hiv/ai

2nd Half '01

epidemiology report

Washington State ❍ Seattle & King County

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

Summary Tables

HIV/AIDS Epidemiology and Surveillance News

Credits

This is the fifty-ninth edition of a 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, Beth Sohlberg, Laura Arnold, Rusty Myers, and Nicole Woodruff at Public Health - Seattle & King County , and Mark Charonis, Sandy Hitchcock, Anna Meddaugh 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 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 initial diagnosis to those patients who seek HIV 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 are not 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.

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.

The HIV/AIDS Epidemiology Program's publications are also on the internet at:
www.metrokc.gov/health/apu/epi

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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 12/31/01*			
	New cases reported 2nd half 2001	137	0	137
	Cases reported year-to-date	320	0	320
	Cumulative cases	6,393	14	6,407
	Cumulative deaths	3,663	8	3,671
	Persons living[3]	2,730	6	2,736
OTHER COUNTIES	*Cases reported as of 12/31/01*			
	New cases reported 2nd half 2001	99	0	99
	Cases reported year-to-date	196	0	196
	Cumulative cases	3,500	18	3,518
	Cumulative deaths	1,843	11	1,854
	Persons living[3]	1,657	7	1,664
WA STATE	*Cases reported as of 12/31/01*			
	New cases reported 2nd half 2001	236	0	236
	Cases reported year-to-date	516	0	516
	Cumulative cases	9,893	32	9,925
	Cumulative deaths	5,506	19	5,525
	Persons living[3]	4,387	13	4,400
U.S.	*Cases reported as of 6/30/01[4]*			
	Cumulative cases	784,032	8,994	793,026
	Cumulative deaths	452,432	5,235	457,667
	Persons living[3]	331,600	3,759	335,359

[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 12/31/01 - 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)	3	(100)	0	(0)
	Ferry	6	(0.1)	6	(100)	0	(0)
	Garfield	0	(0.0)	0	(0)	0	(0)
	Lincoln	3	(0.0)	2	(67)	1	(33)
	Okanogan	19	(0.2)	7	(37)	12	(63)
	Pend Oreille	8	(0.1)	5	(63)	3	(38)
	Spokane	405	(4.1)	225	(56)	180	(44)
	Stevens	18	(0.2)	6	(33)	12	(67)
	Walla Walla	55	(0.6)	28	(51)	27	(49)
	Whitman	9	(0.1)	4	(44)	5	(56)
	SUBTOTAL	**542**	**(5.5)**	**293**	**(54)**	**249**	**(46)**
Region 2:	Benton	69	(0.7)	28	(41)	41	(59)
	Chelan	31	(0.3)	20	(65)	11	(35)
	Douglas	2	(0.0)	2	(100)	0	(0)
	Franklin	29	(0.3)	10	(34)	19	(66)
	Grant	26	(0.3)	19	(73)	7	(27)
	Kittitas	13	(0.1)	9	(69)	4	(31)
	Klickitat	10	(0.1)	8	(80)	2	(20)
	Yakima	139	(1.4)	70	(50)	69	(50)
	SUBTOTAL	**319**	**(3.2)**	**166**	**(52)**	**153**	**(48)**
Region 3:	Island	53	(0.5)	33	(62)	20	(38)
	San Juan	17	(0.2)	10	(59)	7	(41)
	Skagit	47	(0.5)	27	(57)	20	(43)
	Snohomish	511	(5.1)	275	(54)	236	(46)
	Whatcom	138	(1.4)	70	(51)	68	(49)
	SUBTOTAL	**766**	**(7.7)**	**415**	**(54)**	**351**	**(46)**
Region 4:	King	6,407	(64.6)	3,671	(57)	2,736	(43)
Region 5:	Kitsap	173	(1.7)	98	(57)	75	(43)
	Pierce	902	(9.1)	473	(52)	429	(48)
	SUBTOTAL	**1,075**	**(10.8)**	**571**	**(53)**	**504**	**(47)**
Region 6:	Clallam	45	(0.5)	22	(49)	23	(51)
	Clark	349	(3.5)	187	(54)	162	(46)
	Cowlitz	83	(0.8)	46	(55)	37	(45)
	Grays Harbor	45	(0.5)	21	(47)	24	(53)
	Jefferson	23	(0.2)	12	(52)	11	(48)
	Lewis	37	(0.4)	23	(62)	14	(38)
	Mason	65	(0.7)	16	(25)	49	(75)
	Pacific	14	(0.1)	8	(57)	6	(43)
	Skamania	7	(0.1)	5	(71)	2	(29)
	Thurston	146	(1.5)	69	(47)	77	(53)
	Wahkiakum	2	(0.0)	0	(0)	2	(100)
	SUBTOTAL	**816**	**(8.2)**	**409**	**(50)**	**407**	**(50)**
TOTAL		**9,925**	**(100.0)**	**5,525**	**(56)**	**4,400**	**(44)**

1 Percent of Wahington State cases (column %)
2 Percent of individula 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:	12/31/01		12/31/01		12/31/01		06/30/01[2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
SEX								
Male	6,073	(95)	3,080	(88)	9,153	(92)	653,808	(82)
Female	334	(5)	438	(12)	772	(8)	139,217	(18)
Unknown	0	(0)	0	(0)	0	(0)	1	(<1)
AGE GROUP (YRS)								
< 13	14	(<1)	18	(1)	32	(<1)	8,994	(1)
13-19	12	(<1)	26	(1)	38	(<1)	4,219	(1)
20-29	1,070	(17)	678	(19)	1,748	(18)	130,965	(17)
30-39	3,111	(49)	1,532	(44)	4,643	(47)	353,102	(45)
40-49	1,631	(25)	864	(25)	2,495	(25)	208,870	(26)
50-59	458	(7)	274	(8)	732	(7)	63,395	(8)
> 59	111	(2)	126	(4)	237	(2)	23,480	(3)
Unknown	0	(0)	0	(0)	0	(0)	1	(<1)
RACE/ETHNICITY								
White, not Hispanic	5,081	(79)	2,796	(79)	7,877	(79)	337,035	(42)
Black, not Hispanic	705	(11)	317	(9)	1,022	(10)	301,784	(38)
Hispanic	403	(6)	273	(8)	676	(7)	145,220	(18)
Asian/Pacific Islander	123	(2)	50	(1)	173	(2)	5,922	(1)
American Indian/AK Native	95	(1)	82	(2)	177	(2)	2,433	(<1)
Unknown	0	(0)	0	(0)	0	(0)	632	(<1)
HIV EXPOSURE CATEGORY								
Male-male sex	4,802	(75)	1,948	(55)	6,750	(68)	361,867	(46)
Injection drug use (IDU)	369	(6)	525	(15)	894	(9)	197,091	(25)
IDU & male-male sex	646	(10)	336	(10)	982	(10)	50,066	(6)
Heterosexual contact	251	(4)	315	(9)	566	(6)	85,738	(11)
Hemophilia	31	(<1)	57	(2)	88	(1)	5,471	(1)
Transfusion	53	(1)	68	(2)	121	(1)	9,276	(1)
Mother at risk/has HIV	13	(<1)	15	(<1)	28	(<1)	8,207	(1)
Undetermined/other[3]	242	(4)	254	(7)	496	(5)	75,310	(9)
TOTAL CASES	**6,407**		**3,518**		**9,925**		**793,026**	

[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 12/31/01 - 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	4,054	(83)	339	(57)	274	(72)	91	(81)	44	(57)	4,802	(79)
Injection drug use (IDU)	145	(3)	82	(14)	37	(10)	3	(3)	7	(9)	274	(5)
IDU & male-male sex	528	(11)	60	(10)	32	(8)	6	(5)	20	(26)	646	(11)
Heterosexual contact	30	(1)	44	(7)	12	(3)	1	(1)	2	(3)	89	(1)
Hemophilia	29	(1)	1	(<1)	0	(0)	1	(1)	0	(0)	31	(1)
Transfusion	27	(1)	2	(<1)	2	(1)	1	(1)	1	(1)	33	(1)
Mother at risk/has HIV	2	(<1)	3	(1)	0	(0)	0	(0)	0	(0)	5	(<1)
Undetermined/other	92	(2)	62	(10)	26	(7)	10	(9)	3	(4)	193	(3)
MALE SUBTOTAL (row %)	**4,907**	**(81)**	**593**	**(10)**	**383**	**(6)**	**113**	**(2)**	**77**	**(1)**	**6,073**	**(100)**
FEMALE												
Injection drug use (IDU)	47	(27)	35	(31)	1	(5)	0	(0)	12	(67)	95	(28)
Heterosexual contact	91	(52)	50	(45)	13	(65)	4	(40)	4	(22)	162	(49)
Hemophilia	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Transfusion	13	(7)	5	(4)	1	(5)	1	(10)	0	(0)	20	(6)
Mother at risk/has HIV	3	(2)	3	(3)	2	(10)	0	(0)	0	(0)	8	(2)
Undetermined/other	20	(11)	19	(17)	3	(15)	5	(50)	2	(11)	49	(15)
FEMALE SUBTOTAL (row %)	**174**	**(52)**	**112**	**(34)**	**20**	**(6)**	**10**	**(3)**	**18**	**(5)**	**334**	**(100)**
TOTAL	**5,081**	**(79)**	**705**	**(11)**	**403**	**(6)**	**123**	**(2)**	**95**	**(1)**	**6,407**	**(100)**

Table 4B. Cumulative AIDS[1] cases by gender, race/ethnicity, and HIV exposure category - Reported as of 12/31/01 - 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	5,728	(77)	456	(55)	379	(62)	115	(78)	72	(51)	6,750	(74)
Injection drug use (IDU)	417	(6)	137	(16)	80	(13)	5	(3)	23	(16)	662	(7)
IDU & male-male sex	809	(11)	82	(10)	52	(9)	6	(4)	33	(23)	982	(11)
Heterosexual contact	94	(1)	65	(8)	32	(5)	5	(3)	5	(4)	201	(2)
Hemophilia	82	(1)	1	(<1)	1	(<1)	1	(1)	0	(0)	85	(1)
Transfusion	62	(1)	3	(<1)	6	(1)	1	(1)	1	(1)	73	(1)
Mother at risk/has HIV	5	(<1)	5	(1)	0	(0)	0	(0)	1	(1)	11	(<1)
Undetermined/other	223	(3)	84	(10)	60	(10)	15	(10)	7	(5)	389	(4)
MALE SUBTOTAL (row %)	**7,420**	**(81)**	**833**	**(9)**	**610**	**(7)**	**148**	**(2)**	**142**	**(2)**	**9,153**	**(100)**
FEMALE												
Injection drug use (IDU)	136	(30)	64	(34)	8	(12)	2	(8)	22	(63)	232	(30)
Heterosexual contact	227	(50)	81	(43)	42	(64)	9	(36)	6	(17)	365	(47)
Hemophilia	3	(1)	0	(0)	0	(0)	0	(0)	0	(0)	3	(<1)
Transfusion	32	(7)	8	(4)	3	(5)	3	(12)	2	(6)	48	(6)
Mother at risk/has HIV	7	(2)	5	(3)	4	(6)	1	(4)	0	(0)	17	(2)
Undetermined/other	52	(11)	31	(16)	9	(14)	10	(40)	5	(14)	107	(14)
FEMALE SUBTOTAL (row %)	**457**	**(59)**	**189**	**(24)**	**66**	**(9)**	**25**	**(3)**	**35**	**(5)**	**772**	**(100)**
TOTAL	**7,877**	**(79)**	**1,022**	**(10)**	**676**	**(7)**	**173**	**(2)**	**177**	**(2)**	**9,925**	**(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 12/31/01 - King County and WA State

	KING COUNTY				WASHINGTON STATE			
	MALE		FEMALE		MALE		FEMALE	
AGE (YRS)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
< 5	4	(<1)	5	(1)	10	(<1)	13	(2)
5-12	2	(<1)	3	(1)	5	(<1)	4	(1)
13-19	8	(<1)	4	(1)	27	(<1)	11	(1)
20-29	982	(16)	88	(26)	1,562	(17)	186	(24)
30-39	2,967	(49)	144	(43)	4,328	(47)	315	(41)
40-49	1,572	(26)	59	(18)	2,337	(26)	158	(20)
50-59	438	(7)	20	(6)	676	(7)	56	(7)
> 59	100	(2)	11	(3)	208	(2)	29	(4)
TOTAL	**6,073**	**(100)**	**334**	**(100)**	**9,153**	**(100)**	**772**	**(100)**

[1] AIDS by 1993 surveillance case definition

Table 6. AIDS[1] cases, deaths, and case-fatality rates by year
Reported as of 12/31/01 - 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)	179	(96)	249	242	(97)
1987	274	(74)	262	(96)	370	353	(95)
1988	352	(71)	324	(92)	496	459	(93)
1989	460	(73)	417	(91)	628	566	(90)
1990	518	(68)	453	(87)	757	664	(88)
1991	560	(66)	466	(83)	853	712	(83)
1992	620	(67)	438	(71)	923	672	(73)
1993	645	(65)	392	(61)	996	623	(63)
1994	541	(61)	250	(46)	888	432	(49)
1995	508	(64)	139	(27)	791	236	(30)
1996	418	(59)	59	(14)	711	117	(16)
1997	296	(56)	42	(14)	529	70	(13)
1998	250	(61)	26	(10)	408	52	(13)
1999	191	(52)	17	(9)	365	44	(12)
2000[4]	261	(59)	31	(12)	442	45	(10)
2001[4]	151	(52)	7	(5)	288	14	(5)
TOTAL	**6,407**	**(65)**	**3,671**	**(57)**	**9,925**	**5,525**	**(56)**

[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 12/31/01 - King County

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	187	(63)	161	(64)	127	(66)	164	(63)	88	(58)
Injection drug use (IDU)	15	(5)	25	(10)	15	(8)	25	(10)	13	(9)
IDU & male-male sex	34	(11)	23	(9)	18	(9)	23	(9)	10	(7)
Heterosexual contact	17	(6)	11	(4)	13	(7)	31	(12)	26	(17)
Hemophilia	3	(1)	0	(0)	1	(1)	1	(<1)	0	(0)
Transfusion	3	(1)	2	(1)	1	(1)	1	(<1)	0	(0)
Mother at risk/has HIV	1	(<1)	0	(0)	0	(0)	1	(<1)	0	(0)
Undetermined/other[3]	36	(12)	28	(11)	16	(8)	15	(6)	14	(9)
TOTAL	**296**	**(100)**	**250**	**(100)**	**191**	**(100)**	**261**	**(100)**	**151**	**(100)**

Table 7B. AIDS cases by HIV exposure category and year of diagnosis
Reported as of 12/31/01 - Other Counties

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	106	(45)	72	(46)	73	(42)	87	(48)	67	(49)
Injection drug use (IDU)	42	(18)	33	(21)	33	(19)	31	(17)	21	(15)
IDU & male-male sex	18	(8)	12	(8)	15	(9)	10	(6)	13	(9)
Heterosexual contact	30	(13)	21	(13)	24	(14)	20	(11)	9	(7)
Hemophilia	4	(2)	0	(0)	1	(1)	1	(1)	1	(1)
Transfusion	4	(2)	1	(1)	1	(1)	2	(1)	0	(0)
Mother at risk/has HIV	1	(<1)	0	(0)	0	(0)	1	(1)	0	(0)
Undetermined/other[3]	28	(12)	19	(12)	27	(16)	29	(16)	26	(19)
TOTAL	**233**	**(100)**	**158**	**(100)**	**174**	**(100)**	**181**	**(100)**	**137**	**(100)**

Table 7C. AIDS cases by HIV exposure category and year of diagnosis
Reported as of 12/31/01 - WA State

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-male sex	293	(55)	233	(57)	200	(55)	251	(57)	155	(54)
Injection drug use (IDU)	57	(11)	58	(14)	48	(13)	56	(13)	34	(12)
IDU & male-male sex	52	(10)	35	(9)	33	(9)	33	(7)	23	(8)
Heterosexual contact	47	(9)	32	(8)	37	(10)	51	(12)	35	(12)
Hemophilia	7	(1)	0	(0)	2	(1)	2	(<1)	1	(<1)
Transfusion	7	(1)	3	(1)	2	(1)	3	(1)	0	(0)
Mother at risk/has HIV	2	(<1)	0	(0)	0	(0)	2	(<1)	0	(0)
Undetermined/other[3]	64	(12)	47	(12)	43	(12)	44	(10)	40	(14)
TOTAL	**529**	**(100)**	**408**	**(100)**	**365**	**(100)**	**442**	**(100)**	**288**	**(100)**

[1]Reporting for recent years is incomplete
[2]Year to date (cases reported as of 12/31/01)
[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 12/31/01 - King County

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	272	(92)	226	(90)	175	(92)	227	(87)	130	(86)
Adult Female Cases	23	(8)	24	(10)	16	(8)	33	(13)	21	(14)
Pediatric Cases	1	(<1)	0	(0)	0	(0)	1	(<1)	0	(0)

Table 8B. AIDS cases by age/gender and year of diagnosis Reported as of 12/31/01 - Other counties

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	193	(83)	139	(88)	140	(80)	150	(83)	122	(89)
Adult Female Cases	39	(17)	19	(12)	34	(20)	30	(17)	15	(11)
Pediatric Cases	1	(<1)	0	(0)	0	(0)	1	(1)	0	(0)

Table 8C. AIDS cases by age/gender and year of diagnosis Reported as of 12/31/01 - WA State

	1997		1998		1999		2000[1]		2000[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Adult Male Cases	465	(88)	365	(89)	315	(86)	377	(85)	252	(88)
Adult Female Cases	62	(12)	43	(11)	50	(14)	63	(14)	36	(13)
Pediatric Cases	2	(<1)	0	(0)	0	(0)	2	(<1)	0	(0)

[1] Reporting for years is incomplete
[2] Year to date (cases reported as of 12/31/01)

Table 9. Deaths of reported AIDS cases by year of death Reported as of 12/31/01 - King County, Other counties, WA State

	1997		1998		1999		2000[1]		2001[1,2]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
King County	106	(49)	87	(58)	64	(48)	75	(59)	60	(71)
Other Counties	110	(51)	63	(42)	70	(52)	52	(41)	25	(29)
All WA State	216	(100)	150	(100)	134	(100)	127	(100)	85	(100)

[1] Reporting for recent years is incomplete
[2] Year to date (deaths reported as of 12/31/01)

Table 10. Demographic characteristics of cumulative reported HIV non-AIDS[1] cases - King County, other WA counties, all WA State, U.S.

	KING[2] COUNTY		OTHER[2] COUNTIES		ALL WA[2] STATE		TOTAL[3] U.S.	
Cases reported as of:	12/31/01		12/31/01		12/31/01		6/30/01[4]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
SEX								
Male	1,756	(89)	738	(77)	2,494	(85)	104,050	(71)
Female	226	(11)	225	(23)	451	(15)	41,694	(29)
Unknown	0	(0)	0	(0)	0	(0)	9	(<1)
AGE GROUP (YRS)								
<13	17	(1)	16	(2)	33	(1)	2,206	(2)
13-19	48	(2)	36	(4)	84	(3)	5,892	(4)
20-29	674	(34)	347	(36)	1,021	(35)	47,397	(33)
30-39	849	(43)	344	(36)	1,193	(41)	56,004	(38)
40-49	307	(15)	171	(18)	478	(16)	25,365	(17)
50-59	79	(4)	43	(4)	122	(4)	6,650	(5)
>59	8	(<1)	6	(<1)	23	(<1)	2,230	(2)
Unknown	0	(0)	0	(0)	0	(0)	9	(<1)
RACE/ETHNICITY								
White, not Hispanic	1,458	(74)	722	(75)	2,180	(74)	54,196	(37)
Black, not Hispanic	304	(15)	109	(11)	413	(14)	75,689	(52)
Hispanic	136	(7)	78	(8)	214	(7)	12,553	(9)
Asian/Pacific Islander	44	(2)	21	(2)	65	(2)	597	(<1)
American Indian/AK Native	30	(2)	18	(2)	48	(2)	905	(1)
Unknown	10	(<1)	15	(2)	25	(1)	1,813	(1)
HIV EXPOSURE CATEGORY								
Male-male sex	1,368	(69)	420	(44)	1,788	(61)	47,305	(32)
Injection drug use (IDU)	134	(7)	178	(18)	312	(11)	21,254	(15)
IDU and male-male sex	177	(9)	85	(9)	262	(9)	6,244	(4)
Heterosexual contact	115	(6)	140	(15)	255	(9)	24,634	(17)
Hemophilia	9	(<1)	4	(<1)	13	(<1)	571	(<1)
Transfusion	7	(<1)	6	(1)	13	(<1)	897	(1)
Mother at risk/has HIV	15	(1)	15	(2)	30	(1)	1,918	(1)
Undetermined/other	157	(8)	115	(12)	272	(9)	42,930	(29)
TOTAL CASES	1,982	(100)	963	(100)	2,945	(100)	145,753	(100)

[1] Persons reported with HIV infection who have not developed AIDS
[2] HIV infection reports received as of 12/31/01. HIV reporting was implemented in 9/99; reporting of cases diagnosed before 9/99 is incomplete at this time
[3] Includes HIV case reports from 36 states and territories with confidential named HIV reporting; excludes WA State at this time
[4] Most recent date that complete U.S. statistics are available
[5] 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

AIDS Cases and annual rates per 100,000 population, by state and age group, reported through June 2001, United States

Area of residence	July 1999–June 2000 No.	July 1999–June 2000 Rate	July 2000–June 2001 No.	July 2000–June 2001 Rate	Cumulative totals Adults/adolescents	Cumulative totals Children <13 years old	Cumulative totals Total
Alabama	472	10.8	451	10.1	6,420	72	6,492
Alaska	11	1.8	26	4.1	485	5	490
Arizona	678	14.2	514	10.0	7,682	40	7,722
Arkansas	205	8.0	197	7.4	3,043	38	3,081
California	4,633	14.0	4,663	13.8	121,218	613	121,831
Colorado	305	7.5	323	7.5	7,205	30	7,235
Connecticut	640	19.5	512	15.0	11,622	176	11,798
Delaware	198	26.3	243	31.0	2,674	22	2,696
District of Columbia	984	189.6	951	166.2	13,395	171	13,566
Florida	4,968	32.9	5,186	32.4	81,591	1,414	83,005
Georgia	1,326	17.0	1,385	16.9	23,362	213	23,575
Hawaii	132	11.1	64	5.3	2,473	16	2,489
Idaho	26	2.1	24	1.9	510	2	512
Illinois	2,072	17.1	1,234	9.9	25,393	272	25,665
Indiana	360	6.1	360	5.9	6,261	42	6,303
Iowa	86	3.0	89	3.0	1,353	10	1,363
Kansas	164	6.2	92	3.4	2,400	12	2,412
Kentucky	240	6.1	298	7.4	3,518	26	3,544
Louisiana	708	16.2	818	18.3	12,965	125	13,090
Maine	67	5.3	44	3.5	967	9	976
Maryland	1,398	27.0	1,611	30.4	22,128	304	22,432
Massachusetts	1,487	24.1	838	13.2	16,455	207	16,662
Michigan	588	6.0	766	7.7	11,466	107	11,573
Minnesota	193	4.0	184	3.7	3,824	23	3,847
Mississippi	414	15.0	470	16.5	4,662	56	4,718
Missouri	493	9.0	447	8.0	9,370	59	9,429
Montana	18	2.0	19	2.1	335	3	338
Nebraska	61	3.7	85	5.0	1,123	10	1,133
Nevada	294	16.2	247	12.4	4,517	28	4,545
New Hampshire	35	2.9	30	2.4	888	9	897
New Jersey	1,865	22.9	1,857	22.1	42,263	754	43,017
New Mexico	133	7.6	114	6.3	2,093	8	2,101
New York	7,069	38.8	5,337	28.1	141,839	2,267	144,106
North Carolina	713	9.3	760	9.4	10,693	116	10,809
North Dakota	4	0.6	3	0.5	107	1	108
Ohio	598	5.3	534	4.7	11,486	123	11,609
Oklahoma	238	7.1	300	8.7	3,869	26	3,895
Oregon	226	6.8	232	6.8	4,893	17	4,910
Pennsylvania	1,618	13.5	1,676	13.6	24,931	333	25,264
Rhode Island	92	9.3	106	10.1	2,082	23	2,105
South Carolina	788	20.3	730	18.2	9,777	80	9,857
South Dakota	9	1.2	22	2.9	180	4	184
Tennessee	735	13.4	751	13.2	8,806	52	8,858
Texas	2,557	12.8	2,767	13.3	54,906	386	55,292
Utah	136	6.4	149	6.7	2,015	21	2,036
Vermont	32	5.4	31	5.1	407	6	413
Virginia	959	14.0	1,016	14.4	13,395	174	13,569
Washington	448	7.8	513	8.7	9,732	35	9,767
West Virginia	68	3.8	79	4.4	1,116	10	1,126
Wisconsin	161	3.1	202	3.8	3,627	29	3,656
Wyoming	18	3.8	6	1.2	185	3	188
Subtotal	**41,723**	**15.3**	**39,356**	**14.0**	**757,707**	**8,582**	**766,289**
U.S. dependencies, possessions, and associated nations							
Guam	18	11.8	9	5.8	55	0	55
Pacific Islands, U.S.	0	0.0	0	0.0	4	0	4
Puerto Rico	1,024	26.3	1,411	37.0	25,071	388	25,459
Virgin Islands, U.S.	45	37.6	15	13.8	468	17	485
Total[1]	**42,923**	**15.5**	**40,894**	**14.3**	**784,032**	**8,994**	**793,026**

[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. See Technical Notes. Totals include 734 persons whose area of residence is unknown.

Source: CDC. HIV/AIDS Surveillance Report, 2001; 13(1) Internet accessible at http://www.cdc.gov/hiv

AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through June 2001, United States

Metropolitan area of residence (with 500,000 or more population)	July 1999–June 2000		July 2000–June 2001		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	54	7.8	20	2.9	594	1	595
Albany-Schenectady, N.Y.	112	12.9	116	13.2	1,779	25	1,804
Albuquerque, N.Mex.	75	11.0	53	7.4	1,128	2	1,130
Allentown, Pa.	32	5.2	47	7.4	831	10	841
Ann Arbor, Mich.	24	4.3	35	6.0	406	9	415
Atlanta, Ga.	753	19.5	911	22.2	16,308	115	16,423
Austin, Tex.	197	17.2	213	17.0	3,967	27	3,994
Bakersfield, Calif.	85	13.2	66	10.0	1,048	8	1,056
Baltimore, Md.	890	35.7	1,110	43.5	14,798	211	15,009
Baton Rouge, La.	150	25.9	175	29.0	1,989	19	2,008
Bergen-Passaic, N.J.	223	16.6	207	15.1	5,497	83	5,580
Birmingham, Ala.	111	12.1	114	12.4	1,946	23	1,969
Boston, Mass.	1,226	20.8	715	11.8	14,462	183	14,645
Buffalo, N.Y.	135	11.8	71	6.1	1,840	19	1,859
Charleston, S.C.	114	20.6	99	18.0	1,590	12	1,602
Charlotte, N.C.	134	9.5	149	9.9	2,181	22	2,203
Chicago, Ill.	1,823	22.8	1,032	12.5	21,976	241	22,217
Cincinnati, Ohio	68	4.2	65	3.9	1,908	15	1,923
Cleveland, Ohio	183	8.2	184	8.2	3,415	42	3,457
Colorado Springs, Colo.	26	5.2	14	2.7	463	5	468
Columbia, S.C.	203	39.3	151	28.1	2,104	16	2,120
Columbus, Ohio	110	7.4	86	5.6	2,251	13	2,264
Dallas, Tex.	633	19.3	589	16.7	12,635	37	12,672
Dayton, Ohio	67	7.0	58	6.1	1,023	17	1,040
Denver, Colo.	222	11.2	243	11.5	5,713	21	5,734
Detroit, Mich.	403	9.0	559	12.6	7,920	73	7,993
El Paso, Tex.	72	10.3	101	14.9	1,132	10	1,142
Fort Lauderdale, Fla.	871	56.7	775	47.8	13,060	246	13,306
Fort Wayne, Ind.	20	4.1	18	3.6	318	3	321
Fort Worth, Tex.	206	12.6	125	7.3	3,302	26	3,328
Fresno, Calif.	86	9.8	66	7.2	1,232	14	1,246
Gary, Ind.	55	8.8	56	8.9	757	4	761
Grand Rapids, Mich.	44	4.2	36	3.3	787	4	791
Greensboro, N.C.	130	11.0	119	9.5	1,720	21	1,741
Greenville, S.C.	115	12.4	109	11.3	1,556	7	1,563
Harrisburg, Pa.	84	13.6	96	15.3	1,088	8	1,096
Hartford, Conn.	252	22.6	160	13.9	4,049	46	4,095
Honolulu, Hawaii	87	10.1	52	5.9	1,805	13	1,818
Houston, Tex.	612	15.3	887	21.2	19,419	163	19,582
Indianapolis, Ind.	167	10.9	155	9.6	2,951	17	2,968
Jacksonville, Fla.	268	25.4	319	29.0	4,574	69	4,643
Jersey City, N.J.	227	41.1	257	42.2	6,622	120	6,742
Kansas City, Mo.	192	10.9	171	9.6	4,008	14	4,022
Knoxville, Tenn.	49	7.3	43	6.3	749	6	755
Las Vegas, Nev.	259	18.8	215	13.8	3,704	27	3,731
Little Rock, Ark.	54	9.7	72	12.3	1,090	14	1,104
Los Angeles, Calif.	1,553	16.6	1,576	16.6	42,561	235	42,796
Louisville, Ky.	120	11.9	127	12.4	1,714	17	1,731
McAllen, Tex.	29	5.4	36	6.3	386	10	396
Memphis, Tenn.	262	23.7	298	26.2	3,258	18	3,276
Miami, Fla.	1,258	57.8	1,355	60.1	24,355	483	24,838
Middlesex, N.J.	130	11.5	135	11.5	3,213	71	3,284
Milwaukee, Wis.	102	7.0	120	8.0	2,002	17	2,019
Minneapolis-Saint Paul, Minn.	181	6.3	163	5.5	3,404	17	3,421
Mobile, Ala.	92	17.2	92	17.0	1,232	14	1,246
Monmouth-Ocean, N.J.	121	10.9	138	12.3	2,890	62	2,952
Nashville, Tenn.	287	24.5	282	22.9	2,836	17	2,853
Nassau-Suffolk, N.Y.	306	11.4	214	7.8	6,611	112	6,723
New Haven, Conn.	317	19.4	305	17.9	6,569	124	6,693
New Orleans, La.	341	26.1	365	27.3	7,070	67	7,137

AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through June 2001, United States (continued)

Metropolitan area of residence (with 500,000 or more population)	July 1999–June 2000		July 2000–June 2001		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
New York, N.Y.	5,876	67.4	4,600	49.4	120,034	2,028	122,062
Newark, N.J.	756	38.7	767	37.7	17,146	326	17,472
Norfolk, Va.	335	21.4	294	18.7	3,893	63	3,956
Oakland, Calif.	321	13.7	308	12.9	8,184	43	8,227
Oklahoma City, Okla.	114	10.9	165	15.2	1,829	7	1,836
Omaha, Nebr.	40	5.7	60	8.4	783	3	786
Orange County, Calif.	217	7.9	374	13.1	5,783	36	5,819
Orlando, Fla.	374	24.4	463	28.2	6,209	82	6,291
Philadelphia, Pa.	1,376	27.8	1,349	26.4	19,327	278	19,605
Phoenix, Ariz.	494	16.4	342	10.5	5,453	26	5,479
Pittsburgh, Pa.	94	4.0	116	4.9	2,410	18	2,428
Portland, Oreg.	176	9.5	197	10.3	3,968	8	3,976
Providence, R.I.	85	9.4	100	10.4	1,956	21	1,977
Raleigh-Durham, N.C.	141	12.8	158	13.3	2,077	22	2,099
Richmond, Va.	173	18.0	157	15.8	2,648	29	2,677
Riverside-San Bernardino, Calif.	312	9.7	390	12.0	7,057	56	7,113
Rochester, N.Y.	106	9.8	41	3.7	2,330	13	2,343
Sacramento, Calif.	70	4.4	207	12.7	3,272	24	3,296
Saint Louis, Mo.	275	10.7	244	9.4	4,808	40	4,848
Salt Lake City, Utah	111	8.7	133	10.0	1,750	14	1,764
San Antonio, Tex.	187	11.9	148	9.3	4,000	28	4,028
San Diego, Calif.	503	17.8	416	14.8	10,766	54	10,820
San Francisco, Calif.	878	52.1	690	39.9	28,165	47	28,212
San Jose, Calif.	132	8.0	105	6.2	3,180	14	3,194
San Juan, P.R.	622	30.8	855	43.5	15,716	242	15,958
Sarasota, Fla.	113	20.5	134	22.7	1,511	23	1,534
Scranton, Pa.	16	2.6	13	2.1	431	4	435
Seattle, Wash.	257	11.0	335	13.9	6,835	20	6,855
Springfield, Mass.	203	34.5	107	17.6	1,783	24	1,807
Stockton, Calif.	49	8.7	46	8.2	779	13	792
Syracuse, N.Y.	73	10.0	46	6.3	1,276	10	1,286
Tacoma, Wash.	54	7.8	64	9.1	863	9	872
Tampa-Saint Petersburg, Fla.	488	21.4	532	22.2	8,626	100	8,726
Toledo, Ohio	26	4.3	26	4.2	582	12	594
Tucson, Ariz.	106	13.2	108	12.8	1,588	10	1,598
Tulsa, Okla.	66	8.4	77	9.6	1,159	9	1,168
Vallejo, Calif.	91	18.0	79	15.2	1,419	11	1,430
Ventura, Calif.	45	6.0	40	5.3	836	3	839
Washington, D.C.	1,699	35.8	1,709	34.7	23,740	289	24,029
West Palm Beach, Fla.	525	50.0	498	44.0	7,694	205	7,899
Wichita, Kans.	62	11.3	23	4.2	737	2	739
Wilmington, Del.	157	27.5	196	33.4	2,136	15	2,151
Youngstown, Ohio	13	2.2	29	4.9	381	0	381
Metropolitan areas with 500,000 or more population	**34,813**	**20.0**	**32,861**	**18.3**	**656,916**	**7,626**	**664,542**
Central counties	***34,044***	***21.5***	***32,035***	***19.6***	***643,669***	***7,488***	***651,157***
Outlying counties	***769***	***4.8***	***826***	***5.0***	***13,247***	***138***	***13,385***
Metropolitan areas with 50,000 to 499,999 population	**4,580**	**9.6**	**4,619**	**9.4**	**76,017**	**834**	**76,851**
Central counties	***4,297***	***10.2***	***4,305***	***9.9***	***70,982***	***760***	***71,742***
Outlying counties	***283***	***5.2***	***314***	***5.6***	***5,035***	***74***	***5,109***
Nonmetropolitan areas	**3,224**	**5.8**	**3,068**	**5.4**	**47,081**	**504**	**47,585**
Total[1]	**42,923**	**15.5**	**40,894**	**14.3**	**784,032**	**8,994**	**793,026**

[1]Totals include 4,048 persons whose area of residence is unknown.

Source: CDC. HIV/AIDS Surveillance Report, 2001; 13(1) Internet accessible at http://www.cdc.gov/hiv

Figure 1. Male adult/adolescent annual AIDS rates per 100,000 population, for cases reported July 2000 through June 2001, United States

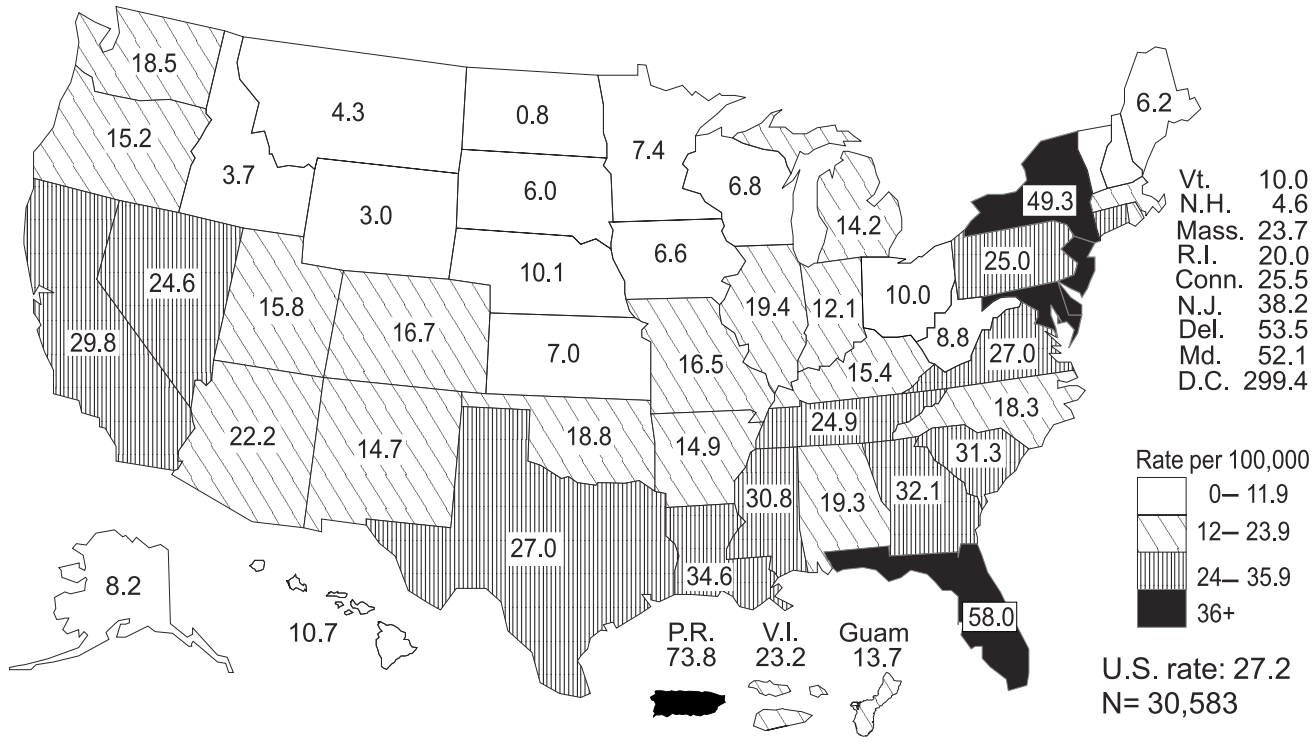
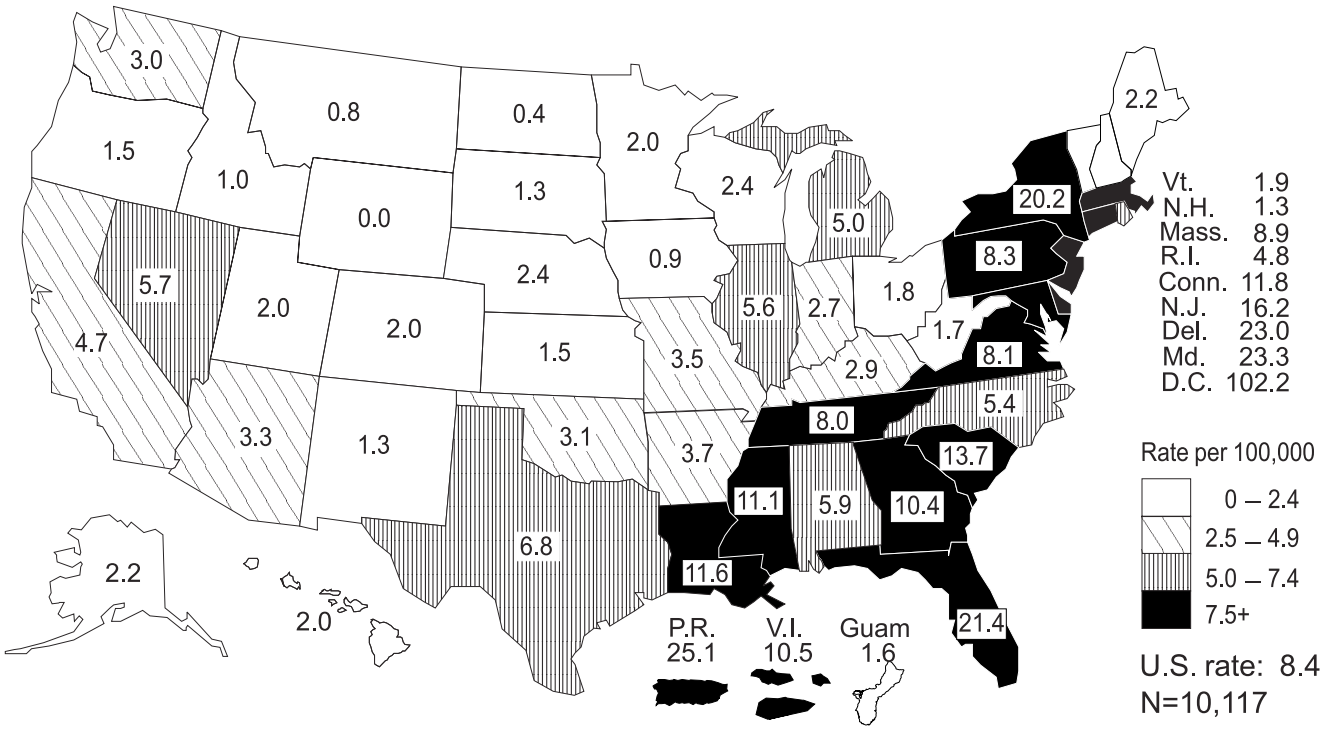


Figure 2. Female adult/adolescent annual AIDS rates per 100,000 population, for cases reported July 2000 through June 2001, United States



Î Source: CDC. HIV/AIDS Surveillance Report, 2001; 13(1) Internet accessible at http://www.cdc.gov/hiv

Figure 3 Pediatric AIDS cases reported July 2000 through June 2001, United States

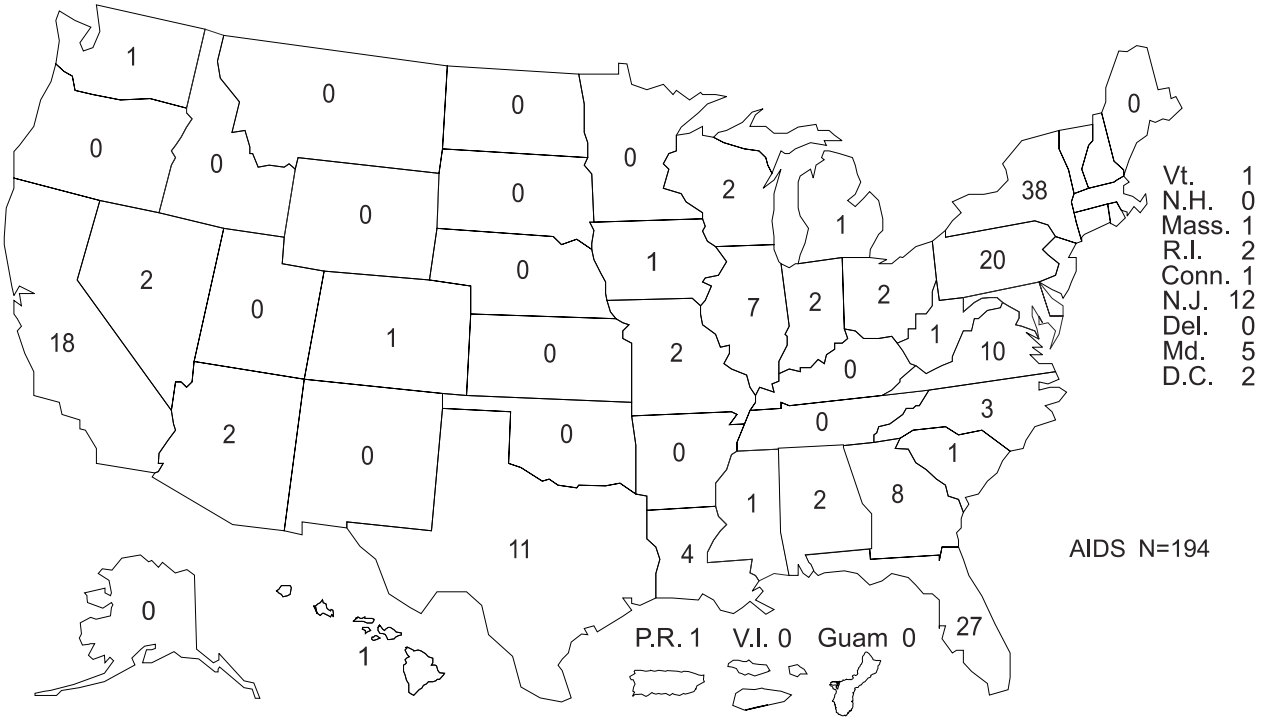
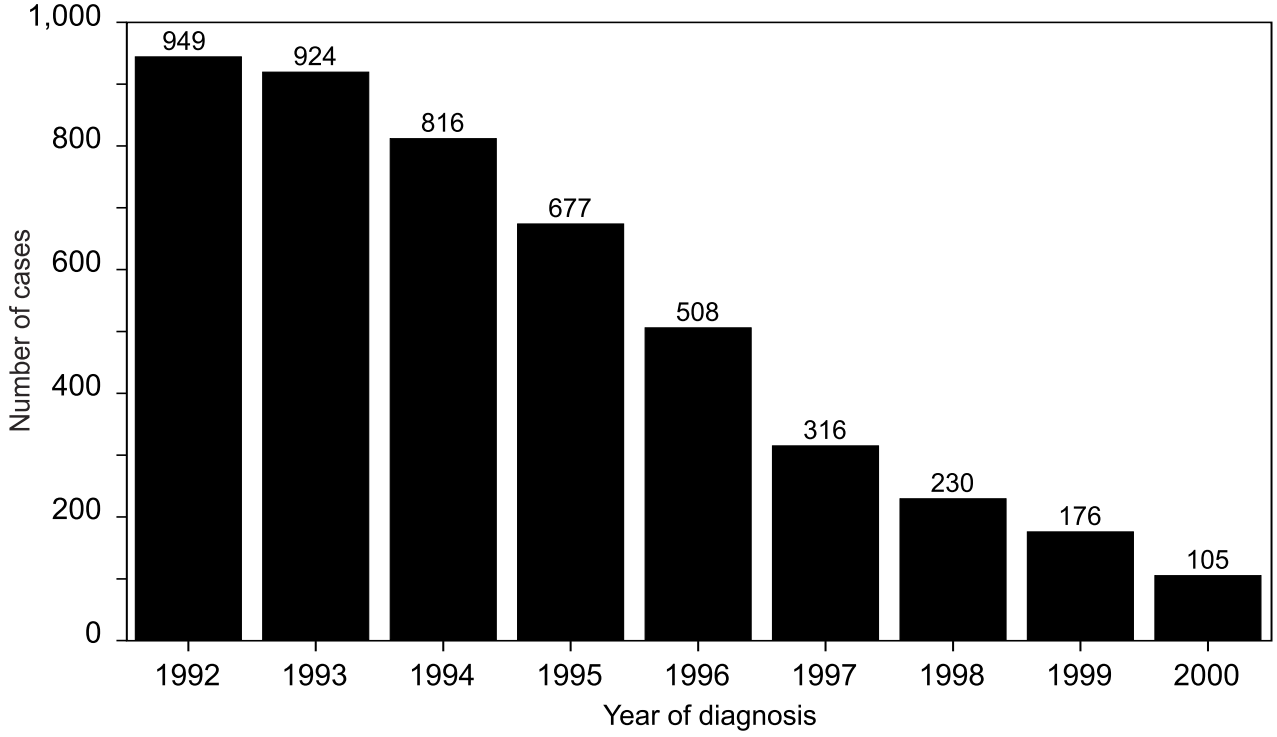


Figure 4 Estimated pediatric AIDS incidence, by year of diagnosis, 1992 through 2000, United States[1]



[1]These numbers do not represent actual cases among children with AIDS diagnosed. Rather, these numbers are point estimates based on cases diagnosed using the 1987 definition, adjusted for reporting delays. The 1993 AIDS surveillance case definition change affected only the adult/adolescent cases, not pediatric cases.

Source: CDC. HIV/AIDS Surveillance Report, 2001; 13(1) Internet accessible at http://www.cdc.gov/hiv

Annual Review of HIV and AIDS in King County

In this article we review the HIV/AIDS epidemic in King County through December 31, 2001, and compare our experience to Washington State as a whole and to the U.S. AIDS case data have been collected nationally since 1981. Information about AIDS, however, only describes HIV-infected persons with advanced disease or immunosuppression. Reporting of residents with all stages of HIV infection was implemented in September 1999 and, for the first time in this report, we describe the entire population of persons reported in Seattle-King County infected with HIV, not only those with AIDS.

KC AIDS Rates Compared with State and National Data

The latest published Centers for Disease Control and Prevention AIDS data[1] show that as of June 2001, the Seattle metropolitan statistical area (MSA) ranked 23rd in the cumulative number and 38th in the annual rate of reported AIDS cases nationally. This was among 103 metropolitan areas of one-half million population or higher. The Seattle MSA (which includes King, Snohomish and Island counties) rate during 7/00-6/01 was 13.9 cases per 100,000 population.

The highest rates in the country were in Miami FL (60.1), New York City (49.4), Fort Lauderdale FL (47.8), West Palm Beach FL (44.0), San Juan, Puerto Rico (43.5), Baltimore (43.5), Jersey City (42.2), and San Francisco (39.9). In comparison to the Seattle MSA rate of 13.9, the Tacoma MSA had a rate of 9.1, while the Portland (Oregon) MSA rate was 10.3 per 100,000.

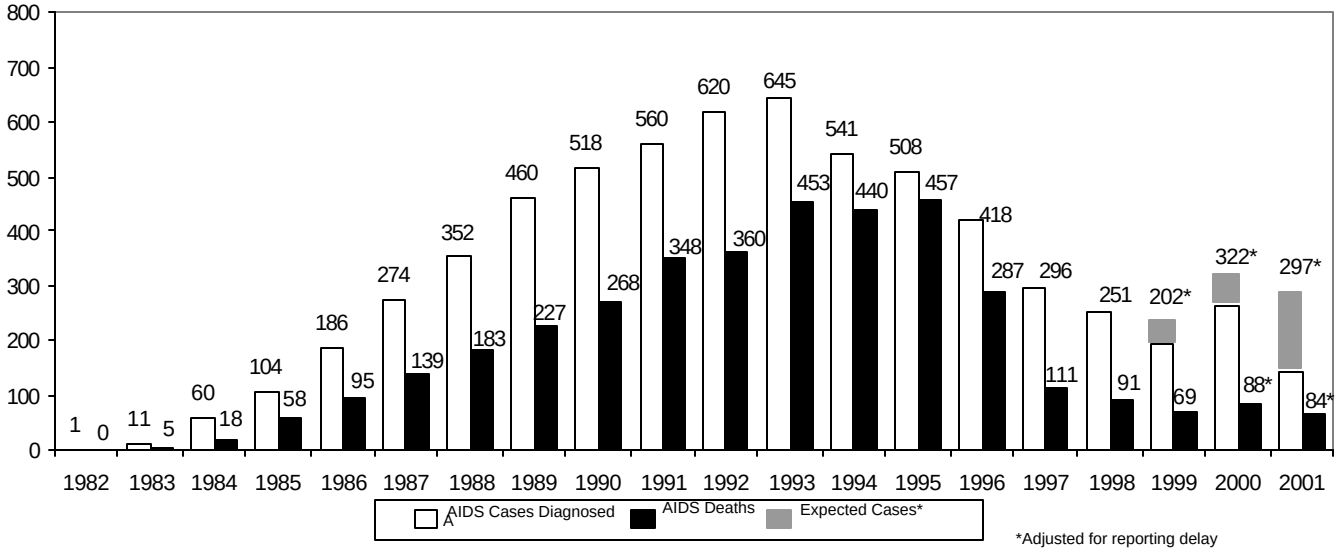
As cases nationally have become more rural, the proportion of US AIDS cases living in the Seattle MSA has declined slowly over time. Seattle's caseload was 1.01% of the US total at the end of 1992, 0.95% at the end of 1996, and 0.87% at the end of 2000.

King County has the highest rate among all Washington counties. About one-third of the Washington population resides in King County, but almost two-thirds of all AIDS cases resided in King County at the time of AIDS diagnosis. Within King County the rate is highest in the city of Seattle.

Diagnoses of AIDS and Deaths

The first King County AIDS case was diagnosed in 1982. Through December 31, 2001, a total of 6,404 residents had been diagnosed with AIDS and 3,755 (59%) of these had died. The numbers of King County AIDS cases and

Figure 1. AIDS cases and deaths in King County by year, 1982-2001



deaths increased through the early 1990s, declined from the mid- to late 1990s, and appear to have stabilized from 1998 to 2001 (Figure 1; cases in 2000-01 and deaths in 2001 are shown with adjustment for delays in reporting recent cases and deaths). This is similar to a pattern seen nationally. A peak of 645 AIDS cases were diagnosed in King County residents in 1993, declining to about 200-250 cases in 1998-2000. The number of deaths due to AIDS peaked in 1995 at 457 deaths, with almost the same number in 1993 (453) and 1994 (440). More recently, the number has dropped to fewer than 100 deaths each year in 1998 through 2001.

The dramatic reduction in both the number of deaths and the delays in progression to AIDS are primarily due to the development and widespread use of effective antiretroviral treatments beginning in the mid-1990s. Also contributing to the reductions may be more effective prophylaxis to prevent opportunistic infections (such as *P. carinii* pneumonia), better monitoring of HIV activity and disease progression (such as by assays of HIV viral load and CD4 counts), and potentially the effect of prevention efforts in reducing HIV transmission rates over the past 10-15 years.

The deaths and AIDS case numbers may no longer be dropping for a variety of reasons. Some persons are not receiving effective treatments—this may be because they learn their HIV status too late in the course of their HIV disease for optimal treatment, have problems accessing treatment, or refuse treatment. Others may experience treatment failures due to problems taking the medicines, adverse side effects, or the development of HIV strains resistant to currently available antiretroviral drugs. Also, as persons with long-standing HIV infection age they die more frequently of conditions unrelated to their HIV infection, but are still counted as deaths among persons reported with HIV.

While both new AIDS cases and deaths have decreased, more King County residents than ever are living with HIV infection and AIDS. These numbers are increasing because the number of new AIDS diagnoses (averaging around 250-350 reported cases) and new HIV diagnoses (estimated at 300-400) exceed the number of deaths each year.

HIV and AIDS was the leading cause of death among 25-44 year old males in King County during the years 1989 to 1992. As of 2000, HIV/AIDS dropped to the 5th leading cause of death among males and the 8th leading cause of death among females in this age group.

Persons Infected with HIV

As discussed above, effective treatments have dramatically delayed the progression of HIV disease to AIDS and reduced the numbers of deaths. This means it is no longer possible to accurately monitor the HIV epidemic by reviewing AIDS data and deaths alone. Therefore, the data below are based upon all persons reported living with HIV infection or AIDS. Public health departments in Washington began collecting case reports of HIV infection in September 1999. HIV infections diagnosed prior to 9/99 are being collected along with newly-diagnosed cases. These data describe the entire population who have been diagnosed with HIV or AIDS and who are in need of treatment or other services, and allow us to monitor changes in the progression from HIV to AIDS and to track the number of newly-diagnosed HIV infections.

As of January 2001, the Washington State Department of Health estimates that as many as 12,000 Washington residents are infected with HIV, including persons with AIDS. About 70% of all HIV and AIDS cases reported in Washington are residents of Seattle, so we estimate that 70% of the 12,000 infected persons are residents of King County. This provides an estimate of 8,400 King County residents currently living with HIV infection or AIDS.

The estimate of 8,400 HIV infections in King County includes 2,732 persons diagnosed with AIDS who are not known to have died, 1,929 persons diagnosed with HIV infection and reported to Public Health, and about 3,700 persons either diagnosed but not yet reported or not yet diagnosed. HIV case counts are incomplete because HIV infection reporting is relatively new and not all cases diagnosed in the past have been reported. In addition, CDC estimates that about one-quarter of all HIV-infected persons in the US are undiagnosed and unaware of their status.[2] If this CDC estimate

holds true for King County (a local estimate is not available), it would mean that about 2,100 of the unreported persons with HIV have not been tested and learned of their HIV positive infection status. An additional 3,755 persons diagnosed with AIDS in King County have died over the past two decades.

Overall, a total of 4,661 persons are reported living with HIV or AIDS in King County as of the end of 2001.

HIV Diagnoses Over Time

The trends described here are based on the reported year of initial diagnosis with HIV infection. Some persons are diagnosed soon after becoming infected and some persons are diagnosed late in the progression of disease, but the date of HIV diagnosis is the best available measure of the known epidemic. In King County, the number of diagnoses increased sharply after 1982 (5 diagnoses), was roughly level from 1987 to 1993 (600-725 annually), decreased through 1997, and remained level in 1997-99 (300 to 320). There were 430 new diagnoses in 2000. Possibly the 1995-1999 diagnoses are incompletely reported; many persons diagnosed with HIV in 1995 have not developed AIDS, and HIV infection reporting was not initiated until the end of 1999. The true level of HIV diagnoses for the past few years is unclear at this time. As the Epidemiology Program continues to collect both new and previously-diagnosed cases, these trends will be monitored closely.

Based upon surveillance data reported through September 2001, we compared the 986 persons diagnosed with HIV infection during 1999-2001, to the 1,040 persons whose earliest known diagnosis was 1996-98. A chi-square statistical test was used to determine if the proportion of cases in a particular group changed statistically between those two periods. The statistically significant changes ($p<.05$) are reported in Table 1. A statistical difference between the two time periods therefore may demonstrate a shift in the epidemic. Other possible reasons for the differences include implementing surveillance for HIV infection in 1999, some groups delay testing longer than others, or if delays in getting tested have changed over time.

Geographic Distribution

Case reports through 2001 show that 86% of persons living with HIV or AIDS in King County resided in the city of Seattle at the time of their diagnosis. In contrast, Seattle is home to about 32% of the King County population. About 8% of persons with HIV/AIDS lived south or west of Seattle, and the remaining 6% resided north or east of Seattle. Although Seattle now makes up a smaller proportion of cases than prior to 1993, the distribution did not change between 1996-98 and 1999-2001. A detailed description of cases by their geographical location of residence at diagnosis can be found in the article that follows this one.

Gender, Race/Ethnicity, and Exposure Category

Among the persons reported living with HIV or AIDS in King County as of December 2001, 91% are men and 9% women [Table 2]. Surveillance data also show 73% of the diagnosed persons are white, 15% black, 8% Hispanic, 2% Asian/Pacific Islander (PI), and 2% American Indian/Alaska Native. Seven percent of case reports do not provide behavioral exposure data. Among the cases with known exposure, 75% are men who have sex with men (MSM), 10% are MSM who also inject drugs (MSM-IDU), 7% are injection drug users (IDU), 6% report having a heterosexual partner with or at risk of HIV infection, 1% were born to HIV-infected mothers, and 1% report receipt of blood products prior to 1985 in the US, or more recently in other countries where effective blood screening has not been implemented [Table 2].

It is important to note that the distribution of exposure categories differs by race and gender. MSM is the most common exposure among all males, accounting for 85% of known exposures among white men, 61% among black men, 79% among Hispanic men, 84% among Asian/PI men, and 50% among American Indian/AK Native men. MSM-IDU is the second most common exposure among white men (10%) and American Indian men (37%), but is third among black men (9%), Hispanic men (7%), and Asian/PI men (4%). IDU is second among black men (16%), Hispanic men (10%), and Asian/PI men (5%), and third among white men (3%) and American Indian men (12%).

Table 1. Demographic characteristics and year of HIV diagnosis for 8,416 Seattle-King County residents reported through 12/31/2001*

	1982-1986		1987-1989		1990-1992		1993-1995		1996-1998		1999-2001		Trend**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	1993-2001
TOTAL	**968**	**100%**	**1,907**	**100%**	**1,984**	**100%**	**1,530**	**100%**	**1,041**	**100%**	**986**	**100%**	
HIV Exposure Category													
Men who have sex w/men (MSM)	763	80%	1,498	79%	1,491	77%	1,112	77%	701	76%	628	71%	Down
Injection drug user (IDU)	33	3%	101	5%	117	6%	109	8%	68	7%	75	8%	
MSM-IDU	129	13%	203	11%	228	12%	125	9%	83	9%	58	7%	
Blood product exposure	18	2%	38	2%	22	1%	9	1%	6	1%	7	1%	
Heterosexual contact	11	1%	41	2%	68	4%	75	5%	59	6%	113	13%	Up
Perinatal exposure	3	<1%	4	<1%	9	<1%	5	<1%	3	<1%	4	<1%	
SUBTOTAL-known risk	957		1885		1935		1435		920		885		
Undetermined / other	11	1%	22	1%	49	2%	95	6%	121	12%	101	10%	
Sex & Race/Ethnicity													
Male	946	98%	1820	95%	1885	95%	1405	92%	943	91%	855	87%	Down
White Male	835	86%	1574	83%	1550	78%	1075	70%	680	65%	578	59%	Down
Black Male	55	6%	130	7%	174	9%	176	12%	119	11%	148	15%	Up
Hispanic Male	39	4%	63	3%	105	5%	102	7%	101	10%	90	9%	Up
Other Male	17	2%	53	3%	56	3%	52	3%	43	4%	39	4%	
Female	22	2%	87	5%	99	5%	125	8%	98	9%	131	13%	Up
White Female	13	1%	55	3%	57	3%	58	4%	47	5%	42	4%	
Black Female	7	1%	23	1%	29	1%	45	3%	35	3%	68	7%	Up
Hispanic Female	1	<1%	2	<1%	4	<1%	13	1%	4	<1%	15	2%	
Other Female	1	<1%	7	<1%	9	<1%	9	1%	12	1%	6	1%	
Race/Ethnicity													
White, not Hispanic	848	88%	1,629	85%	1,607	81%	1,133	74%	727	70%	620	63%	Down
Black, not Hispanic	62	6%	153	8%	203	10%	221	14%	154	15%	216	22%	Up
Hispanic	40	4%	65	3%	109	5%	115	8%	105	10%	105	11%	Up
Asian/Pacific Islander	8	1%	33	2%	45	2%	23	2%	33	3%	25	3%	
Am. Indian/Alaska Native	10	1%	27	1%	20	1%	36	2%	22	2%	12	1%	
Unknown	0	0%	0	0%	0	0%	2	<1%	0	0%	8	1%	
Age at diagnosis of HIV													
0-19 years	22	2%	40	2%	32	2%	17	1%	19	2%	17	2%	
20-24	147	15%	152	8%	122	6%	100	7%	47	5%	77	8%	
25-29	222	23%	396	21%	394	20%	279	18%	174	17%	138	14%	Down
30-34	241	25%	462	24%	473	24%	362	24%	255	24%	230	23%	
35-39	182	19%	386	20%	417	21%	327	21%	237	23%	222	23%	
40-44	77	8%	250	13%	250	13%	203	13%	143	14%	148	15%	
45-49	32	3%	112	6%	167	8%	121	8%	92	9%	86	9%	
50-54	29	3%	49	3%	62	3%	66	4%	45	4%	46	5%	
55-59	9	1%	40	2%	34	2%	40	3%	14	1%	16	2%	
60-64	6	1%	15	1%	19	1%	8	1%	4	<1%	3	<1%	
65 +	1	<1%	5	<1%	14	1%	7	<1%	11	1%	3	<1%	
King County Residence													
City of Seattle	857	89%	1678	88%	1,736	88%	1,297	85%	873	84%	846	86%	
North and East King County	59	6%	107	6%	120	6%	115	8%	75	7%	49	5%	Down
South and West King County	1	<1%	0	0%	128	6%	117	8%	92	9%	90	9%	
Unknown	51	5%	122	6%	0	0%	1	<1%	1	<1%	1	<1%	

* Includes persons who later developed AIDS

**Indicates a statistically significant (p<.05) trend in the proportion of cases by 3 year interval between 1993 and 2001

Among women, heterosexual transmission is most common among whites (56%), blacks (59%), Hispanics (79%), and Asian/Pacific Islanders (71%). Among the relatively few American Indian/Alaska Native female cases, IDU is the most common risk behavior (82%), while 18% had heterosexual partners at risk.

There have been substantial shifts in the epidemic over time by gender, race, and exposure. Between the three-year periods 1996-98 and 1999-2001, the proportion of cases increased among females (from 9% to 13%), blacks (from 15% to 22%), and heterosexual transmission (from 6% to 13%). The proportion of cases decreased among men who have sex with men (from 76% to 71%), males (from 91% to 87%), and whites (from 70% to 63%). These shifts are related in that most of the heterosexual transmission cases are among black females, and most of the men who have sex with men are white men. The proportion of cases increased among black females (from 3% to 7%) and black males (from 11% to 15%), and decreased among white males (from 65% to 59% of the total).

Although most diagnoses were among white males, rates per 100,000 population show the burden of impact on each subpopulation [Table 3]. The rate among males (20.4) is about 8 times higher than among females (2.7). Compared with whites, the rates are four times higher among blacks, two times higher among Hispanics, equal among American Indians, and seven times lower among Asians. Overall rates are highest among black and Hispanic males, and lowest among Asian, white, and Hispanic females.

Age at Diagnosis

Based upon the age at initial diagnosis of HIV infection, the largest numbers of King County residents reported with HIV were age 25-29 (21%), age 30-34 (24%), or age 35-39 (20%). Only 3% of persons were under age 20.

Based on case reports collected thus far, the age distribution has remained largely unchanged throughout the epidemic except that a small increase in the proportion who were ages 20-24 (from 4.3% to 7.5% of the total) was seen between the 1996-98 and 1999-2001 periods. At the same time there was a small decrease (from 1.0% to 0.3%) among persons age 65 and over.

The age distribution is different among males and females. Females tend to be much younger than males when first diagnosed with HIV. This is probably because most women are heterosexually infected and may tend to be younger than their male partners.

Conclusions

There are an estimated 8,400 HIV-infected King County residents. These include 2,700 persons with AIDS and 5,700 persons who have not developed AIDS. Another 3,650 persons have died since 1982. The numbers of deaths and new AIDS diagnoses have declined substantially in recent years primarily due to effective treatments. In the several years, the numbers of cases and deaths appear to have leveled so there are fewer than 100 deaths and about 200-300 AIDS cases each year.

About 400 new HIV diagnoses have been reported each year since HIV infection reporting was implemented in Washington State, but it is important to note that many persons with HIV infection remain undiagnosed because they have never been tested, or have not tested since acquiring HIV. Because there have been fewer deaths than diagnoses each year, the total number of persons living with HIV infection and AIDS in King County is increasing.

HIV-infected persons in King County are largely white men who have sex with men and are 30-45 years of age and residents of Seattle. However, based upon the date of initial diagnosis with HIV infection, an increasing proportion of cases are black males or black females, and the proportion of cases due to heterosexual transmission is increasing.

o Contributed by Jim Kent MS and Sharon G. Hopkins DVM, MPH

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[1]CDC. **HIV/AIDS Surveillance Report**, Volume 13(1), Cases reported through June, 2001.

[2]CDC. Guidelines for National HIV Case Surveillance, including monitoring for HIV infection and AIDS. **Morbidity and Mortality Weekly Report** (RR 13), 12/10/99.

Table 2. King County residents living with HIV or AIDS by area of residence at diagnosis as of 12/31/2001

Living Cases by Area[1]	City of Seattle		KC outside Seattle		Significant
	Number	Percent	Number	Percent	Difference[2]
TOTAL	4,023	100%	635	100%	
SEX					
Male	3,698	92%	534	84%	Yes
Female	325	8%	101	16%	Yes
RACE/ETHNICITY					
White, not Hispanic	2,962	74%	457	72%	
Black, not Hispanic	587	15%	95	15%	
Hispanic	312	8%	60	9%	
Asian	80	2%	14	2%	
American Indian	76	2%	6	1%	
Unknown	6	<1%	3	<1%	
SEX & RACE/ETHNICITY					
White Female	129	3%	53	8%	Yes
White Male	2,833	70%	404	64%	Yes
Black Female	149	4%	28	4%	
Black Male	438	11%	67	11%	
Hispanic Female	21	1%	11	2%	Yes
Hispanic Male	291	7%	49	8%	
Other Female	26	1%	9	1%	
Other Male	136	3%	14	2%	
HIV EXPOSURE CATEGORY					
MSM	2,898	72%	372	59%	Yes
IDU	269	7%	52	8%	
MSM/IDU	378	9%	39	6%	Yes
Blood product exposure	24	1%	15	2%	Yes
Heterosexual	205	5%	74	12%	Yes
Perinatal	16	<1%	5	1%	
SUBTOTAL-Known Risk	3,790	94%	557	88%	
Unknown Risk	233	6%	78	12%	
AGE AT HIV DIAGNOSIS					
0-19 years	93	2%	27	4%	Yes
20-24	399	10%	61	10%	
25-29	855	21%	110	17%	Yes
30-34	994	25%	139	22%	
35-39	789	20%	141	22%	
40-44	454	11%	73	11%	
45-49	259	6%	42	7%	
50-54	117	3%	23	4%	
55-59	43	1%	15	2%	Yes
60-64	11	<1%	2	<1%	
65 +	9	<1%	2	<1%	

1 Residence information was missing for five cases

2 a sgnificant different between the proportion of HIV/AIDS cases in Seattle vs KC outside Seattle was calculated using the Chi-square teste, p<.05

Table 3. New AIDS diagnoses and average annual rates of AIDS, by gender and race/ ethnicity, King County, 1999-2001

	Male		Female		Total	
Race	**Number**	**Rate***	**Number**	**Rate***	**Number**	**Rate***
White, not Hispanic	365	19.2	24	1.2	389	**10.1**
Black, not Hispanic	91	57.3	35	23.2	126	**40.6**
Hispanic	60	38.7	4	3.1	64	**22.4**
Am Indian/AK Native	4	9.7	6	14.5	10	**12.1**
Asian / PI	9	2.8	1	0.3	10	**1.5**
Total	**529**	**20.4**	**70**	**2.7**	**599**	**11.5**

* Annualized rate per 100,000 population

Geographic Distribution of Persons Living with HIV/AIDS in King County

Mapping of the residence of HIV/AIDS cases in King County is important for planning of both care and prevention services. HIV/AIDS, like other sexually transmitted diseases, is more concentrated in urban areas compared to what would be expected based on the population distribution. About 64% of all reported HIV and AIDS cases in Washington reside in King County at the time of diagnosis, while only about 30% of the population resides in the County.

We calculated the rates of persons living with HIV/AIDS reported through December 31, 2001 per 100,000 population by geographical area within King County. We used the total number of persons reported living with HIV infection, including AIDS, because this measure reflects the need for care services and for ongoing prevention services.

Reported cases were categorized into geographical areas based upon the reported zip code of residence at the time of AIDS diagnosis, or HIV diagnosis for persons without AIDS.

Population calculations from the 2000 Census by Zip Code Tabulation Areas (ZCTA) were provided by the Epidemiology, Planning, and Evaluation Unit of Public Health – Seattle & King County. The ZCTA areas were designed to match street and neighborhood boundaries even when the zip code does not.

For reference, the zip codes comprising the ZCTA are shown in Table 1. Table 2 displays the number of persons reported living with HIV or AIDS as of December 31, 2001, the percent of the total, and the rate per 100,000 population.

The rate for the city of Seattle (588.6 per 100,000 persons) is about seven times higher than the King County rate outside of Seattle (81.2). The rate in Central Seattle (1975.4) is eleven times higher than in North Seattle/N. King County (177.5). The rate in the Burien/ Highline area (151.2) is five times higher than in Southeast King County (32.5).

These prevalence rates are expected to increase annually, as there are an estimated 300-400 persons newly diagnosed with HIV infection each year in King County, whereas about 100 die.

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Table 1. ZIP Codes by Geographical Area (ZCTA)

SEATTLE

North Seattle / North King County	98125, 98133, 98155, 98177
Seattle North of Canal	98103, 98105, 98107, 98115, 98117, 98195
North Central Seattle	98102, 98109, 98112, 98119, 98199
Central Seattle	98101, 98104, 98121, 98122
West Seattle	98106, 98116, 98126, 98136
White Center/Skyway	98146, 98168, 98178
Southeast Seattle	98108, 98168, 98178

KING COUNTY OUTSIDE OF SEATTLE

Auburn	98001, 98002, 98047, 98092
Bellevue	98004, 98005, 98007, 98008, 98039
Bothell / Woodinville	98011, 98028, 98072
Burien / Highline	98148, 98158, 98166, 98188, 98198
East / Northeast King County	98014, 98019, 98024, 98045, 98050, 98065, 98224, 98288
Eastgate / Issaquah	98006, 98027, 98029, 98075
Federal Way	98003, 98023, 98354
Kent	98031, 98032
Kirkland / Redmond	98033, 98034, 98052, 98053, 98074
Mercer Island	98040
Renton	98055, 98056, 98058, 98059
Southeast King County	98010, 98022, 98038, 98042, 98051
Vashon	98070

Table 2. HIV/AIDS Prevalence Rates by Geographical Area in King County as of 12/31/01

GEOGRAPHICAL AREA	2000 ZCTA* CENSUS	LIVING WITH HIV OR AIDS	PERCENT OF TOTAL	RATE PER 100,000 POP.
HOMELESS IN KING CO.		**92**	**2%**	**N/A**
SEATTLE SUBTOTAL	**622,533**	**3,664**	**79%**	**588.6**
North Seattle / N. King County	130,724	232	5%	177.5
Seattle North of Canal	172,684	436	9%	252.5
North Central Seattle	94,740	975	21%	1029.1
Central Seattle	59,635	1,178	25%	1975.4
West Seattle	77,187	229	5%	296.7
Southeast Seattle	87,563	330	7%	376.9
Missing data	0	284	6%	N/A
OUTSIDE SEATTLE SUBTOTAL	**1,114,501**	**905**	**19%**	**81.2**
Auburn	87,230	45	1%	51.6
Bellevue	89,359	96	2%	107.4
Bothell / Woodinville	76,238	48	1%	63.0
Burien / Highline	85,965	130	3%	151.2
East / Northeast King County	38,053	20	0%	52.6
Eastgate / Issaquah	85,978	33	1%	38.4
Federal Way	90,623	92	2%	101.5
Kent	92,992	92	2%	98.9
Kirkland / Redmond	152,225	78	2%	51.2
Mercer Island	22,036	9	0%	40.8
Renton	116,688	88	2%	75.4
Southeast King County	89,359	29	1%	32.5
Vashon	10,123	14	0%	138.3
White Center/Skyway	77,632	131	3%	168.7
ALL KING COUNTY	**1,737,034**	**4,661**	**100%**	**268.3**

*Residence at time of diagnosis grouped by US Census Zip Code Tabulation Areas (ZCTA) as specified in Table 1.

Comparison of Characteristics among Recently Arrested Injection Drug Users: Results from the Kiwi Study

The Kiwi Study monitors HIV, hepatitis C, drug use and sexual risk behaviors among injection drug users (IDU) recently booked in the King County Correctional Facility (KCCF) in Seattle and the Regional Justice Center (RJC) in Kent. Everyone arrested in the cities of Seattle, Bellevue, Mercer Island, Issaquah and North Bend and all of King County north of Interstate 90 are booked into the KCCF in Seattle and everyone arrested south of Interstate 90 and outside the city of Seattle are booked in the Kent RJC facility. There is an average of 104 people booked at the Seattle facility per day and 53 booked at Kent. The average length of stay at both facilities is 18.2 days with 45% of inmates in the system being released within 48 hours. There are important demographic, injection and sexual risk behavior differences between arrestees booked at the two sites, as described in the results below.

Methods

The Kiwi Study is an anonymous cross-sectional face-to-face interview survey that began in August 1998 at the KCCF in Seattle and in November 2000 at the RJC in Kent. At the KCCF, participants are recruited through two different methods in an attempt to obtain a broad sample of recently booked IDU. Trained study staff administer a brief survey to all persons being booked in the KCCF at 20 to 24 randomly selected 3.5 hour time periods a month to identify current IDU 18 years and older and invite them to participate in the study. Those who agree are referred to the jail health clinic for HIV and hepatitis C counseling and testing (CT) and completion of the study questionnaire.

Persons who are released from jail before being seen at the KCCF health clinic are referred to a nearby research storefront office for HIV and hepatitis C CT and the study questionnaire. At both Seattle and Kent facilities, eligible IDU who seek HIV CT at the jail health clinics and who were not encountered by study staff in booking (there is no booking recruitment at Kent) are also invited to participate in the study. Information on sexual and drug-use behaviors and health history are collected in the pre-test counseling assessment and more detailed data on drug-use behaviors and traveling patterns are asked in the Kiwi Study questionnaire. Both of the jail health clinics and the research storefront office provide standard HIV post-test counseling.

For this analysis we compared sociodemographics, drug injection and sexual practices of participants from the RJC in Kent with those from the KCCF facility from 11/00-8/01. A previous report describes an overview of earlier Kiwi study results.[1]

Results

Sampling Outcomes: From November 2000 through August 2001, 3,350 screening interviews were conducted in the KCCF booking area. Most (84%) agreed to participate in the initial screening interview, and among these, 16% were IDU eligible to participate in the study. After exclusion of 40 participants who completed the study twice, 580 subjects were available for analysis, including 250 originally identified in booking and 330 (249 at Kent and 81 at Seattle) from the jail health clinics. The overall participation rate for those intercepted in booking and at the jail health clinics was 64%.

Sociodemographic Characteristics: Most of the survey participants at both sites were male (76%). Participants at the KCCF were more likely to be over 30 years of age (77% vs. 69%), be non-white (37% vs. 32%), have no permanent residence prior to their arrest (35% vs. 23%), be unemployed (74% vs. 58%), receive public assistance (33% vs. 20%), and less likely to have completed some college or technical school (28% vs. 46%) (Table 1). The majority of participants from both sites (69%) had spent more than one year incarcerated over their lifetime. The median age at which they first injected drugs was 19 for KCCF participants and 20 for those at Kent RJC.

Sexual behaviors: Most survey participants at both sites (87%) identified themselves as heterosexual, although women were significantly more likely to report bisexual orientation (Table 2). Males at the Kent RJC were more likely to report 2 or more sexual partners in the last year compared to males at the KCCF (69% vs. 55%). Conversely, females at the KCCF were more likely to report 2 or more sexual partners in the last year compared with the women at the Kent RJC (60% vs. 50%). Both men and women at Kent RJC were more likely to report unprotected vaginal sex compared to both sexes at the KCCF (79% vs. 64%). Males at the KCCF were the most likely to report unprotected anal sex with either males or females (15%).

Both women and men at the KCCF were more likely to report a lifetime history of at least one STD and a lifetime history of one type of hepatitis compared to women and men at the Kent facility. Forty-two percent of participants at the KCCF reported a history of hepatitis C infection compared to 30% at Kent RJC. Few of the participants at both sites had ever received a hepatitis B vaccine (HBV)(16%) and among those who did receive the vaccine, only 23% of them reported receiving all three shots. Most participants (82%) reported a prior HIV test.

Drug Use Behavior: Over two-thirds of the participants from the KCCF had injected in the last 30 days, the majority of whom injected multiple times per day (Table 3). Only one-quarter of participants from Kent RJC had injected in the last 30 days (this may be because most clients in Kent complete the Kiwi Study shortly after their standard health exam 14 days after incarceration, thus lowering the percentage of those who injected in the last 30 days). Of the Kent RJC participants who had injected in the last 30 days, over half injected less than once per day.

For KCCF participants, heroin was the most commonly injected drug, and methamphetamine (meth) was the most commonly injected drug among Kent RJC participants. Among the heroin injectors in the KCCF, 74% injected more than once a day compared to 47% of the Kent RJC heroin injectors. Among the meth injectors at the KCCF, 45% injected more than once a day compared to 31% of Kent RJC participants (data not shown). The majority of participants at both sites reported shooting drugs with multiple people, most of whom were friends, shooting partners or sexual partners.

When asked about injection practices in the last six months, participants at Kent RJC were more likely to report injecting with a needle that had been used by somebody else before them (72% vs. 66%), using a cooker after someone else had used it (82% vs. 75%) and dividing up drugs with somebody else using the same needle (backloading) (65% vs. 61%). At both sites participants were most likely to share injection equipment with friends, steady sex partners, and shooting partners. In addition to injection drug use, survey participants used a variety of non-injected drugs, with crack being the non-injection drug used most often by KCCF participants (45%) and crack (34%) and meth (32%) the most common drugs in Kent RJC participants.

Seventy percent of the KCCF participants got their new unused needles from a needle exchange program in which they exchanged the needles personally (Table 4). Among Kent RJC participants, pharmacies were used by over half of the participants, with only 26% using a needle exchange.

HIV and Hepatitis C test results: Fourteen of the KCCF and one of the Kent RJC participants tested positive for HIV; ten of these participants were already aware of their HIV status (Table 1). Seventy-four percent of the KCCF participants tested positive for hepatitis C compared with 52% of those from Kent RJC. Women were more likely to test positive for HCV compared to men (75% vs. 61%) (data not shown). Among Kiwi study participants who reported that heroin was the primary drug they injected in the last year, 70% tested positive for HCV compared to 41% whose primary injection drug was meth (data not shown).

Discussion

There are some very important distinctions between the KCCF and Kent RJC Kiwi Study participants. Those in the KCCF were older, less likely to be white, less likely to have completed at least some college or vocational training, less likely to be employed, more likely to receive public assistance and be homeless. Not surprisingly injection frequency was lower among participants from the Kent RJC whose primary drug of choice was meth compared to

participants from the KCCF in Seattle whose primary drug of choice was heroin.

A study comparing heroin and meth injectors in San Antonio, Texas found that users of meth there were younger, did not inject as frequently, were more likely to be employed and bought more syringes at a time.[2] Heroin users in the study injected more frequently, shared injection equipment with more people, reused one needle multiple times and did not always inject in safe places where they could take the time to clean their works. More stable living circumstances, shorter injection careers, and lower injection frequency may be important factors contributing to the lower HCV seroprevalence observed among participants from the Kent RJC where the primary injection drug is meth. It is interesting to note that KCCF participants tended to inject more frequently than participants from the Kent RJC site regardless of whether they were injecting meth or heroin.

Another important difference between the two sites was the utilization of needle exchange programs and pharmacies. Considering the importance of pharmacies as a source of new syringes, especially in South King County where there is no needle exchange program, assuring continued access to syringes through pharmacies is imperative to prevent and reduce transmission of bloodborne infections among injectors. In 1999 the Washington State Board of Pharmacy determined that it is legal to sell syringes in Washington State for the purpose of preventing disease transmission. Following this decision, Public Health-Seattle & King County initiated a new program to educate pharmacists about the legality of syringe sales to drug injectors and to establish collaborations with individual pharmacies to promote expanded and continued availability of new syringes. *[For more information about this program please contact Robert Marks at (206) 205-5510 or robert.marks@metrokc.gov or see the 1st Half 2001 issue of this report.[3]]*

Only about half of the HCV-seropositive injectors at both sites were aware of their HCV-seropositive status and only a small percent had received HBV vaccinations, and an even smaller number had completed the HBV series. These findings underscore the need for expanded and effective HCV screening and education and the need to routinely provide HBV vaccinations at the jail health clinics, HIV counseling and testing sites, and other clinics that serve IDUs.

Because high proportions of injectors are frequently incarcerated, this is an opportune time to deliver prevention and health services to this population. However, because most injectors only remain in jail for a short time period, coordination between jail health clinics and facilities in the community is essential to assure provision and continuity of services. The lower HCV seroprevalence rate among injectors at the Kent RJC facility demonstrates that there is an opportunity to intervene with younger or newer injectors before they become infected. The high prevalence of sharing of needles and other drug-use equipment shows there is a continued need to make new needles and injection equipment available to all injectors to prevent further spread of HIV and HCV.

For questions about the Kiwi Study, please contact Elizabeth Tesh at: (elizabeth.tesh@metrokc.gov) or 206-296-8666.

o Contributed by Elizabeth Tesh MPH and Hanne Thiede DVM, MPH

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[1]Tesh E, Thiede H. Survey of HIV Prevalence and risk behaviors in recently arrested injection drug users in King County: The Kiwi Study. **HIV/AIDS Epidemiology Report,** PHSKC, 2nd Half 2000, pp. 13-17.

[2]Zule WA, Desmond DP. An ethnographic comparison of HIV risk behaviors among heroin and methamphetamine injectors. **Am J Drug Alcohol Abuse**. 1999;25(1):1-23.

[3]Marks, Robert et al. HAP Report: Expanded Syringe Access Campaign. **HIV/AIDS Epidemiology Report**. PHSKC, 1st Half, 2001, pp. 26-27.

Table 1. Characteristics of King County injection drug users participating in the Kiwi Study, by jail site of booking, 11/00-8/01

	KCCF in Seattle[1] N = 331 %	RJC in Kent[2] N = 249 %	TOTAL Both sites N = 580 %
Gender			
Male	75.4	77.3	75.8
Female	24.6	22.7	24.2
Age (years)			
18 - 29	23.0	31.0	27.0
30 - 39	37.0	44.0	38.0
> 40	40.0	25.0	35.0
Race / ethnicity			
White, not Hispanic	63.1	67.9	65.2
Black, not Hispanic	13.0	5.2	9.7
American Indian / AK Native	6.0	3.2	4.8
Hispanic/Latino	8.2	3.2	6.0
Other	9.7	20.5	14.3
Current type of residence*			
Own house/apartment	46.2	41.4	44.1
Someone else's house/apartment	18.4	35.7	25.9
Hotel/shelter/jail/street	35.4	22.9	30.0
Education			
K - 11	27.2	34.1	30.2
High school graduate or GED	44.4	19.7	33.8
Some college or technical school	28.4	46.2	36.0
Unemployed*	74.0	58.2	67.2
Receiving public assistance*	32.6	20.1	27.2
Total legal income in the last month*			
$0 (no legal income)	44.4	44.2	44.3
$1 – 1,000	37.8	32.5	35.5
≥ $1,001	17.8	23.3	20.2
Total lifetime months incarcerated			
< 1 month	7.3	3.6	5.7
2 – 6 months	14.2	14.1	14.1
7 – 12 months	10.9	12.8	11.7
≥ 13 months	67.6	69.5	68.5
Age first shot drugs			
<19 years	54.7	43.8	50.0
20-29 years	32.0	39.0	35.0
>30 years	13.3	17.2	15.0
HIV seropositive	4.2	0.4	2.6
Hepatitis C seropositive	73.6	52.0	64.4

1 King County Correctional Facility located in Seattle

2 Regional Justice Center located in Kent

* before going to jail

Table 2. Sexual orientation, sexual activity, and health history reported by Kiwi Study participants by gender and jail site of booking, 11/00-8/01

	Males		Females	
	KCCF in Seattle N = 250 %	RJC in Kent N =193 %	KCCF in Seattle N = 81 %	RJC in Kent N = 56 %
Sexual Orientation				
Heterosexual	91.1	97.4	75.3	83.9
Homosexual	2.0	0.5	3.7	1.8
Bisexual	6.9	2.1	19.8	14.3
Opposite-sex partners in last year (no.)				
0	13.3	7.3	7.4	5.4
1	31.5	23.0	29.6	33.9
2 to 4	32.7	38.2	29.6	35.7
$\geq$ 5	22.5	30.4	30.8	14.3
Unknown	0.0	1.1	2.5	10.7
Any same sex partners last year	8.5	2.1	21.0	16.1
Unprotected sex in the past 6 months				
Vaginal	62.9	79.2	65.1	79.3
Anal	14.8	4.3	10.5	8.6
Lifetime health history				
Gonorrhea	17.7	8.4	28.4	28.6
Chlamydia	10.1	13.6	34.6	41.1
Genital warts	5.7	2.6	7.4	7.1
Herpes	4.8	4.2	11.1	1.8
Syphilis	2.4	0.5	6.2	1.8
Hepatitis A	11.3	9.4	14.8	7.1
Hepatitis B	16.9	12.0	23.5	21.4
Hepatitis C	35.1	25.1	49.4	35.7
HBV vaccination	16.9	14.1	21.0	12.5
Prior HIV test	86.3	72.3	86.4	82.1

Table 3. Drug use behavior in the past year, past 6 months, or past 30 days among Kiwi Study participants, by site of jail booking, 11/00-8/01

	Past Year		Past 6 Months		Past 30 Days	
	KCCF in Seattle n =331 %	RJC in Kent n =249 %	KCCF in Seattle n =307 %	RJC in Kent n =216 %	KCCF in Seattle n = 222 %	RJC in Kent n =65 %
Average frequency of injecting in past 30 days						
< Once a week					13.5	13.9
1-6 times a week					16.7	41.5
≥ Once per day					69.8	44.6
Any drugs injected						
Heroin	80.1	47.8				
Heroin and cocaine together (speedballs)	56.8	30.5				
Cocaine	62.5	42.2				
Methamphetamine	38.7	70.7				
Drugs injected most often						
Heroin	59.8	27.3			58.1	27.7
Heroin and cocaine together (speedballs)	8.5	5.6			14.4	4.6
Cocaine	12.1	9.2			11.7	7.7
Methamphetamine	18.7	56.6			15.8	56.9
Other	1.0	1.3			0.0	3.1
Number of injection partners						
0-1 Total			23.1	16.2	29.1	37.5
2-4 Total			34.1	35.5	31.2	38.8
≥ 5 Total			42.9	48.3	39.7	23.7
Injected with a needle used by someone else			65.9	72.2	46.4	49.2
Used a cooker after someone else used it			75.3	82.1	66.7	58.5
Backloaded			61.2	64.9	62.6	58.5

Table 4. Source of new and unused needles in the past 6 months among Kiwi participants by jail site of booking, 11/00-8/01

	TOTAL n = 580	KCCF in Seattle n =331	RJC in Kent n = 249
Any source			
A needle exchange (exchanged personally)	50.9	69.5	26.1
A needle exchange (someone else exchanged)	18.1	18.1	18.1
A drugstore/pharmacy	43.1	36.6	51.8
A friend	33.6	37.8	28.1
Someone who sells needles	16.4	22.4	8.4
A diabetic	12.4	12.4	12.5
A sex partner	10.5	12.1	8.4
A drug dealer	15.2	17.8	11.7
Number one source			
A needle exchange (exchanged personally)	40.9	58.9	16.9
A needle exchange (someone else exchanged)	2.2	0.9	4.0
A drugstore/pharmacy	24.0	13.0	38.6
A friend	10.0	8.5	12.1
Someone who sells needles	2.2	3.0	1.2
A diabetic	3.2	2.6	4.4
A sex partner	2.4	1.2	4.0
A drug dealer	2.4	2.4	2.4
Other	12.7	9.5	16.4

HIV prevalence, incidence and risk behaviors among Seattle-King County STD Clinic patients, 1988-2000

The Centers for Disease Control and Prevention (CDC) sponsored unlinked anonymous HIV seroprevalence surveys in different sentinel populations in selected metropolitan areas between 1988 and 1999.[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 2000 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 less sensitive HIV-1 EIA (Serological Testing Algorithm for Recent HIV Seroconversion, STARHS) methodology described by Janssen et al. was used to estimate HIV incidence.[3] The unlinked nature of the survey avoids participation bias and helps assure a representative sample of the survey population while preserving the anonymity of STD Clinic clients.

Our findings among eligible surveyed STD patients are summarized below. Only data from one visit during each annual survey period are included. Results are combined for women and men who have sex with women only (MSW) because of the similar HIV seroprevalence and presented separately for men who have sex with men (MSM). The terms MSW and MSM are used because men are classified, for the purpose of this analysis, according to the gender of their sex partners. Tables 1 and 2 present cumulative HIV prevalence for the 13 survey years and trends grouped into two-year periods with the exception of 1988-90. Table 3 includes data on recent sexual behaviors, which have been collected since 1997 and Table 4 presents HIV incidence estimates for MSM.

Results

Between 1988 and 2000 data from a total of 20,699 patient visits including 18,465 women and MSW, and 2,234 MSM were collected (Tables 1 and 2). A total of 375 (1.8%) STD Clinic patients were HIV positive including 0.4% of women and MSW and 13.1% of MSM.

Women and men who have sex with women only - HIV prevalence and trends: There were 11,401 (61.7%) MSW and 7,064 (38.3%) women (Table 1). Over half (56.8%) were white, 27.0% African American, 5.3% Hispanic, 4.1% Asian/Pacific Islander, 2.0% American Indian/Alaska Native, and 4.8% of another race or ethnicity. About 60% were younger than 30. The gender distribution remained stable over the years of the survey, while the proportion of African American clients dropped from 31.8% in 1988-90 to 24.3% in 1999-00. 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-nine (0.5%) of the men and 23 (0.3%) of the women tested positive for HIV. HIV prevalence declined significantly from 0.7% in 1988-90 to 0.3% in 1999-00 due to a statistically significant decline among men who had higher HIV prevalence in earlier years of the survey than women. Although HIV prevalence declined in several racial groups, only the decline among American Indians/Alaska Natives was statistically significant. The HIV prevalence among Hispanic clients fluctuated between 1.6% in 1995-96 and 0 in 1997-98. 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 clients younger than 20. HIV prevalence declined significantly among 20-39 year olds and remained unchanged among clients 40 and older. Although HIV prevalence was higher among clients who reported ever having injected drugs in the earlier years of the survey, this difference was less marked in recent years. None of the Female/MSW STD clients who reported injection in the past year have been HIV positive since 1993 (the year this information was first collected). Although the pro-

[a]CDC funded this survey in King County 1988-1997; alternate funding supported the survey 1998-2000.

portion of patients who were diagnosed with gonorrhea declined from 8.6% in 1989 to 2.0% in 1999-00, patients with gonorrhea continued to have higher HIV prevalence.

Men who have sex with men - HIV prevalence and trends: A total of 2,234 male STD patients reported sex with other men (Table 2). They comprised 16.4% of the male STD Clinic clients, increasing from 9.5% in 1988-90 to 26.8% in 1999-00. The demographic characteristics were very different from those of the female and MSW STD Clinic population. Almost 80% were white, 7.5% African American, 6.7% Hispanic, 2.6% Asian/Pacific Islander, 2.0% American Indian/Alaska Native, and 4.0% of another race/ethnicity. About 60% were 30 years or older. A history of drug injection was reported by 9.4% and 4.6% had injected in the year prior to their visit.

A total of 293 (13.1%) MSM were HIV positive including 16.0% of the men who reported sex with men only and 5.4% of the men who reported sex both with men and women (data not shown). During the 13 annual survey periods, only 2 of the 57 MSM younger than 20 tested HIV positive. Since 1997 HIV prevalence among African American MSM has been more than 2-fold higher than the prevalence among white MSM.

HIV prevalence declined significantly from 32.2% in 1988-90 to 4.9% in 1997-98 reaching a low of 3.6% in 1997 when the trend reversed and increased to 6.0% in 1998 and 10.7% in 1999 and 7.3% in 2000 (totaling 64 cases in 1998-00). In spite of the recent increases, the overall reduction in prevalence from 1988-90 to 1998-00 was statistically significant in the total group and in several subcategories.

- HIV prevalence more than doubled in white MSM and black MSM between 1997-98 and 1999-00. The increase was confined to MSM 30 and older.
- Throughout the survey years MSM who were HIV seropositive were more likely to have a diagnosis of gonorrhea compared to those who were seronegative.
- After 1996 none of the HIV seropositive MSM reported injection drug use in the past year.
- Since 1997, 76% of the HIV-seropositive MSM reported 2 or more partners in the past year, 58% reported 2 or more partners in the past 2 months, and 54% reported a new partner in the past 2 months (data not shown).

Recent sexual behaviors: In 1997 information on sexual risk behaviors in the past year 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. Twelve percent of female/MSW clients reported two or more new sex partners in the past 2 months compared to 39.3% of MSM. Condom use at last sex increased with increasing number of partners, although almost 60% of both females/MSW and MSM with five or more partners in the past year reported no condom use at their last sexual encounter.

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 12% of the MSM who reported this behavior were positive. Three percent of women reported sex with a bisexual man and 17.8% of MSM reported sex with a woman in the past year—2.9% of these men were HIV-seropositive.

HIV testing: Information on HIV testing was added to the survey in 1997. Among the STD clients surveyed in 1997-00, 93.1% of women/MSW and 81.1% of MSM had HIV testing and counseling as part of their current visit and 72.7% of women/MSW and 88.3% of MSM had a history of a prior HIV test (not necessarily at the STD Clinic).

Of the 13 women/MSW patients who tested seropositive in 1997-00, eight were tested at this visit, two reported prior positive tests, two reported prior negative tests, and one reported prior testing without getting results. Thus, 3 of the 13 (23%) may not have been aware of their HIV-positive status. Among the 71 MSM who tested HIV-seropositive between 1997 and 2000, 23 received HIV counseling and testing at the current visit, one provided no information on prior testing, 27 had previously tested seropositive, and 20 had previously tested seronegative. Thus, 20 of the 71 (28%) may have been unaware of their HIV-seropositive status. Eighteen of these 20 men were seen in 1999 and

2000 and the percent of HIV-positive MSM clients who might not known their positive status was 41% in 1999 and 27% in 2000.

HIV incidence: The less sensitive EIA (LS-EIA) was performed on 274 stored HIV-seropositive specimens from 1990-00 including samples from 54 females/MSW and 220 MSM. Only 5 HIV-seropositive specimens during this interval were not available for LS-EIA testing. Seven of the 54 HIV-seropositive specimens from females/MSW were non-reactive by LS-EIA indicating that these patients had likely been infected within 6 months prior to the blood draw.

All but one of the LS-EIA non-reactive specimens were from 1990-96, indicating that only one HIV-positive female/MSW client surveyed between 1997 and 2000 had recent HIV infection. There were too few recent seroconverters among this group to allow for a valid calculation of HIV seroincidence.

Among MSM, 23 of the 220 HIV-seropositive specimens were non-reactive by LS-EIA. Nine of these men had previously been diagnosed with HIV – 7 at least 6 months prior to this blood draw and 2 at an unknown date. Specimens from these persons may have tested non-reactive because of antiretroviral treatment or because of an extremely compromised immune system. After exclusion of data from these persons, the estimated HIV seroincidence was 2.3% per year (95% confidence interval 1.0%-4.6%) for the period 1990-2000. HIV seroincidence declined from a high of 3.3% for the period 1990-92 to a low of 0.9% during 1993-1994 and increased again to 1.6% in 1995-96, 2.0% in 1997-98, and 1.9% in 1999-00. These differences were not statistically significant.

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 (7.7%) than among MSM without a gonorrhea diagnosis (1.7)%. This difference was not statistically significant, but there were low numbers of recent seroconverters overall.

Comments

HIV prevalence has remained low among female and MSW STD Clinic clients in King County and has even decreased as a result of a decrease among MSW over the thirteen survey years. Furthermore, none of the surveyed female/MSW STD Clinic clients under 20 tested HIV positive and nobody with a recent drug injection history tested positive after 1992. HIV prevalence among MSM STD clients declined sharply between 1988-90 and 1996-97, and increased in 1998 and again in 1999. Although HIV prevalence declined in 2000 it was still higher than in any other year since 1995.

Estimated HIV incidence among MSM has been relatively stable since 1995-96. Discrepancies in prevalence between different patient groups persisted, with MSM having a 30-fold higher HIV prevalence in 1999-00 than females/MSW and African American MSM having a 2.5-fold higher prevalence than white MSM. African American and Hispanic females/MSW continued 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 and 2000 surveys may have been unaware of their HIV-positive status or were unwilling to disclose their status to the STD Clinic provider.

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] A recently published study from San Francisco of HIV prevalence and incidence among MSM attending the San Francisco Municipal STD Clinic between 1989 and 1998 found that while HIV prevalence decreased dramatically from 55.1% in 1989 to 20.3% in 1998 HIV incidence (as measured by LS-EIA) did not change significantly - annual incidence was 6.6% per year for MSM and 8.2% per year for MSM/IDU.[6] The rise in gonorrhea, chlamydia and syphilis infection rates among King County MSM in recent years (1997 to present) have caused great concern that a resurgence of HIV could occur in our area similar to the increase that has been reported among

MSM in San Francisco.[7,8,9] Analyses of HIV counseling and testing data from publicly-funded sites in King County using both LS-EIA methods and a comparison of repeat testers indicated an increase (not statistically significant) in HIV incidence among MSM testing at these sites.[10]

There are several limitations to this survey that may influence the interpretation of HIV prevalence and incidence trends over time. First, STD Clinic clients may differ between different survey years making comparisons less valid. Secondly, MSM who are aware of their HIV infection may choose to seek care from their own health care providers instead of the STD Clinic, which may explain part of the decline in HIV prevalence. 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, 1999, and 2000 data from 74%, 62%, 59%, and 62% 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 between 1998 and 2000, 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, 12% in 1999, and 10% in 2000 compared to 6.0%, 10.7%, and 7.3% based on testing of survey specimens in those years, respectively. HIV prevalence 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 are unlikely to repeat HIV testing. HIV prevalence rose slightly in 1998, but dropped again in 1999 and 2000 (Wil Whittington, personal communication).

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. Importantly information on prior HIV testing history and results is very complete, which is essential for accurate interpretation of LS-EIA results for estimation of HIV seroincidence.

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. The increases in HIV prevalence in recent years among MSM STD Clinic clients is of continued concern and warrants 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.

o Contributed by Hanne Thiede DVM, MPH, Ted White MPH, and the Survey Team (Nadine Snyder, Eileen Hough, Jan Fields, Stanley Brown, Tamarind Keating, Ben Masaoki, Patricia Christie, Donna Brownlee, and Elizabeth Tesh).

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Table 1. HIV Prevalence and Trends Among Female and MSW STD Clinic Patients, King County, 1988-2000

Characteristics	Women & men who have sex with women only						
	Total	1988-90	1991-92	1993-94	1995-96	1997-98	1999-00
	N (column %)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)
Total	18,465 (100.0)	4,683 (0.7)	2,875 (0.5)	2,973 (0.3)	2,736 (0.3)	2,711 (0.2)	2,487 (0.3)*
Sex							
Male	11,401 (61.7)	2,950 (0.9)	1,769 (0.6)	1,886 (0.4)	1,667 (0.4)	1,567 (0.2)	1,562 (0.3)*
Female	7,064 (38.3)	1,733 (0.5)	1,106 (0.4)	1,087 (0.3)	1,069 (0.3)	1,144 (0.3)	925 (0.2)
Race/ethnicity[1]							
White	10,459 (56.8)	2,259 (0.4)	1,542 (0.4)	1,734 (0.2)	1,592 (0.3)	1,600 (0.2)	1,432 (0.1)
Black	4,972 (27.0)	1,489 (1.1)	878 (0.8)	787 (0.6)	630 (0.5)	584 (0.5)	604 (0.5)
Hispanic	977 (5.3)	213 (0.9)	172 (0.6)	147 (1.4)	126 (1.6)	160 (0)	159 (1.3)
Asian/PI	759 (4.1)	148 (0.7)	89 (0)	108 (0)	142 (0)	120 (0)	152 (0)
AI/AK Native*	366 (2.0)	103 (3.9)	47 (2.1)	57 (0)	58 (0)	54 (0)	47 (0)*
Other	890 (4.8)	153 (0.7)	136 (0)	138 (0)	177 (0)	193 (0)	93 (0)
Age (years)							
<20	2,137 (11.6)	699 (0)	378 (0)	353 (0)	267 (0)	244 (0)	196 (0)
20-29	8,645 (47.1)	2,298 (0.8)	1,420 (0.5)	1,391 (0.3)	1,288 (0.1)	1,214 (0)	1,034 (0.2)*
30-39	4,806 (26.2)	1,177 (1.3)	711 (0.8)	787 (0.6)	700 (0.7)	729 (0.4)	702 (0.3)*
40+	2,777 (15.1)	496 (0.4)	327 (0.6)	441 (0.2)	448 (0.7)	517 (0.6)	548 (0.5)
IDU ever							
No	17,182 (93.1)	4,382 (0.5)	2,656 (0.4)	2,758 (0.3)	2,534 (0.3)	2,549 (0.2)	2,303 (0.3)*
Yes	1,283 (6.9)	301 (3.7)	219 (2.3.)	215 (1.4)	202 (0.5)	162 (0)	184 (0.5)*
IDU last year[1]							
No	10,470 (96.0)	NA	NA	2,857 (0.4)	2,596 (0.3)	2,626 (0.2)	2,391 (0.3)
Yes	437 (4.0)	NA	NA	116 (0)	140 (0)	85 (0)	96 (0)
Sex w/IDU ever							
No	16,897 (91.5)	4,444 (0.7)	2,563 (0.4)	2,719 (0.3)	2,454 (0.3)	2,467 (0.2)	2,250 (0.2)*
Yes	1,568 (8.5)	239 (1.7)	312 (1.6)	254 (0.4)	282 (0.4)	244 (0.4)	237 (0.8)
Gonorrhea[2]							
No	16260 (96.0)	2,890 (0.5)	2,680 (0.4)	2,892 (0.3)	2,692 (0.3)	2,669 (0.2)	2,437(0.2)*
Yes	685 (4.0)	273 (0.7)	195 (1.5)	81 (0)	44 (2.3)	42 (0)	50 (2.0)

*Indicates statistically significant trend over time at p<0.05
Individual categories may not add up to total because of missing data
[1]IDU in the last year collected 1993-2000
[2]Gonorrhea at this visit collected 1989-2000

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We appreciate the collaboration of the STD Clinic, which makes this survey possible

Table 2. HIV Prevalence and Trends Among MSM STD Clinic Patients, King County, 1988-2000

Characteristics	Men who have sex with men						
	Total	1988-90	1991-92	1993-94	1995-96	1997-98	1999-00
	N (column %)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)	N (HIV+%)
Total	2,234 (100.0)	311 (32.2)	298 (19.1)	323 (12.4)	319 (7.8)	411 (4.9)	572 (8.9)*
Race/ethnicity							
White	1,716 (76.9)	258 (32.6)	243 (19.8)	252 (12.3)	222 (7.2)	306 (3.9)	435 (9.2)*
Black	168 (7.5)	21(28.6)	28 (25.0)	22 (9.1)	28 (10.7)	34 (8.8)	35 (22.9)
Hispanic	150 (6.7)	--	--	24 (4.2)	24 (12.3)	21 (0)	51 (5.9)*
Asian/PI	58 (2.6)	--	--	--	--	--	22 (0)*
AI/AK Native*	45 (2.0)	--	--	--	--	--	--
Other	94 (4.2)	--	--	--	24 (4.2)	32 (6.3)	--
Age (years)							
<20	57 (2.6)	--	--	--	--	--	--
20-29	911 (41.1)	139 (28.1)	123 (13.0)	138 (13.0)	136 (7.4)	178 (5.1)	197 (1.5)*
30-39	792 (35.8)	118 (34.7)	116 (22.4)	109 (13.8)	96 (8.3)	136 (5.9)	217 (14.3)*
40+	455 (20.5)	44 (38.6)	47 (29.8)	64 (10.6)	72 (6.9)	86 (3.5)	142 (11.3)*
IDU ever							
No	2,023 (90.6)	290 (31.4)	249 (18.1)	292 (12.7)	287 (7.7)	387 (4.7)	518 (9.1)*
Yes	211 (9.4)	21 (42.9)	49 (24.5)	31 (9.7)	32 (9.4)	24 (8.3)	54 (7.4)*
IDU last year[1]							
No	1,550 (95.4)	NA	NA	303 (12.2)	299 (8.0)	398 (5.0)	550 (9.3)
Yes	75 (4.6)	NA	NA	20 (15.0)	20 (5.0)	--	22 (0)
Sex w/IDU ever							
No	2001 (89.6)	287 (32.8)	256 (18.7)	288 (12.2)	282 (7.8)	381 (4.5)	507 (8.9)*
Yes	233 (10.4)	24 (25.0)	42 (21.4)	35 (14.3)	37 (8.1)	30 (10.0)	65 (9.2)*
Gonorrhea[2]							
No	2,006 (93.0)	203 (27.1)	263 (13.7)	309 (11.3)	307 (7.2)	385 (4.4)	539 (8.7)*
Yes	150 (7.0)	30 (36.7)	35 (60.0)	--	--	26 (11.5)	33 (12.1)*

*Indicates statistically significant trend over time at p<0.05

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

1IDU in the last year collected 1993-2000

2Gonorrhea at this visit collected 1989-2000

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

Table 3. Recent sexual behaviors among STD Clinic patients, King County, 1997-00

Sexual behaviors	Women and men who have sex with women only N=5,198	Men who have sex with men N=983
	Percent	Percent
Numbers of partners in past yr.		
0 partners	3.5	1.8
1 partner	29.4	12.5
2 partners	29.1	14.7
3 partners	15.7	12.6
4 or more partners	22.3	58.4
Number of partners in past 2 mo.		
0 partners	16.6	9.2
1 partner	56.8	34.9
2 or more partners	26.6	55.9
Number of new partners in past 2 mo.		
0 new partners	56.5	33.5
1 new partner	31.9	27.2
2 or more new partners	11.5	39.3
Condom used at last sex by no. of partners		
1 partner past year	29.5 (N=1,300)	29.3 (N=92)
2-4 partners past year	37.0 (N=2,482)	39.6 (N=278)
$\geq$ 5 partners past year	43.3 (N=677)	42.9 (N=403)
Sex with IDU in past yr.		
Yes	4.3	4.8
Sex with HIV+ in past yr.		
Yes	0.5	13.3
Exchanged $/drugs for sex in past yr.		
Yes	5.4	3.5
Sex with MSM (women) in past yr.		
Yes	3.3	NA
Sex with women (MSM) in past yr.		
Yes	NA	17.8

Table 4. HIV Prevalence and Estimated Annual Incidence Among MSM STD Clinic Patients, King County, 1990-2000

Year of survey	Men who have sex with men	
	Prevalence %HIV+ (95% CI*)	Estimated Incidence % new HIV+ (95% CI*)
All Years (1990-2000)	11.0 (9.7-12.4)	2.3 (1.0-4.6)
1990-92	21.2 (17.5-25.3)	3.3 (0.6-9.7)
1993-94	12.4 (9.1-16.3)	0.9 (0.0-6.7)
1995-96	7.8 (5.3-11.2)	1.6 (0.3-7.1)
1997-98	4.9 (3.1-7.3)	2.0 (0.4-5.7)
1999-00	8.9 (6.8-11.5)	1.9 (0.4-5.7)

* 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 statistically significant

The Washington State HIV Treatment Adherence Project

Strict adherence to antiretroviral regimens is necessary to prevent viral resistance to these medications. Because of this, it is important to determine which interventions or services might be effective in enhancing adherence to HAART regimens. In 1999, the Washington Department of Health contracted with the HIV/AIDS Project Development and Evaluation Unit (HAPDEU) at the UW School of Social Work, to conduct an eight-site pilot study of HIV treatment adherence programs in communities across the state.

Survey data, viral loads, and CD4 counts were examined for 457 HIV-positive individuals who enrolled in the project. Three community-based AIDS service organizations, 3 primary care clinics, and one health department participating in the HIV Treatment Adherence Demonstration Project designed adherence programs and delivered services from 5/1999 through 9/2000. An additional clinic site participated in the research activities but did not add adherence services to their ongoing care delivery. All of the sites provided client education, follow-up, medication organizer boxes, and referrals for outside services as needed. Programs differed from each other in a number of ways, including staffing levels and role delineation, agency readiness, agency philosophy, recruitment strategies, training and background of staff, and additional adherence services provided.

The clients in the project were asked about their experiences taking HIV medications and about the services they received to help them adhere to their regimens. The things they most commonly talked about were:

Side effects of medications: Some participants talked about how difficult it was to live with the side effects, some said that they missed doses of their medications to avoid the side effects, and some said they wished they had more information about side effects and how to deal with them.

Emotional issues around taking the medications: A number of participants said that depression was an issue for them, and some said the medications brought up feelings about quality of life, self esteem, and other emotions with which they had to cope. Some shared their personal ways of coping with these problems, such as by making changes in life situations or routines, doing "self-talk", getting help from professionals, and support from family and friends.

Relationship with their health care provider: Participants said that their relationships with their health care providers were important to them, and were important to their adherence. Some participants said that they wanted to feel cared-about, listened-to, and given enough information, such as about possible toxic effects of the medicines. They reported that they want their providers to be experienced in HIV/AIDS care, and accessible to them, for example, by telephone or for an appointment without an undue wait.

The research does suggest that services specifically targeting HIV medication adherence result in greater adherence for some patients. Certain features of the services which appeared to be linked to program success were:

- Having at least one program staff person with medically-related training.
- Having a focus on building a strong client-provider relationship.
- Having adequate support from the program's administration and enough resources such as office space.
- Doing active outreach to enroll clients and inform providers about the program.

For participants whose baseline adherence was less than 95%, analysis of the data was conducted to evaluate changes in self-reported adherence over time. In those participants receiving services from sites with this combination of features, self-reported adherence increased from a mean of 80% to 90%. This improvement was compared with participants in programs without these factors, which demonstrated declines in adherence from a mean of 85% to 77%.

A number of other results were suggested by the research. A few of these are:

- The clients who entered the program seemed to fall into one of 2 groups: 1) clients who had

poorer daily health, more symptoms and more depression; 2) clients who had better daily health, fewer symptoms, and less depression. Interestingly, those who entered the program feeling better had more difficulties in their adherence if, over the course of the study, they experienced problems such as side effects or schedule changes.

• Clients' answers to the question, *"How sure are you that you will be able to take all or most of the HIV medications as directed?"* was an indicator of whether or not they could adhere to their regimens. In other words, many clients can predict whether they will be able to follow their regimen or not. This might be useful for communicating between provider and client about making decisions about regimens.

For more information on the Treatment Adherence Project, please call HAPDEU at (206) 685-1679 or Darren Layman at (360) 236-3452 or email at Darren.Layman@doh.wa.gov.

o Contributed by Darren Layman, Francie Petracca and Liz Moore

HIV/AIDS program
Public Health Seattle & King County

HAP Report: HIV Early Intervention Services in King County-A History & Community Resource Inventory

This article describes King County "Early Intervention Service" (EIS) efforts which are highly prioritized services in the HIV Prevention Strategic Plan through 2005, issued in January 2001 by the US Centers for Disease Control & Prevention (CDC). Goals include increasing the proportion of persons with HIV who are aware of their infection from the current estimate of 75% to 95% and increasing the proportion of persons with HIV who are in care from the current estimate of 50% to 80% – both by 2005.

The King County Ryan White Title I Care Planning Council recently deemed our local efforts to be adequate and not in need of further funding. King County and Seattle have a long and reasonably successful record of seeking to assure EIS services to appropriately targeted populations, as summarized below. However, this year the Legislature has reduced AIDS Omnibus resources (effective 7/1/02) by 4.4% and next year there is a threat that we may have a further loss of the motor vehicle excise tax (MVET) resources to public health, including $1.1 million used within the HIV/AIDS program. These resources proposed for cuts support EIS activities and could jeopardize meeting CDC goals.

The Health Resources & Services Administration (HRSA) of the federal government's Department of Health & Human Services (DHHS) includes an HIV/AIDS Bureau which administers the Ryan White CARE Act grant to extended metropolitan areas such as King County and to states and territories. HRSA has recently determined that EIS may be funded with Ryan White resources, including "efforts to identify and create linkages with key points of entry for individuals newly diagnosed with HIV or those knowledgeable of their HIV status but not in care". HRSA's HIV/AIDS Bureau "relied on the Congressional Managers' Statement which defines EIS as counseling, testing, and referral activities designed to bring HIV positive individuals into the local HIV continuum of care". Thus, funded EIS efforts can include: the provision of HIV counseling & testing (C/T) to persons at high risk of HIV; information on living with HIV disease and managing therapeutic regimens; counseling on modifying behaviors that compromise one's own or others' health status; and referrals to care, case-management, and prevention and risk-reduction programs for high-risk persons who test HIV negative.

HIV Counseling & Testing

Public Health – Seattle & King County (Public Health) began providing clinical services with local resources in 1983 and with sexually transmitted disease (STD) research support to the University of Washington. Public Health hired a Family Nurse Practitioner, trained her to look for and recognize early signs of AIDS and related conditions, and she provided medi-

cal advice and referral. This was before HIV was identified and HIV infection became established as the etiology of AIDS.

In 1985, when HIV testing became available, Public Health began promoting HIV C/T to persons known to be at high risk of infection, initially men who have sex with men (MSM) and later injection drug users (IDU). At first, HIV C/T was provided at the Public Health STD Clinic at Harborview Medical Center; then, on several occasions, Public Health expanded and relocated services, based on service demands and resources. In late 1985, thanks to a grant from the US Centers for Disease Control and Prevention (CDC) for AIDS control demonstration research, HIV testing and KABB (knowledge, attitudes, beliefs, and behaviors) monitoring was marketed and provided to thousands of local MSM.

After that grant support from the CDC ceased in 1989, Public Health's HIV C/T efforts, which had been broadened to include other (non-MSM and IDU) high risk populations, continued under support primarily from state AIDS Omnibus funds. Data from this program have become the mainstay of our ability to summarize HIV C/T in many thousands of high-risk persons in our region. In 1987 another DHHS grant from NIDA (National Institute on Drug Abuse) then provided three years of resources to provide HIV C/T to thousands of IDU and their sex partners until 1990. Such grants also provided resources needed to build and begin community responses to HIV/AIDS, including substantial support for People of Color Against AIDS Network (POCAAN), and the Street Outreach Services (SOS). In addition, CDC serosurveillance studies in the 1980's and early 1990s provided HIV C/T Services in a number of venues.

HIV C/T, initially largely based at alternative testing clinics, was gradually moved from clinic sites to the field through the provision of services at: community-based agencies (e.g., POCAAN, SOS, the Stonewall [drug] Treatment Agency, and at Lifelong AIDS Alliance [formerly the NW AIDS Foundation]); at community events (e.g., the annual Gay Pride celebration); at public health needle exchange sites; and at businesses catering to high risk persons such as bathhouses for MSM. In 2000, declining resources and demand for HIV C/T resulted in the closure of the specific alternative clinic for HIV C/T, and the model became totally outreach-based.

In 2001, disease intervention specialist (DIS) staff who provide HIV C/T were merged with STD Clinic DIS in a departmental effort to better integrate similar programs. Also in 2001, for the first time, community-based agency staff were trained and independently funded (with CDC and HRSA resources) to provide HIV C/T to constituents, particularly MSM and IDU of color and high risk youth. Current programs are listed in the table on page 41. However, for referrals of clients for HIV C/T it is best to call the HIV/STD Hotline (206-205-7837, 206-205-STDS) as specific sites and times may change.

As in most regions of the country, in the early years of the HIV/AIDS epidemic (from 1982 into the early 1990s) access to experienced care providers was problematic, especially as

Current HIV Care Referral Programs in the Seattle Area

KING COUNTY PROJECTS:	*SUPPORTED BY:*	*PROVIDE SERVICES TO:*
AIDS Care Access Project – (ACAP) information service giving help in finding care resources.	Ryan White Title I funds; Collaboration between Public Health, King County Medical Society, and WA Hospital Association	All persons with HIV needing access to primary medical care, dental care, health insurance, etc.
One-on-One Program – information & clinical service providing baseline CD4 cell, viral load, other testing, and basic clinical services.	Ryan White Title I funds, Seattle resources; and Public Health's HIV/AIDS Program	Persons newly identified with HIV, some of whom may be reluctant to seek care requiring identities after anonymous testing.
Prevention Worker Training – designed to help workers find HIV+ persons who may need help accessing clinical services.	Ryan White Title I funds	Prevention workers and their agencies.

the number of HIV and AIDS cases grew substantially. Early providers willing to become involved readily became saturated and could not manage more patients who were rapidly developing profound and complex medical and social needs. Despite establishment of a large HIV/AIDS Clinic at the region's public hospital, Harborview Medical Center, by the late 1980s it was becoming difficult to locate appropriate providers about the time local investigators[1] were showing that patients lived longer and better in the hands of providers with greater experience.

Public health hired a consultant to work with community partners to investigate options for assuring better care access to persons with AIDS and HIV, and eventually facilitated development of a model similar to one established for underinsured pregnant women in King County. This involved developing a collaboration between the King County Medical Society, the Washington Association of Hospitals (later the Washington Hospital Foundation), and public health. The project is now known as the AIDS Care Access Project (ACAP). Additionally, public health, in collaboration with the then NW AIDS Foundation (now the Lifelong AIDS Alliance) developed informational packets for interested physicians, and with UW physician consultants recruited physicians throughout the region to become involved in HIV/AIDS care.[2,3] Eventually, ACAP developed a roster of some 250 experienced HIV medical care providers and nearly 100 dentists that will accept persons living with HIV. ACAP continues to recruit and help train providers, and to provide referrals to clients.

In 1995 the Ryan White Care Planning Council prioritized resources to help newly identified individuals with HIV learn their CD4 and viral load status, to obtain a baseline physical assessment of their health, to provide needed immunizations, and to help clients understand their options and find on-going care for their HIV infection. Public Health successfully applied for these funds and developed the "One-on-One" program that continues to benefit from Ryan White Title I support.

Research on Counseling and Testing

The HIV/AIDS Program (HAP) established an extensive database on knowledge, attitudes, and risk behavior on persons seeking HIV C/T at HAP, starting in 1986, initially as part of a CDC AIDS Control Demonstration project. The data have been reported in several peer-reviewed publications[4-9] and have contributed to our understanding of disease and behavior patterns among local testers.

Between 1997 and 2001 Public Health collaborated with Dr. Freya Spielberg (now at the UW Center for HIV/STD Research) on an HIV Alternative Testing Study (HATS) funded by the CDC. Her studies in local high risk populations have revealed and helped to explain local reasons why persons avoid or delay HIV C/T and have identified ways that new counseling and testing methods help to encourage testing.

In the HATS study, a C/T preference survey was developed after focus groups[10] and interviews with 101 clients, and administered to 460 clients from the three venues.[11] Barriers to HIV testing included fears about finding out results (48%), anxiety while waiting for results (40%), concerns about anonymity (33%), ability to pay for HIV treatment (29%), inconvenience (25%), and aversion to venipuncture (20%). Clients indicated preferences for rapid testing (25%), home self-testing (19%), oral fluid testing (17%), urine testing (17%), serum testing (16%), and home specimen collection (1%). Those never tested for HIV before (n=61) were more likely to prefer home self-tests ($p=0.05$) and urine tests ($p=0.04$) than clients who had tested in the past year (n=271). Study participants also desired pre-test and post-test counseling options. Some clients (30%) preferred written materials instead of face-to-face pre-test counseling, and 43% wanted access test results by telephone.

Dr. Spielberg then compared acceptance, completion of testing, and receipt of test results for four different C/T strategies for IDU at a needle exchange (NE), MSM at two bathhouses (BH), and STD clinic clients.[12] Four strategies were offered on random days:1) face-to-face counseling and standard blood testing; 2) face-to-face counseling and rapid testing, 3) standard face-to-face counseling and oral fluid testing; and 4) an alternative pre-test counseling strategy with the choice of written materials or face-to-face risk reduction counseling and standard blood testing. Testing acceptance varied by strategy and site. At the NE and BH, 79% of clients preferred

written pretest materials instead of face-to-face pre-test counseling; completion of specimen collection also was highest with this strategy (66% at the NE, 82% at the BH). The proportion of persons who received test results within one month ranged from 56% (standard) to 83% (rapid) at the NE; 74% (standard) to 99% (rapid) at the BH; and 68% (standard) to 98% (rapid) at the STD clinic. At the BH, 93% of clients chose telephone results, compared with 31% at the NE.

The study showed that standard HIV testing was a significantly less effective strategy than rapid testing or oral fluid testing for helping clients learn their HIV status at all three sites. Making counseling optional improved testing effectiveness at the needle exchange, but decreased effectiveness at the bathhouses. Depending on the balance between acceptance of testing, completion of specimen collection, and receipt of test results, the most effective strategy at each site was either oral fluid or rapid testing.

Cost analysis of these strategies revealed[13] that in one year of testing (2 four hour sessions per week) at the BH rapid testing for HIV was both more effective in providing clients with test results and more cost-effective than oral fluid testing and standard testing. In contrast, at the NE oral fluid testing was most effective, but rapid testing was most cost-effective. Standard testing was a significantly less effective and less cost-effective strategy than other strategies for helping clients learn their HIV status at both the NE and the BH. Preliminary cost-effectiveness models that describe costs per case of HIV prevented suggest that rapid testing, oral fluid testing, and optional counseling are more cost saving than standard testing, if they all have similar impact on risk behaviors.

Although making counseling optional increases the acceptability of HIV testing among IDU, it is not yet clear, whether HIV risk behaviors are reduced more by face-to-face counseling than by written materials for clients who do not want face-to-face counseling. This question is now under investigation by Dr. Spielberg through a NIDA funded grant. Also, Dr. Spielberg is now the medical director with POCAAN on a CDC-funded project to provide and study HIV C/T services for high risk Blacks, Hispanics, and other people of color in King County.

Conclusions

HIV C/T for persons at risk for HIV infection, referral of those found to be infected to on-going medical care, long-term retention in care, adherence to recommended treatment, and the on-going provision of prevention assistance to people with HIV infection – these have all been highly prioritized strategies by public health in controlling HIV/AIDS. The local Ryan White Planning Council has deemed that our activities have been and are sufficient; however, threats to continued funding of our programs are real given economic downturns and potential losses to state revenues.

At the same time the CDC would like these efforts to increase to meet 2005 goals of increasing the proportion of persons with HIV infection who are aware of their infection and proportions of persons with HIV infection involved in long-term care. Further, increased attention is being placed on assuring that persons with HIV infection also have on-going attention to behaviors which might provide continuing opportunities for HIV to spread. Such efforts are especially important given evidence in recent years that over 70% of men with syphilis (which has re-emerged since 1997) tell us that they are also infected with HIV. Finally, local research on HIV C/T has identified possible ways of increasing the proportions of high risk persons who accept testing and benefit from its results.

o Contributed by Bob Wood MD

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Current HIV Counseling and Testing Sites in the Seattle Area

	Day(s)	Hours	Services	Target populations
PUBLIC HEALTH SITES:				**High risk grps.**
STD Clinic at Harborview Medical Center	Mon-Fri	8 am-4:30 pm	HIV voluntary C/T (anonymous. & confidential), STD diagnosis & treatment; partner services; HBV/HAV vaccine; studies	Persons who want screening, diagnosis & treatment of symptoms or signs of infection
Downtown PH Clinic	Mon	9 am–3 pm	Same	Central poor
Family Planning Clinics	Mon-Fri	9 am-4 pm	Same	Clinic clients
COMMUNITY SITES:				
Lifelong AIDS Alliance	Wed & Fri	9 am-noon	Same	MSM
POCAAN			HIV voluntary C/T (anonymous & confidential)	People of Color (POC)
POCAAN Office	Tues & Thurs	5:30-7 pm		
Mobile Testing:				
Neighbors dance club	1st & 3rd Sun	10 pm-2 am		
Casa Latina	Wed	8 am-12 pm		MSM of color
Rebar dance club	2nd & last Sat	10 pm-2 am		POC
Tulalip	2nd & 4th Fri	10 am-2 pm		MSM of color
Mulkleshoot	1st & 3rd Fri	10 am-2 pm		Nat. Americans
Occidental Park	Wed	1 pm-5 pm		IDU & Substance Using
Needle Exchange	Mon-Fri	1:30–4 pm	Same	IDU
Baths/Clubs for MSM				MSM
Basic Plumbing	Tues	6-9 pm	Same	MSM
Club Zodiac	Sat	10 pm-2 am	Same	MSM
Club Seattle	Fri	10 pm-2 am	Same	MSM
Seattle Gay Clinic	Tues/Thurs	6:30-9 pm	Same	MSM
Planned Parenthood				Sexually active
Int'l CHS				Asian
Lambert House	Varies			Youth
PRIVATE PROVIDERS:	Probably provide 80 to 90% of HIV testing, but most is for low-risk clients			

Adult AIDS Clinical Trials Unit Report: Metabolic syndromes in HIV infection

The introduction of protease inhibitors and antiretroviral cocktails in the last five years have resulted in a significant reduction in the morbidity and mortality associated with HIV infection. Consequently, there has been more focus on the long-term sequelae of HIV infection and treatments for HIV infection, complications including neuropathy, osteoporosis, high cholesterol, and other metabolic and endocrine disorders. These syndromes include a variety of signs and symptoms with causes and treatments that are just beginning to be understood.

Metabolic Syndromes

Lipodystrophy and lipoatrophy, fat accumulation and fat loss, are well-known HIV treatment-associated syndromes that can involve truncal obesity (a body shaped like an apple instead of a pear), a buffalo hump, breast enlargement, and fat wasting in the face, arms, legs, and gluteal regions. The metabolic syndrome, or Syndrome X, has also been recently identified in treated HIV-positive individuals. Originally described in HIV-negative individuals, patients with the metabolic syndrome have high blood pressure, high cholesterol, high blood sugar, and truncal obesity. This syndrome is thought to occur in almost 50 million Americans and is associated with heart attacks and other cardiovascular problems.

In the HIV population, metabolic changes such as these have been associated with antiretroviral therapy but it is unclear whether they are directly related to antiretroviral use or to factors associated with immune recovery, It is also unclear whether these syndromes will further impact the health of patients in the future.

Hyperinsulinemia, as a precursor condition to diabetes mellitus, has also been independently associated with coronary artery disease in HIV-negative individuals and has recently been identified in HIV-positive individuals. In fact, a greater proportion of HIV-positive individuals are being recognized to have hyperglycemia, glucose intolerance, or insulin resistance as compared with HIV-negative populations. Again, it is unclear whether these pre-diabetic states will impact the health of these patients in the future and, if so, how these conditions are best treated.

Treatment Options

Treatment of the fat redistribution syndromes in HIV patients has previously focused on rebuilding weight with trials of megestrol acetate, dronabinol, growth hormone, or anabolic steroids. However, as the number of case reports of HIV-positive individuals with premature coronary artery disease grows, it will become increasingly important for HIV research to focus on the treatment of hyperlipidemia and other metabolic syndromes associated with accelerated cardiovascular disease.

In HIV-negative patients, metformin and thiazolidinediones such as rosiglitazone have been shown to reduce insulin resistance and intraabdominal fat accumulation. In patients with Type 2 diabetes mellitus, metformin improves control of high blood sugars and is especially useful in patients with central fat accumulation who are believed to have insulin resistance based on increased hepatic glucose production.

Metformin also is able to moderately reduce high triglycerides and LDL cholesterol. In patients with metabolic syndromes but without diabetes (such as the abnormal fat distribution associated with polycystic ovary syndrome), metformin was able to improve blood glucose, insulin, insulin sensitivity, weight, waist to hip ratio, and LDL cholesterol. Initial studies in HIV-infected patients with metformin have shown similar results.

The side effects of metformin include gastrointestinal symptoms and lactic acidosis, which is of greater concern in subjects being treated with antiretroviral medications. Lactic acidosis can occur as a result of metformin accumulation, which can increase with impairment of kidney function and possibly with liver failure.

The other option for treatment of the metabolic syndrome is the class of drugs known as the thiazolidinediones, of which rosiglitazone

is a member. These drugs improve glucose control by increasing peripheral insulin sensitivity in both diabetic patients and in non-diabetic obese patients. As opposed to metformin, this class of drugs does not promote weight loss and, in fact, can reduce visceral fat while increasing subcutaneous abdominal fat. The thiazolidinediones also decrease triglyceride levels while increasing total, LDL and HDL cholesterol, and have been associated with improved blood pressure and cardiac function.

Side effects of rosiglitazone include decreases in red blood cells (anemia) and white blood cells (leukopenia). Three cases of hepatic failure have been reported in patients who were taking rosiglitazone, and frequent of monitoring of liver function tests is recommended in patients taking rosiglitazone because of the extensive publicity received by the association of hepatic failure with troglitazone, another member of the thiazolidinediones.

Seeking Patients for Treatment Study

There are currently no approved therapies to treat the fat redistribution associated with HIV infection. The UW ACTU is seeking patients with HIV who have developed fat redistribution and elevated insulin levels for a study comparing the efficacy and safety of metformin and rosiglitazone in reducing insulin levels and altering intraabdominal fat. Adult HIV-infected patients should be on a stable antiretroviral regimen with HIV-1 RNA < 10,000 copies, have self-reported changes in fat distribution, and have an insulin level > 15 IU/mL.

Study Participants Needed for Other Studies

Both HIV- and HIV+volunteers 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.

Physicians, their staff, or potential volunteers can call Jeanne Conley, Alyssa Spingola, or Lori Cray at 206-731-3184 for additional information or appointments.

o Contributed by Joanne Stekler MD

Screening tests, study drugs, 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, and coordinates care with each patient's primary care provider. Physicians, their staff, or potential enrollees can call Alyssa Spingola or Lori Cray at 731-3184 for additional information or appointments.

ACTU: Studies for Persons without HIV

Safety and drug levels of three antiretroviral drugs in HIV negative persons (ACTG 5043). Treatment with: efavirenz for 10 days; add amprenavir for 3 days; then add indinavir, nelfinavir, ritonavir, or saquinavir for 1 week. Main eligibility: on no other medications and within 20% of ideal body weight. Payment of $150 for each of 3 day-long visits, and $150 at end of study.

Carotid artery thickness as a predictor of cardiovascular risk (ACTG 5078). Ultrasound tests to measure artery thickness in HIV- and HIV+ participants. Main requirements: HIV-negative (or HIV+ on a protease inhibitor (PI) or HIV+ not on PI). $25 paid for each ultrasound test.

Interactions between antiretroviral drugs and cholesterol-lowering medications (ACTG 5108). Treatment with efavirenz or nelfinavir with simvastatin, atorvastatin, or pravastatin. Main eligibility: on no other medications and within 30% of ideal body weight. Payment of $250 for each of 2 or 3 night-long visits, and $250 at end of study.

Studies for Persons with HIV

Antiretroviral Studies

Initial treatment with a PI-sparing regimen (ACTG 5095). Subjects are randomly assigned to 3 or 4-drug PI-sparing regimens (with ZDV, 3TC plus ABC and/or EFV). Main eligibility: no prior antiretroviral treatment. Payment for some sub-studies.

Anti-HIV effects of structured treatment interruption (STI) and a vaccine (ACTG 5068). Enrollees on antiretroviral drugs have STIs, and either the ALVAC-HIV vCP1452 (canary pox) vaccine or a vaccine placebo. Main requirements: subject is on 1st antiretroviral regimen (unless switched because of side-effects), no prior use of abacavir. Payment for sub-studies (men only).

Studies of Complications of HIV

Preventing cytomegalovirus (CMV) organ damage with valganciclovir (ACTG 5030). Main requirements: having antibodies to CMV, CD4 cells <100, and a viral load >400. Payment for some clinic visits.

Carotid artery thickness as a predictor of cardiovascular risk (ACTG 5078). Ultrasound tests to measure artery thickness in HIV- and HIV+ participants. Main requirements: HIV+ on a protease inhibitor (PI) or HIV+ not on PI (or HIV-negative). $25 paid for each ultrasound test.

Treatment for increased insulin (sugar hormone) and body fat levels (ACTG 5082). 16-week treatment with metformin or rosiglitizone or both or placebo drugs. All participants get both drugs 2nd half of study. Main eligibility: HIV+, increased blood insulin, increased body fat, and viral load <10,000. CT and DEXA scans at entry, and weeks 16 & 32. $25 paid for each CT and DEXA scan.

Treatment of HIV-associated dementia (ACTG 5090). Selegiline transdermal system (STS patch) versus patch placebo. All patients receive STS patch during 2nd half of study. Main eligibility: HIV dementia, on antiretroviral drugs for at least 8 weeks. $20 - $100 paid for some tests.

Effect of anti-HIV drugs on brain function and HIV in spinal fluid (ACTU 132). Study involves one or more lumbar punctures (spinal taps). Participants will be paid $100 - $150 for each of these procedures.

Assessment of brain function in persons living with HIV (ACTU 232). Study involves Magnetic Resonance Imaging (MRI) scans at entry and week 8 (part 2). Other subjects will have MRIs and lumbar punctures. Reimbursement of $100 for MRIs and $100-$125 for lumbar punctures.

ACTU web page: http://depts.u.washington.edu/actu
ACTU e-mail: actu@u.washington.edu

Pediatric AIDS Clinical Trials Unit Report: Long term follow-up study of children infected and affected by HIV

Much progress has been made in the prevention, treatment and management of HIV infection in children over the past 15 years. Since 1986, when the first case of mother to baby HIV-1 transmission was recognized in the Pacific Northwest, treatment strategies developed to prevent mother-baby transmission have been very successful. At this time, very few newborns are infected as a result of being born to mothers with HIV infection who receive HIV-specific obstetrical care.

For children, highly aggressive antiretroviral therapies (HAART) have improved both the quality and duration of life. At this time, children who acquired HIV at the time of their birth are entering adolescence, rapidly maturing to young adulthood. While our understanding of HIV-1 viral dynamics and HIV treatments have grown rapidly, the social, emotional and psychological impact of growing up with HIV infection are just now beginning to be identified. Children grow and mature physically, emotionally and psychologically in predicable stages. HIV infection in a child clearly changes how children pass through their developmental stages. Conversely, developmental stage is also likely to affect how a child responds to antiretroviral therapies.

PACTG 219 is a long term follow-up study for the purpose of learning more about the effects of HIV disease and HIV treatments on the overall health and development of children. The study is designed to learn more HIV and HIV treatments as it relates to the growth and development of a child from infancy to young adulthood. Children born to HIV positive women are eligible for the study, whether or not they HIV infected as well as all HIV infected children. An obvious goal of the study is to learn more about late occurring side effects of anti-HIV medications children receive either to prevent or treat HIV disease.

Other equally important goals include developing a better understanding of issues relating to children living with HIV in order to devise anticipatory guidance recommendations for primary caretakers, health care providers, schools, and social service agencies. Issues such as disclosure (e.g., how and when to tell a child of their HIV diagnosis or a diagnosis of HIV in a family member; impact of disclosure on social and emotional development, school performance, friendships, self-esteem, independence), adherence to medications, risk taking behavior as adolescence emerges, are all examples of issues we need understand better in order to help HIV-affected and infected children mature to adulthood. PACTG 219 is designed to systematically obtain data in order to help address these many issues and better plan for the future needs of children.

o Contributed by Kathey Mohan ARNP

Main Requirements	Study Drug or Topic	Study Overview
Pediatric Antiretrovirals:		
HIV-infected antiretroviral naïve and experienced children aged 3 months to 21 years	**BMS-232632** (PACTG 1020A)	A phase I/II open-label, pharmacokinetic and safety study of novel protease inhibitor (BMS-232632) in combination regimens in antiretroviral therapy (ART)-naïve and experienced HIV-infected infants, children, and adolescents.
HIV-infected antiretroviral naïve and experienced children aged 3 months to 21 years	**Didanosine Emtricitabine Efavirenz** (PACTG 1021) (soon to open)	Once daily dosing regimen for children who are either absolutely naïve to antiretroviral therapy, or have received less than or equal to 56 days perinatal prophylaxis, or less than 7 days of cumulative antiretroviral treatment. Subjects must have screening plasma HIV-1 RNA levels >5000 copies/mL.

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-strata 1 open) (Children > 3 months to < 2 years of age)	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.
Perinatal (Pregnancy And Newborn) Studies:		
Pregnant HIV-infected women	**Nelfinavir, lamivudine, zidovudine vs. nevirapine, lamivudine ,zidovudine** (PACTG 1022) (soon to open)	This is study will compare a protease-sparing antiretroviral regimens with protease-inhibitor containing regimen in HIV-infected women who are beginning antiretroviral therapy during pregnancy. Women will be followed on the study for 2 years after delivery; infants for 6 months after delivery
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	**Oral zidovudine during labor** (ACTG 324)	This is a Phase I study of the safety, tolerance and pharmacokinetics of zidovudine taken by mouth during labor by HIV-1 infected women. The study is designed to find out if it is possible to achieve the same blood levels of zidovudine when it is given by mouth during as when given by IV during labor. Women are enrolled after 34 weeks gestation.
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-I in pregnant women and to prevent transmission of HIV-1 to infants.
Newborn infants born to HIV-infected pregnant women	**ALVAC vCP1452 + AIDSVAX B/B** (PACTG 326)	This Phase I study of the safety and immunogenicity of ALVAC 1452 vaccine + AIDSVAX B/B 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.
HIV-infected women who are pregnant and ≥ 14 weeks gestation or who have delivered a liveborn or stillborn infant and are within 7 days of delivery and their infants	**No treatment** **Perinatal Core Protocol** (PACTG 1025) (soon to open)	This is a prospective cohort study to obtain information about the use, effectiveness, and safety of antiretroviral medications taken during pregnancy for both mothers and their infants. Data will be collected prospectively from the medical record and blood samples will be stored. There are no treatments; procedures are blood draws and questionnaire completion.
Adolescent Studies:		
HIV-infected young persons, 12-24 years of age, and a history of at least 4 weeks of Combivr (Zidovudine and 3TC) therapy prior study enrollment	**Pharmacokinetic study of once versus twice daily doses of Zidovudine and lamivudine** (PACTG 1012) (soon to open)	This is an open-label, cross over study to compare the amount of zidovudine and lamivudine that get inside of a cell when the medicines are given once a day and twice a day. Each subject will take Combivir once a week for 7 days and then have blood levels taken; for the next week the subject will take Combivir twice a day and blood levels will be measured.
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) (completely accrued)	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.
HIV-Infected young people aged 9-18 years	**Single dose study of abacavir** (PACTG 1018)	The purpose of this study is to determine if puberty has any effect on the amount of abacavir in the blood of adolescents as compared to adults. This information is necessary to find out the right dose of medication for teenagers.

Opportunistic Infections:		
HIV infected children >1 yr ≤8 years of age with symptomatic HIV disease (stage B1, A2, N2, or B2) who are have not had varicella or been immunized	**Varivax** (PACTG 265)	This is a Phase I/II study to evaluate how safe and immunogenicity of varicella vaccine when given to HIV-infected children with moderate immune suppression or HIV symptoms.
Perinatally HIV-infected children aged 2-19 years who have been receiving HAART for greater than 6 months with viral load <30,000	**Pneumococcal conjugate vaccine** (PACTG 1024) (soon to open)	This study will evaluate the immune response to the newly licensed pneumococcal conjugate vaccine as well as routine childhood immunizations in HIV-infected children treated with HAART.
Natural History Studies:		
HIV-infected children 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 children age 1 mos to 13 years Anti-retroviral-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) (soon to open)	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 2-21 years of age on HAART therapy with viral loads less than 50 copies per ml at study entry and less than 400 copies per ml for more than 1 year	**No medications-treatment interruption protocol** (PACTG 1015) (soon to open)	The purpose of this study is to find out if brief intervals of stopping treatment results in a stronger immune response to HIV in the child and if this stronger immune response will help the child maintain a low viral load without antirretroviral medications. The study will also evaluate the effect of intermittent intervals of stopping treatment on the development of drug resistant virus.
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 219C)	Open to all infants born to HIV-infected women after Jan.2000 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.

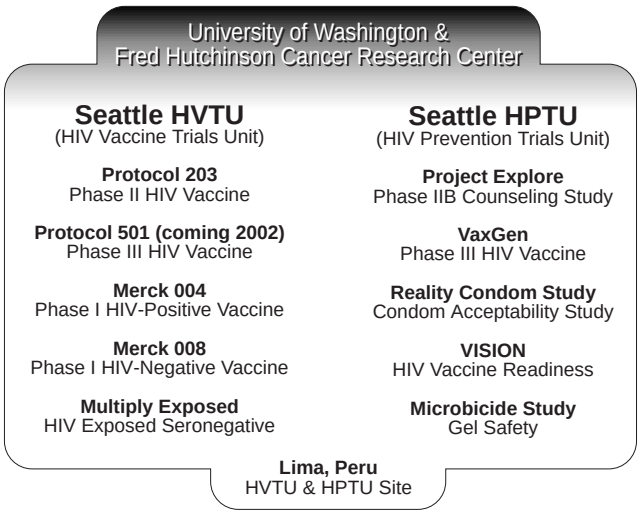
HIV Prevention & Vaccine Trials Unit Report: Current challenges in HIV vaccine development

After a palpable lull in HIV vaccine development in the late 1990s, we now have an abundance of new constructs becoming available for clinical trials. The next few years we anticipate five to ten Phase I trials will be conducted annually of investigational HIV vaccines at domestic and international sites. The FHCRC/UW HIV Vaccine Trials Unit (HVTU) will participate in most of these. A partial listing of scheduled HVTN clinical trials for 2002 is listed in Table 1.

The current challenges are to:

- Continue investigation into new and varied vaccine approaches
- Cultivate vaccines under development and guide them through human trials efficiently
- Improve assessment of immunogenicity
- Identify correlates of immunity, and to recruit a steady supply of volunteers

Optimism has been both buoyed and depressed by news of the survival advantage of certain vaccinated macaques after pathogenic SHIV challenge—on one hand, the monkeys have been surviving; on the other hand, the monkeys were not fully protected against infection.



Vaccine scientists continue to struggle with the question of, what will be the criteria for a "good enough" vaccine, in the face of urgent human need? Protection, attenuation, decreased transmission? And what is the best that we can hope to accomplish? Striving for these answers may lead to a paradigm shift in HIV vaccine research.

Almost all of our studies involve healthy, HIV negative volunteers. Our volunteers are motivated to take part because they hope to make an important difference in the fight against HIV. For each study including 12 volunteers from Seattle, we typically need to screen around 30 people in the clinic and enroll the study over two to three months.

Currently, our unit is enrolling volunteers for Protocol 039, which involves a high dose recombinant canarypox vaccine, to determine the immunogenicity range of the ALVAC-HIV vaccine, which has been an anchor vaccine in our investigational regimens for several years.

We are screening volunteers for Protocol 041, which involves a GlaxoSmithKline investigational vaccine made of a *Nef-Tat* fusion protein in combination with *gp*120 subunit and an adjuvant.

We are also a site for a Merck and Co., Inc. vaccine trial of an HIV-1 *gag* DNA vaccine boosted by an adenovirus-5 *gag* vaccine. Our study for HIV positive volunteers using the same HIV-1 *gag* DNA vaccine has been fully enrolled with 12 volunteers.

o Contributed by Marnie Elizaga MD

Table 1. HIV-1 vaccines in the HIV Vaccine Trials Network (HVTN) clinical trials pipeline for 2002

Vaccine	Inventor/Developer	Clinical Trial Programs
Venezuelan Equine Encephalitis replicon, Clade C gag	Alphavax	US and South African HVTN sites
Modified Vaccinia Ankara-CCR5 Isolate	Therion, John Sullivan	HVTN
Nef-Tat fusion protein with gp120 in MPL-like adjuvant	GlaxoSmithKline	HVTN
Lipopeptides with ALVAC-HIV (canarypox) boost	ANRS France, Aventis Pasteur	ANRS France, HVTN
Codon optimized HIV-1 DNA	Harriett Robinson, Emory University	HVTN
Modified Vaccinia Ankara	Bernard Moss	HVTN
Multiepitope peptides	Epimmune	HVTN
DNA vaccine with IL-12/Fc	Dale and Betty Bumpers Vaccine Research Center (VRC)	VRC, HVTN

Table 2. Active HVTN clinical trials

Organization	Clinical Trials in Progress	Comments
HIV Vaccine Trials Network (HVTN)	Phase I high dose ALVAC 1452 canarypox (Clade B) Phase II ALVAC vCP1452 + AIDSVAX B/B prime-boost (Clade B) Phase I ALVAC vCP1452 + MN rgp120 prime-boost, international sites (Clade B)	www.hvtn.org
International AIDS Vaccine Initiative	Oxford, UK and Nairobi, Kenya Phase I trial of HIVA DNA vaccine and HIVA MVA vaccine regimen (Clade A)	Supports five partnerships to develop clade A, C, and D vaccines www.iavi.org
Merck & Co., Inc. Merck Research Laboratories	Phase I HIV-1 DNA gag + adenovirus HIV-1 gag boost (Clade B)	www.merck.com
VaxGen	Phase III rgp120 cocktails AIDSVAX B/B; US, Canada, the Netherlands (Clade B) AIDSVAX B/E; Thailand C (Clade B, Clade E)	www.vaxgen.com
Dale and Betty Bumpers Vaccine Research Center (NIAID)	Phase I DNA vaccine with IL-2/Fc	www.niaid.nih.gov/vrc/
U.S. Military HIV Research Program; Armed Forces Research Institute of Medical Sciences (AFRIMS); Thailand HIV/AIDS Vaccine Evaluation Group	Phase I/II ALVAC vCP1521 (Clade E) with VaxGen B/E	Supports surveillance research, the Rakai project, vaccine development for Clades A, C and E www.hivresearch.org