing" their clients. This discussion evoked confidentiality and privacy concerns brought up in Washington State around the recent implementation of named reporting of HIV positive persons.

Consumers expressed mixed sentiments regarding the appropriateness of discussing sexual and drug use risk reduction with other types of providers. Most felt it was suitable for mental health providers to discuss sexual and drug use issues if the client brings it up, but were concerned that mental health professionals might be judgmental about client behaviors.

Clients felt it was important for substance use counselors to address all types of drug use risk reduction, but felt it was only appropriate for substance use counselors to ask about sexual risk behaviors as they related to the client's alcohol and drug use. Participants felt it was important for peer counselors to be knowledgeable about these issues, particularly when the client brings them up.

Conclusions and Recommendations

This needs assessment taught the Planning Council and PHSKC much about the current nature of the care and prevention systems, and their overlap. The study identified successes in the current inter-system resource and referral processes and highlighted collaboration and communication gaps between the two systems. The project also identified concrete suggestions about how the entire continuum of HIV prevention and care services might work collaboratively to make improvements.

Given increasing national evidence of complacency about sexual risks and local data that many MSM with STD also carry HIV, the fact that so few care providers discuss these risk issues is a great concern. With evidence on the relationship between STD prevention and HIV prevention, as well as the possibility of re-infection and illness progression, it is increasingly important for providers to discuss sexual risks with their clients in an ongoing fashion – an area to address in care provider training.

Based on the findings of the Collaboration Project, the HIV/AIDS Planning Council has implemented several changes in the King County prevention and care continuum of service delivery in the upcoming year. These include:

☑ Reserving $65,000 in Ryan White Title I funding to train care providers on how to more effectively address sexual and drug use risk reduction with clients;

☑ Attaching caveats to FY2001 funding in the Ryan White service categories of ambulatory care and substance use, to ensure that favorable consideration will be given to proposals which demonstrate strategies to train staff to assess risk reduction issues and successfully incorporate counseling and/or referral and follow-up for prevention services;

☑ Using CDC funds to develop and implement prevention case management programs at the Harborview Madison Clinic and Northwest AIDS Foundation to help HIV+ clients who need and want further risk-reduction counseling and assistance, and

☑ Assigning ongoing committee status to the Collaboration Work Group (now called the Collaboration Committee), to ensure that care/prevention collaboration and coordination issues are a continuing topic of discussion for the entire Council.

We recommend that other municipalities and care and prevention planning groups consider undertaking a similar process in their community.

For more information about the Collaboration Project, please contact Jeff Natter at (206) 205-5506.

❑ *Contributed by Jeff Natter MPH, Theresa Fiaño, Barb Gamble MPA, and Bob Wood MD*

Adult AIDS Clinical Trials Unit Report: Opportunistic infections still occur!

While the occurrence of opportunistic infections has decreased as a result of use of more potent combination antiretroviral therapy, opportunistic infections still occur. Such infections may occur because people are unaware that they have HIV infection until they present with advanced disease. Other patients develop such infections despite receiving care for HIV infection. Some persons are not able or willing to take antiretroviral therapy. Side-effects of treatment, complexity of drug regimens, other health issues, mental illness, or substance abuse can interfere with the successful use of antiretrovirals. In addition, despite good adherence to antiretroviral therapy, some patients have sub-optimal immunologic responses.

Clinically, we assess the potential for risk of opportunistic infections by the number of CD4+ cells. In patients with low CD4+ cells, prophylaxis for some opportunistic infections, like *Pneumocystis carinii* pneumonia, is strongly recommended; whereas for other infections, like cytomegalovirus (CMV) retinitis, prophylaxis is not widely used.

Cytomegalovirus Viral Load

CMV infection is common among persons with HIV and may cause severe disease in patients with advanced HIV infection. Patients with CD4+ cell counts less than 100 are at higher risk than patients with higher CD4+ counts. Detectable CMV "viral load" (CMV DNA measured by polymerase chain reaction [PCR]) has been shown to be another risk factor for the subsequent development of CMV disease. At present, CMV DNA PCR assays are experimental and are not widely available.

Valganciclovir

Therapy with oral ganciclovir is approved by the U.S. Food and Drug Administration for prevention of CMV disease, but has not been widely used because of its large pill burden and high cost. Valganciclovir is a pro-drug of ganciclovir, which increases the oral bioavailability of ganciclovir by about 10-fold. Valganciclovir achieves plasma levels similar to that achieved with IV ganciclovir. The toxicity profile of valganciclovir is similar to IV ganciclovir, and therefore may include myelosuppression, especially neutropenia.

Valganciclovir Study

Whether the benefits associated with the anti-CMV effects of valganciclovir will outweigh the risks of pre-emptive therapy with this drug in patients with detectable CMV DNA PCR is not clear; this is an important question for patients with low CD4+ cells. The AIDS Clinical Trials Group is undertaking a placebo-controlled study with valganciclovir in patients with advanced HIV, to evaluate the benefits and risks of valganciclovir, and determine if this drug will prevent the occurrence of CMV disease.

This study will enroll patients with HIV infection, CMV infection (detectable CMV antibody), CD4+ cells less than 100 cells, detectable plasma HIV RNA (over 400 copies/mL), who are either on potent antiretroviral therapy or who don't plan to take potent therapy. Enrollees will have serial tests for CMV DNA, and if they become positive, they will start valganciclovir/placebo. This study is anticipated to be open for enrollment by July 2000.

Study Participants Sought

Participants are being sought for several Adult AIDS Clinical Trials Unit studies. Screening tests, study medications, and laboratory and clinical monitoring that are performed as part of our studies are free of charge for potential participants and study enrollees. The unit does not assume the role of primary care provider for study participants, but coordinates care with each patient's primary care provider. Physicians, their staff, or potential enrollees can call Karen Novak or Steve Kotes at (206)731-3184 for additional information or appointments.

❑ *Contributed by Ann Collier MD*

UNIVERSITY OF WASHINGTON AIDS CLINICAL TRIALS UNIT

ANTIRETROVIRAL STUDIES OPEN FOR ENROLLMENT – AUTUMN 2000

TOPIC	TREATMENTS	ELIGIBILITY	LENGTH	MISCELLANEOUS	STUDY #
Safety and anti-HIV effect of a new drug, AMD-3100 (fusion inhibitor)	• AMD-3100 is given intravenously continuously for 10 days	• 18-55 years of age • Medically stable & all lab tests within normal limits. • No changes to ARV's for >4 weeks prior to entry, **OR** not on ARV's • Viral load > 5,000 • CD4 >50	15 weeks	• 12 day hospitalization, reimbursement of $100/day (maximum total $1,200, paid ***after study completion***)	066
Protease inhibitor levels in tissues.	None	• Study of persons planning to start a protease inhibitor • Any CD4 count	8 weeks	• Blood draws and genital fluid collections done at entry, week 4 and week 8. • Four spinal taps (lumbar puncture): $100 reimbursement for first two, $125 each for third and fourth (total $450)	032
Hearing Loss with AZT or ddI	None	• Starting AZT and/or ddI (with other antivirals). CD4 counts >200 cells/mm^3	32 weeks	• $20 reimbursed for each of 3 hearing tests • Blood draws & urine sample: entry & weeks 16 & 32	047
IDV/RTV combinations for persons experiencing clinical failure with an initial PI's.	• Indinavir and ritonavir in two dose combinations (given twice daily) with 2 NRTIs.	• Detectable HIV RNA (≥500 to ≤100,000 copies/mL) on a protease inhibitor (PI) regimen • No high level genotype resistance	24 weeks	• Study supplies indinavir and ritonavir; subject must supply the other 2 NRTIs • $100 reimbursement for CRC visit	5055
Treatment Intensification with abacavir (ABC)	• ABC 300 mg twice a day or placebo twice a day for 36 weeks	• On current potent antiretroviral therapy • HIV RNA >500 and ≤10,000 • Open to persons ≥ 13 years	36 weeks	• Exams, lab tests and ABC given at no cost • No previous use of ABC	5064
Effect of contraceptive medications on AZT	None	• Any CD4 or viral load • Must be on AZT, and • *Optional*: may be starting Ortho-Novum 1/35 or Depoprovera	6 weeks	• ***Women only.*** • Two or four 10-hour visits; • $75 reimbursement per visit	317

UNIVERSITY OF WASHINGTON AIDS CLINICAL TRIALS UNIT

HARBORVIEW MEDICAL CENTER, 2 WEST CLINIC, 325 9TH AVENUE, BOX 359929, SEATTLE, WA 98104 -- (206) 731-3184

IMMUNOLOGICAL STUDIES OPEN FOR ENROLLMENT – AUTUMN 2000

TOPIC	TREATMENTS	ELIGIBILITY	LENGTH	MISCELLANEOUS	STUDY #
Effect of GM-CSF	• GM-CSF or placebo for 16 wks • Open-label drug for 32 wks	• Currently taking potent antiretroviral therapy	52 weeks	• Drug given by injection under skin	5041

OPPORTUNISTIC DISEASE & OTHER CONDITION STUDIES OPEN FOR ENROLLMENT – SUMMER, 2000

CONDITION	TREATMENTS	LENGTH	DESCRIPTION	STUDY #
Peripheral neuropathy	Lamotrigine (Lamictal®) vs. placebo.	19 weeks	• Tests safety and effectiveness of lamotrigine in treating peripheral neuropathy pain. • No pain medication, / **OR** >4 weeks of pain meds. • No ddI, ddC, or d4T for 8 weeks prior to entry, or currently on for >8 weeks. • 7 study visits, $20 reimbursement per visit.	086

Key to Terms:

3TC:	**Epivir (lamivudine)**	**ddC:**	**Hivid (zalcitabine)**
ABC:	**Ziagen (abacavir)**	**HAART:**	**Highly active antiretroviral therapy**
ARV:	**Antiretroviral**	**NRTI:**	**Nucleoside reverse transcriptase inhibitor**
AZT:	**Retrovir (zidovudine)**	**NNRTI:**	**Non-nucleoside reverse transcriptase inhibitor**
ddI:	**Videx (didanosine)**	**PI:**	**Protease inhibitor**
d4T:	**Zerit (stavudine)**	**GM-CSF:**	**Granulocyte macrophage colony stimulation factor**
APV:	**Egenerase (amprenavir)**	**IDV:**	**Crixivan (indinavir)**
EFV:	**Sustiva (efavirenz)**	**NFV:**	**Viracept (nelfinavir)**
RTV:	**Norvir (ritonavir)**	**SQV:**	**Invirase (saquinavir)**

Screening tests, study medications, and laboratory and clinical monitoring that are part of our studies are free of charge.

Physicians or potential participants can call Karen or Steve at (206) 731-3184 for information or appointments.

ACTU Web Page: http://depts.washington.edu/actu/ ***ACTU Email: actu@u.washington.edu***

Pediatric AIDS Clinical Trials Unit Report: Reducing perinatal HIV transmission

Reduction of mother to child transmission of HIV-1 during pregnancy and birth continues to be a major goal of several studies being done by the Pediatric AIDS Clinical Trials Group (PACTG). HIV is passed most frequently from an HIV-infected mother to her baby at the time of birth, with a much lower number of infants being infected before birth while growing in the uterus. In this country, it is recommended that all HIV-infected women receive zidovudine during pregnancy, labor and delivery, and that their infants received zidovudine for the first 6 weeks of life. Previous studies have shown this regimen to decrease the chance of a mother passing the virus to her newborn from approximately 26% to 8%.

A more recent study done by the PACTG (called PACTG 316) was designed to evaluate if a single dose of nevirapine given to the mother during labor and to her infant within the first 48 hours of life, in addition to the standard zidovudine treatment, might further reduce the chance of mother-to-child HIV transmission during birth. Mothers and their infants were randomly assigned to receive either nevirapine or placebo (an inactive substance) during labor (mothers) and at 48 hours of life (infants).

Recently, the data collected from PACTG 316 was reviewed by a group of medical experts not participating in the study to evaluate the progress of the study. At the time the study was reviewed, a total of 1404 women had been entered into the study, 1194 had delivered, 1066 had received study drug, and the infection status was available for 869 infants. When the study was designed, the number of mother-baby pairs needed to participate in the study to answer the questions was decided based on the assumption that at least 5% of babies born to HIV-infected women receiving standard zidovudine therapy would be infected with HIV.

The 316 data review showed the rate of mother-child HIV transmission in PACTG 316 to be much less than the expected 5%. In order for this study to determine if nevirapine adds additional benefit in preventing mother to baby transmission of HIV, the number of mother-infant pairs participating in the study would need to be doubled. Based on this lower than expected transmission rate and the amount of time and resources it would take to enroll enough mother-infant pairs into this study to find out of nevirapine offered additional benefit, the decision was make to stop enrollment into this study. While the low transmission rate is a welcome finding, the cause of the decrease in the overall transmission rate is not known. In the study, nevirapine was well tolerated by both mothers and babies; there were no significant side effects in either the mothers or babies.

Several studies are ongoing in the PACTG to determine the dose and safety of combination antiretroviral therapy that includes a protease inhibitor (nelfinavir, ritonavir, saquinavir) during pregnancy. While pharmacokinetic studies are often difficult to do in pregnant women and newborns, the information learned from these studies is essential in order to offer safe and effective treatment regimens for an HIV infected woman and her unborn baby.

The Pediatric AIDS Clinical Trials Unit at Children's Hospital and Regional Medical Center and University of Washington currently has studies available for HIV-infected pregnant women and their infants, and HIV-infected children and adolescents. For more information, contact Dr. Jane Hitti or Deb Goldman, ARNP at Northwest Family Center (206) 720-4300 or Dr. Ann Melvin or Kathey Mohan, ARNP at the Pediatric AIDS Clinical Trials Unit at CHRMC (206) 528-5020.

❑ *Contributed by Kathey Mohan ARNP and Lisa Frenkel MD*

Main Requirements	Study Drug or Topic	Study Overview
Pediatric Antiretrovirals:		
≥16 weeks antiretroviral therapy, ages 4 months-17 years	**d4T/evirapine/ritonavir vs. d4T/3TC/nelfinavir (TID) vs. d4T/nevirapine/nelfinavir (TID) vs.d4T/3TC/ nevirapine/nelfinavir** (ACTG 377) (Closed to accrual)	A Phase I/II randomized, multicenter protocol comparing four antiretroviral regimens containing combinations of protease inhibitors, NRTIs and an NNRTI in mildly symptomatic HIV-1-infected children aged 4 months to 17 years of age. The purpose of this study is to evaluate the ability of these regimens to delay disease progression.
Cohort 1: ≤ 16 years of age and able to swallow pills Cohort 2: ≥ 3 month to ≤ 8 years (suspension	**DMP-266 Nelfinavir** (ACTG 382) (Cohort 1 accrued) (Cohort 2 temporarily closed to accrual)	Phase 1, open-label pharmacokinetic study of a new non-nucleoside reverse transcriptase inhibitor given once daily in combination with nelfinavir. Concomitant use of nucleoside reverse transcriptase inhibitors are required, but are not supplied through this protocol.
Children aged 3-16 years of age and able to swallow capsules. Must be naïve to at least one of the following: stavudine, zidovudine, or ddI	**Saquinavir soft-gel plus 2 NRTI's of choice Vs. Saquinavir soft-gel plus nelfinavir plus one or two NRTI's of choice** (ACTG 397) (Closed to accrual pending amendment)	This is a Phase I study to evaluate the safety and tolerance of 2 saquinavir soft-gel containing treatment arms. Children must have a viral load >10,000 at entry to be eligible. Intensive pharmacokinetics will be obtained from a subset of children randomizing to the saquinavir soft-gel plus nelfinavir arm of the study. Because saquinavir soft gel is not available as a liquid formulation, children must be able to swallow capsules.
Perinatal Treatment Studies:		
Pregnant woman unable to tolerate zidovudine or choosing not to take zidovudine	**Stavudine (d4T)** (ACTG 332)	This is a Phase 1 pharmacokinetic study of stavudine given to pregnant women during pregnancy, labor and delivery and to their newborns for 6 weeks. Newborns will either receive stavudine or zidovudine. The objective is to define the appropriate stavudine dose for the pregnant woman and obtain ascertain the safety of stavudine for both the pregnant woman and newborn.
Pregnant HIV-infected women	**Saquinavir-SGC, lamivudine, zidovudine** (ACTG 386)	This is a Phase I study of the safety and correct dose of saquinavir-SGC given in combination with zidovudine and lamivudine during pregnancy and labor and delivery. Women may begin therapy at 13 weeks gestation and continue until 6 weeks postpartum.
Newborn infants born to HIV-infected pregnant women	**Increased calorie formula** (ACTG 247)	This is a randomized, double-blind, controlled study of an increased caloric density formula and its effect on growth and nutritional status of HIV-infected children. All infants born to HIV-infected women are eligible for enrollment, however infants found to be uninfected will be discontinued from the study.
Pregnant HIV-infected women	**Nelfinavir, lamivudine, zidovudine** (ACTG 353)	This is Phase I study of the safety, tolerance and pharmacokinetics of nelfinavir given with zidovudine and lamivudine to HIV-1 infected women and their newborns. Women may have had prior nelfinavir therapy. Women are enrolled between 14-32 weeks gestation.
Newborn infants born to HIV-infected pregnant women	**GP 120 vaccine** (Study to re-open to accrual with amendment)	This Phase I study of the safety and immunogenicity of ALVA-MN120TMG vaccine given to infants born to HIV-infected women within 72 hours of birth. Infants receive additional vaccinations at 4,8, and 12 weeks of life. 18 infants receive vaccine, 6 receive placebo.

Opportunistic Infections:		
HIV infected children and adolescents ≥2 years ≤21 years with CD4 % as follows: >2 and <6 years CD4% >25% >6 and <21years CD4% >20	**No study drugs. Purpose to stop prophylaxis for PCP and MAC** (P1008)	This is a study to evaluate the safety of stopping PCP and MAC prophylaxis in children whose CD4% has increased following institution of effective antiretroviral therapy. It is an observational study of the rate of opportunistic events in children who have discontinued prophylactic medications.
Upcoming Studies:		
HIV infected children age 1 mos to 13 years Antiretroviral-naive children starting any antiretroviral therapy. Protease inhibitor (PI)-naive children beginning a PI-containing regimen. Children with prior PI therapy who are changing antiretroviral therapy due to virologic indications and that are naïve to at least two of the agents in the new therapy regimen.	**Observational study-No study treatment** (PACTG 1010)	This is a 48 week study to describe changes in measures of body composition in HIV infected children before and at 12, 24 and 48 weeks after beginning or changing antiretroviral therapy; and to describe these changes in body composition.
HIV infected children 3-12 years of age on combination antiretroviral regimen containing 2 NRTI;s alone, or in combination with a PI or NNRTI; viral load >10,000	**T-20, a Fusion inhibitor** (PACTG 1005)	This is a phase I/II study to obtain preliminary information on the safety, tolerability and pharmacokinetics of multiple doses of T-20 given as a single IV bolus, a single subcutaneous injection and as chronic twice-daily subcutaneous injections in HIV-1 infected children. The study will also provide preliminary information on the antiretroviral activity of T-20 when given to children with viral loads >10,000 who are on PI or PI-sparing antiretroviral regimen. This is a 24 weeks study.
Natural History Studies:		
HIV-infected, severely immunocompromised (CD4% < 10%) children aged 4-17 years initiating open- label HAART therapy	**Effects of HAART on immune reconstitution** (P1006)	P1006 is a study designed to measure how well the immune system recovers once aggressive antiretroviral medications are started. No antiretroviral medications will be provided as part of this study. Children will receive hepatitis A and tetanus vaccines as part of the study; response to these vaccines will be used as a measure of immune function.
HIV-negative, non-exposed, normal children aged 0-18 years	**Purpose to obtain normal ranges of lymphocyte subsets in children.** (P1009)	P 1009 is an observational, cross-sectional study to obtain the normal range of lymphocyte subsets in children. Study involves a one time blood draw from children undergoing elective surgeries or having blood taken for other non-illness associated purposes.
HIV-infected young persons, >8years up to 22 years of age, who did not acquire infection perinatally	**Effects of HAART on immune reconstitution and viral dynamics.** (ACTG 381)	This is a non-randomized, observational study to define the immune reconstitution that occurs following institution of Highly Active Antiretroviral Therapy (HAART) in the recently infected adolescent. The study objective is to determine if, controlling for viral load at baseline, there is a positive correlation between baseline immunologic status and the virologic and immunologic response to HAART at 1,2,and 3 years after initiation of HAART.
Pregnant HIV-infected women and their newborn infants	**No treatment** (ACTG 367)	This is a chart abstraction study to capture data about the clinical management of HIV infection in pregnant HIV-1 women and their infants. This information will be useful in the design of clinical trials to treat HIV-l in pregnant women and to prevent transmission of HIV-1 to infants.
Infants of women who were enrolled in treatment trials during pregnancy; infants and children enrolled in ACTG treatment or vaccine trials	**Observational study to look for long term outcomes** (ACTG 219)	Open to all infants and children currently or previously participating in HIV treatment protocols, including infants born to women who participated in a trial during pregnancy. The purpose of the study is to determine late effects of HIV therapies and HIV infection in children.

For further information contact: Lisa Frenkel MD or Kathey Mohan ARNP at voice (206)526-2116/ fax (206)527-3890

AIDS Vaccine Evaluation Unit Report: AVEU joins the HIV Vaccine Trials Network

The Seattle AIDS Vaccine Evaluation Unit has been awarded a grant to continue its work as an HIV Vaccine Trials Unit. The clinic participates in the newly-organized HIV Vaccine Trials Network (HVTN) which will lead the national vaccine effort from the Fred Hutchinson Cancer Research Center in Seattle. Larry Corey, MD is the chair of the Scientific Steering Committee of the HVTN and Julie McElrath, MD, PhD serves as chair of the Laboratory Sciences Committee, a member of Scientific Steering Committee, and head of the Mucosal Working Group as well as principal investigator at the AVEU. Connie Celum, MD, MPH serves as chair of the Primary Infection Working Group. She will also facilitate expansion to projected Phase III trials at this site, and will assist Jorge Sanchez, MD, a former Fogarty Fellow, in establishing a satellite clinic for HIV vaccine trials in Lima, Peru.

The HVTN includes six former AVEUs as well as several new clinical sites: the San Francisco Department of Public Health, Harvard, the University of Maryland, and Durban, South Africa. Other international partner sites will be in India, the People's Republic of China, Brazil, Trinidad, Botswana, Peru and Haiti. The goals of the network are to move HIV vaccine science forward, to identify new vaccine approaches, and to expand the trials into the international arena.

Just prior to its reincarnation as the HVTN, the AIDS Vaccine Evaluation Group reviewed current protocol progress at a May, 2000 meeting in Washington, DC. Recent trials have evaluated the safety and immunogenicity of experimental HIV vaccines based on recombinant canarypox, which have been the anchor of several vector-subunit, prime-boost protocols. These vaccines contain portions of *gag*, protease and *env* genes from clade B HIV strains; a new generation of these vaccines also includes portions of *nef* and *pol*. The canarypox vaccines have been very safe to date. However, in the most recent trials, immune responses have been less frequent than expected. Adjustments in dosing of the canarypox vector will be made in projected studies opening in fall and winter 2000. Fifty lower risk volunteers are projected for each site.

Clinic investigators are also involved in ancillary studies in HIV immunology which complement the vaccine trials. Two cohort studies directed by Dr. McElrath are ongoing. One study follows people who are multiply exposed to HIV through sexual contacts but who remain seronegative. Another study follows people infected with HIV who are long-term nonprogressors.

Volunteers Needed!

• We currently need healthy HIV-negative volunteers for a twelve month Phase I vaccine trial testing canarypox experimental HIV vaccines to develop optimal vaccine doses and schedules. Potential subjects should call (206)667-2376 and ask David Richart about HIV vaccine trials.

• We are also enrolling healthy, HIV-negative mutually monogamous gay men to serve as control subjects for a separate immunology study. Subjects donate blood and semen only and do not receive vaccines. This study will ideally enroll participants for five years with visits around every three months. Potential subjects should call (206)667-2398 and ask Jean Lang Lee, ARNP about serving as a control (jlang@u.washington.edu). Although we get many calls from former volunteers asking if they can participate again, we cannot re-enroll previous vaccine recipients as study subjects or controls.

• In a private collaboration with Merck and Co., Inc., clinic investigators will be working on an HIV DNA vaccine study in people with HIV. This Phase I clinical trial will enroll around 15 people on HAART with undetectable viral loads over the past two years and CD4 counts >500. CD4 counts must never have been <200.

The purpose of this therapeutic vaccine trial is to determine whether this vaccine can elicit

immune responses, particularly cytotoxic T-lymphocyte (CTL) responses, which may be helpful in viral control. Subjects are expected to continue on HAART throughout the two-year study. Potential volunteers may be referred to David Berger, RN or Marnie Elizaga, MD at (206)667-2300.

How can we reach your community?

Let us know when we can schedule an HIV vaccine trials briefing for your small group, class, or organization so we can work together to involve the community in finding an HIV vaccine for the world. Contact David Berger, RN at (206)667-2344 or dberger@u.washington.edu. Explore our new website and consider a link from yours: http://depts.washington.edu/vaccine.

❑ *Contributed by Marnie Elizaga MD*

AIDS Vaccine Evaluation Unit

http://depts.washington.edu/vaccine

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Volunteers Needed
Must be 18-60 years of age, healthy, HIV-negative, and available for 18 months to two years. Please call (206)667-2300 for more information.