

hiv/aids



1st
Half '03

EPIDEMIOLOGY REPORT

WASHINGTON STATE • SEATTLE & KING COUNTY

Sharon Hopkins has left HIV/AIDS Epidemiology and is now the Public Health — Seattle & King County Veterinarian

The following tribute was written by Dr. Jeff Duchin, Sharon's former supervisor, acknowledging Sharon's vital contributions to the health department, including being the founder and former editor of the HIV/AIDS Epidemiology Report:

Dr. Sharon Hopkins has been an epidemiologist with our HIV surveillance program since 1986 during which time she distinguished herself both locally and nationally for the high quality and innovation of her HIV/AIDS surveillance work. The CDC considers HIV/AIDS surveillance to be the most complete and highly functioning national surveillance system ever implemented and thanks to Sharon's leadership our Public Health HIV/AIDS surveillance program has consistently ranked as one of the top programs in the country, if not the best. Sharon was the lead epidemiologist directing the HIV/AIDS case surveillance program and Principal Investigator of the Population-based HIV Incidence Surveillance and Antiretroviral Drug Resistance Testing Surveillance pilot projects in our HIV AIDS program.

Since 1986, Sharon has done an outstanding job developing and directing numerous surveillance projects related to the epidemiology of HIV/AIDS and related opportunistic infections. She was lead innovator of the successful non-name coded HIV-surveillance system that was subsequently endorsed by CDC and adopted by other states, and for this and other accomplishments she twice received the Director's Award for Innovation in Public Health. Sharon has an outstanding record of grant acquisition and has been lead investigator on multiple grant-funded surveillance projects. Sharon has numerous academic publications in both the veterinary and public health arenas and was the long-standing editor of the *HIV/AIDS Epidemiology Report for Seattle-King County and Washington State Public Health*.

Sharon's skills and leadership will be missed in the Prevention Division. Fortunately for Public Health — Seattle & King County, Sharon brings her intelligence, experience and creativity to bear in her new position as Public Health Veterinarian. I feel fortunate that Sharon will continue to be an esteemed colleague and I know she will continue to be a tremendous asset to our Department.

With much gratitude,

Jeffrey S. Duchin, M.D. Chief, Communicable Disease Control, Epidemiology and Immunization Section
Public Health — Seattle & King County and Assistant Professor in Medicine, Division of Allergy and Infectious Diseases, University of Washington

Suggested Citation: HIV/AIDS Epidemiology Section, Prevention Division, Public Health — Seattle & King County and Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. Washington State/Seattle King County HIV/AIDS Epidemiology Report. First half 2003.

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

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Credits

This is the sixty-second edition of the HIV/AIDS epidemiology report. This report in general includes data through the end of June 2003. The report is 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. Public Health – Seattle & King County staff include Beth Sohlberg – who left our group in March and is now working in MIS at the County, Linda Oakley, Tom Davis, Amy Bauer, Laura Arnold, and Peter de Turk. Washington State Infectious Disease and Reproductive Health (IDRH) Assessment Unit staff include Mark Charonis, Kealy McCleery, Sandy Hitchcock, Anna Meddaugh, and Mary Roberts.



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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 those patients who seek HIV care or are tested on or after September 1, 1999.

Local health department officials 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/ul 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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Alternative Formats
Provided Upon
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Table 1. Surveillance of reported AIDS¹ cases, deaths, and persons living with AIDS - King County, other WA counties, all WA state, U.S.

	Adult	Pediatric²	Total
King County			
New cases 1st Half 2003	116	0	116
Cases Reported Year to Date	116	0	116
Cumulative Cases	6,779	14	6,793
Cumulative Deaths	3,825	8	3,833
Persons Living ³	2,954	6	2,960
Other Counties			
New cases 1st Half 2003	92	0	92
Cases Reported Year to Date	92	0	92
Cumulative Cases	3,779	18	3,797
Cumulative Deaths	1,957	11	1,968
Persons Living ³	1,822	7	1,829
WA State			
New cases 1st Half 2003	208	0	208
Cases Reported Year to Date	208	0	208
Cumulative Cases	10,558	32	10,590
Cumulative Deaths	5,782	19	5,801
Persons Living ³	4,776	13	4,789
U.S.			
Cases reported as of 12/31/2002 ⁴			
Cumulative Cases	877,275	9,300	886,575
Cumulative Deaths	496,262	5,407	501,669
Persons Living ³	381,013	3,893	384,906

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 AIDS¹ case counts and deaths by resident county and AIDSNet region at diagnosis - reported as of 06/30/03 - WA State

	Total		Deaths		Presumed living	
	Number	(%) ²	Number	(%) ³	Number	(%) ³
Region 1						
Adams	5	(<0.1)	1	(20)	4	(80)
Asotin	14	(0.1)	6	(43)	8	(57)
Columbia	3	(<0.1)	3	(100)	0	(0)
Ferry	7	(0.1)	6	(86)	1	(14)
Garfield	0	(0.0)	0	(0)	0	(0)
Lincoln	4	(<0.1)	2	(50)	2	(50)
Okanogan	21	(0.2)	8	(38)	13	(62)
Pend Orille	8	(0.1)	5	(63)	3	(38)
Spokane	439	(4.1)	241	(55)	198	(45)
Stevens	21	(0.2)	7	(33)	14	(67)
Walla Walla	57	(0.5)	29	(51)	28	(49)
Whitman	10	(0.1)	4	(40)	6	(60)
Subtotal	589	(5.6)	312	(53)	277	(47)
Region 2						
Benton	77	(0.7)	32	(42)	45	(58)
Chelan	33	(0.3)	20	(61)	13	(39)
Douglas	2	(<0.1)	2	(100)	0	(0)
Franklin	36	(0.3)	12	(33)	24	(67)
Grant	28	(0.3)	19	(68)	9	(32)
Kittitas	14	(0.1)	9	(64)	5	(36)
Klickitat	11	(0.1)	8	(73)	3	(27)
Yakima	146	(1.4)	71	(49)	75	(51)
Subtotal	347	(3.3)	173	(50)	174	(50)
Region 3						
Island	57	(0.5)	34	(60)	23	(40)
San Juan	18	(0.2)	10	(56)	8	(44)
Skagit	49	(0.5)	27	(55)	22	(45)
Snohomish	562	(5.3)	288	(51)	274	(49)
Whatcom	149	(1.4)	74	(50)	75	(50)
Subtotal	835	(7.9)	433	(52)	402	(48)
Region 4						
King	6,793	(64.1)	3,833	(56)	2,960	(44)
Region 5						
Kitsap	188	(1.8)	104	(55)	84	(45)
Pierce	953	(9.0)	507	(53)	446	(47)
Subtotal	1,141	(10.8)	611	(54)	530	(46)
Region 6						
Clallam	49	(0.5)	25	(51)	24	(49)
Clark	389	(3.7)	195	(50)	194	(50)
Cowlitz	87	(0.8)	48	(55)	39	(45)
Grays Harbor	46	(0.4)	24	(52)	22	(48)
Jefferson	24	(0.2)	14	(58)	10	(42)
Lewis	39	(0.4)	26	(67)	13	(33)
Mason	67	(0.6)	18	(27)	49	(73)
Pacific	17	(0.2)	11	(65)	6	(35)
Skamania	7	(0.1)	5	(71)	2	(29)
Thurston	158	(1.5)	73	(46)	85	(54)
Wahkiakum	2	(0.0)	0	(0)	2	(100)
Subtotal	885	(8.4)	439	(50)	446	(50)
Total	10,590	(100.0)	5,801	(55)	4,789	(45)

¹ AIDS by 1993 surveillance case definition

² Percent of Washington State cases (column %)

³ Percent of county cases (row %)

Table 3 Demographic characteristics of cumulative reported AIDS¹ cases - King County, other WA counties, all WA State, U.S.

Cases reported as of:	King County 6/30/2003		Other counties 6/30/2003		All Washington 6/30/2003		Estimated U.S. 12/31/2002 ²	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Sex								
Male	6,418	(94)	3,305	(87)	9,723	(92)	722,773	(82)
Female	375	(6)	492	(13)	867	(8)	163,800	(18)
Unknown Sex	0	(0)	0	(0)	0	(0)	2	(<1)
Age Group								
Under 13	14	(<1)	18	(<1)	32	(<1)	9,300	(1)
13 - 19	12	(<1)	27	(1)	39	(<1)	4,857	(1)
20 - 29	1,108	(16)	713	(19)	1,821	(17)	142,794	(16)
30 - 39	3,289	(48)	1,650	(43)	4,939	(47)	389,319	(44)
40 - 49	1,758	(26)	949	(25)	2,707	(26)	238,736	(27)
50 - 59	492	(7)	304	(8)	796	(8)	74,233	(8)
60 and over	120	(2)	136	(4)	256	(2)	27,336	(3)
Race / Ethnicity								
White ³	5,337	(79)	2,982	(79)	8,319	(79)	364,458	(42)
Black ³	780	(11)	346	(9)	1,126	(11)	347,491	(38)
Hispanic (All Races)	446	(7)	300	(8)	746	(7)	163,940	(18)
Asian or Pacific Islander ^{3,4}	0	(0)	46	(1)	46	(<1)	6,924	(1)
Asian ³	99	(1)	12	(<1)	111	(1)	N/A	N/A
Hawaiian or Pacific Islander ^{3,4}	14	(<1)	5	(<1)	19	(<1)	N/A	N/A
Native American or Alaskan Native ³	104	(2)	90	(2)	194	(2)	2,875	(<1)
Multiple Race ^{3,4}	13	(<1)	2	(<1)	15	(<1)	N/A	N/A
Unknown Race ³	0	(0)	14	(<1)	14	(<1)	887	(<1)
HIV Exposure Category								
Male-male sex	5,047	(74)	2,083	(55)	7,130	(67)	420,790	(45)
Injection drug use (IDU)	393	(6)	564	(15)	957	(9)	240,268	(25)
IDU & male-male sex	697	(10)	360	(9)	1,057	(10)	59,719	(6)
Heterosexual contact	292	(4)	369	(10)	661	(6)	135,628	(11)
Hemophilia	31	(<1)	58	(2)	89	(1)	5,607	(1)
Transfusion	54	(1)	68	(2)	122	(1)	9,537	(1)
Mother at risk/has HIV	13	(<1)	15	(<1)	28	(<1)	8,629	(1)
Undetermined/other ⁵	266	(4)	280	(7)	546	(5)	6,397	(10)
Total Cases	6,793	(100)	3,797	(100)	10,590	(100)	886,575	(100)

¹ AIDS by 1993 surveillance case definition

² Most recent date that complete U.S. statistics are available. Cases with undetermined HIV exposure have been redistributed.

³ And not Hispanic. All categories are mutually exclusive

⁴ Revised federal Office of Management and Budget classifications for race split the old category of Asian/Pacific Islander into two (Asian versus Hawaiian or Pacific Islander), and add Multiple Race. Some previously collected data could not be split and are shown in the old category.

⁵ Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up), patients still under investigation, patients whose only risk was heterosexual contact 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 4 Cumulative AIDS¹ cases by gender, race/ethnicity, and HIV exposure category Reported as of 06/30/03 - King County

Table 4A King Co.

Exposure category	White ² Number (%)	Black ² Number (%)	All Hispanic Number (%)	Asian or PI ^{2,3} Number (%)	Am Indian or AN ^{2, 4} Number (%)	Total ⁵ Number (%)
MALE						
Male-male sex	4,240 (82)	366 (56)	301 (71)	79 (77)	52 (61)	5,047 (79)
Injection drug use (IDU)	154 (3)	86 (13)	36 (9)	3 (3)	8 (9)	288 (4)
IDU & male-male sex	563 (11)	69 (11)	37 (9)	4 (4)	21 (25)	697 (11)
Heterosexual contact	38 (1)	52 (8)	14 (3)	2 (2)	2 (2)	108 (2)
Hemophilia	29 (1)	1 (<1)	0 (0)	1 (1)	0 (0)	31 (<1)
Transfusion	27 (1)	2 (<1)	3 (1)	2 (2)	0 (0)	34 (1)
Mother at risk/has HIV	2 (<1)	3 (<1)	0 (0)	0 (0)	0 (0)	5 (<1)
Undetermined/other	93 (2)	71 (11)	30 (7)	12 (12)	2 (2)	208 (3)
MALE SUBTOTAL	5,146 (80)	650 (10)	421 (7)	103 (2)	85 (1)	6,418 (100)
FEMALE						
Injection drug use (IDU)	52 (27)	38 (29)	2 (8)	0 (0)	13 (68)	105 (28)
Heterosexual contact	100 (52)	60 (46)	16 (64)	3 (30)	5 (26)	184 (49)
Hemophilia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Transfusion	13 (7)	5 (4)	1 (4)	1 (10)	0 (0)	20 (5)
Mother at risk/has HIV	3 (2)	3 (2)	2 (8)	0 (0)	0 (0)	8 (2)
Undetermined/other	23 (12)	24 (18)	4 (16)	6 (60)	1 (5)	58 (15)
FEMALE SUBTOTAL	191 (51)	130 (35)	25 (7)	10 (3)	19 (5)	375 (100)
TOTAL	5,337 (79)	780 (11)	446 (7)	113 (2)	104 (2)	6,793 (100)

Table 4B Washington State

Exposure category	White ² Number (%)	Black ² Number (%)	All Hispanic Number (%)	Asian or PI ^{2,3} Number (%)	Am Indian or AN ^{2, 4} Number (%)	Total ⁵ Number (%)
MALE						
Male-male sex	6,015 (77)	483 (53)	418 (62)	111 (74)	83 (54)	7,130 (73)
Injection drug use (IDU)	442 (6)	145 (16)	81 (12)	6 (4)	24 (15)	699 (7)
IDU & male-male sex	862 (11)	92 (10)	59 (9)	5 (3)	36 (23)	1,057 (11)
Heterosexual contact	108 (1)	80 (9)	37 (6)	7 (5)	6 (4)	239 (2)
Hemophilia	82 (1)	1 (<1)	1 (<1)	2 (1)	0 (0)	86 (1)
Transfusion	62 (1)	3 (<1)	7 (1)	2 (1)	0 (0)	74 (1)
Mother at risk/has HIV	5 (<1)	5 (1)	0 (0)	0 (0)	1 (1)	11 (<1)
Undetermined/other	240 (3)	98 (11)	66 (10)	17 (11)	5 (3)	427 (4)
MALE SUBTOTAL	7,816 (80)	907 (9)	669 (7)	150 (2)	155 (2)	9,723 (100)
FEMALE						
Injection drug use (IDU)	152 (30)	70 (32)	10 (13)	2 (8)	24 (62)	258 (30)
Heterosexual contact	256 (51)	98 (45)	49 (64)	8 (31)	10 (26)	422 (49)
Hemophilia	3 (1)	0 (0)	0 (0)	0 (0)	0 (0)	3 (<1)
Transfusion	32 (6)	8 (4)	3 (4)	3 (12)	2 (5)	48 (6)
Mother at risk/has HIV	7 (1)	5 (2)	4 (5)	1 (4)	0 (0)	17 (2)
Undetermined / other	53 (11)	38 (17)	11 (14)	12 (46)	3 (8)	119 (14)
FEMALE SUBTOTAL	503 (58)	219 (25)	77 (9)	26 (3)	39 (4)	867 (100)
TOTAL	8,319 (79)	1,126 (11)	746 (7)	176 (2)	194 (2)	10,590 (100)

¹AIDS by 1993 surveillance case definition

²And not Hispanic

³Asian or Pacific Islander; Due to small cell sizes we have combined Asian and Hawaiian or Pacific Islander data

⁴American Indian or Alaska Native

⁵Totals include 13 King Co. and 15 Washington State persons classified with multiple race, and 14 Washington cases of unknown race

Table 5 Cumulative AIDS¹ cases by gender and age at diagnosis
Reported as of 06/30/03 - King County and WA State

Age	King County				Washington State			
	Male		Female		Male		Female	
	Number	%	Number	(%)	Number	(%)	Number	(%)
Under 5	4	(<1)	5	(1)	10	(<1)	13	(1)
5-12	2	(<1)	3	(1)	5	(<1)	4	(<1)
13-19	8	(<1)	4	(1)	28	(<1)	11	(1)
20-29	1,010	(16)	98	(26)	1,613	(17)	208	(24)
30-39	3,127	(49)	162	(43)	4,588	(47)	351	(40)
40-49	1,690	(26)	68	(18)	2,522	(26)	185	(21)
50-59	468	(7)	24	(6)	730	(8)	66	(8)
60 and over	109	(2)	11	(3)	227	(2)	29	(3)
Total	6,418	(100)	375	(100)	9,723	(100)	867	(100)

¹AIDS by 1993 surveillance case definition

Table 6 AIDS¹ cases, deaths, and case fatality rates by year
Reported as of 06/30/03 - King County and WA State

Year of Diagnosis	Total Cases	King County			Washington State		
		(% 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)	58	(97)	79	77	(97)
1985	105	(80)	101	(96)	132	128	(97)
1986	187	(75)	180	(96)	250	243	(97)
1987	274	(74)	262	(96)	370	354	(96)
1988	353	(71)	327	(93)	497	462	(93)
1989	461	(73)	420	(91)	629	570	(91)
1990	520	(69)	459	(88)	759	671	(88)
1991	563	(66)	478	(85)	856	729	(85)
1992	620	(67)	454	(73)	923	690	(75)
1993	646	(65)	405	(63)	997	641	(64)
1994	544	(61)	268	(49)	893	458	(51)
1995	506	(64)	155	(31)	790	259	(33)
1996	418	(59)	77	(18)	713	151	(21)
1997	299	(56)	47	(16)	532	85	(16)
1998	253	(61)	35	(14)	413	72	(17)
1999	198	(53)	24	(12)	373	60	(16)
2000	264	(59)	42	(16)	450	65	(14)
2001 ⁴	224	(55)	17	(8)	406	40	(10)
2002 ⁴	232	(57)	9	(4)	405	20	(5)
2003 ⁴	54	(53)	3	(6)	102	5	(5)
Total	6,793	(64)	3,833	(56)	10,590	5,801	(55)

¹AIDS by 1993 surveillance case definition

²Number of deaths among persons diagnosed each year

³Percent of cases diagnosed in each year whose deaths have been reported to date

⁴Reporting for recent years is incomplete

Table 7 AIDS¹ cases by HIV exposure category and year of diagnosis
Reported as of 06/30/03 - King County, other WA counties, all WA State

King County										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male-male sex	132	(67)	166	(63)	145	(65)	134	(58)	37	(69)
Injection drug use (IDU)	15	(8)	26	(10)	15	(7)	21	(9)	1	(2)
IDU & male-male sex	20	(10)	23	(9)	17	(8)	25	(11)	2	(4)
Heterosexual contact	13	(7)	31	(12)	29	(13)	29	(13)	6	(11)
Hemophilia	1	(1)	1	(<1)	0	(0)	0	(0)	0	(0)
Transfusion	1	(1)	1	(<1)	0	(0)	1	(<1)	0	(0)
Mother at risk/has HIV	0	(0)	1	(<1)	0	(0)	0	(0)	0	(0)
Undetermined/other ⁴	16	(8)	15	(6)	18	(8)	22	(9)	8	(15)
Total King County	198	(100)	264	(100)	224	(100)	232	(100)	54	(100)
Other Counties										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male-male sex	75	(43)	91	(49)	90	(49)	82	(47)	19	(40)
Injection drug use (IDU)	33	(19)	32	(17)	29	(16)	23	(13)	8	(17)
IDU & male-male sex	15	(9)	10	(5)	19	(10)	11	(6)	3	(6)
Heterosexual contact	24	(14)	20	(11)	22	(12)	33	(19)	7	(15)
Hemophilia	1	(1)	2	(1)	1	(1)	0	(0)	0	(0)
Transfusion	1	(1)	2	(1)	0	(0)	0	(0)	0	(0)
Mother at risk/has HIV	0	(0)	1	(1)	0	(0)	0	(0)	0	(0)
Undetermined/other ⁴	26	(15)	28	(15)	21	(12)	24	(14)	11	(23)
Total Other Counties	175	(100)	186	(100)	182	(100)	173	(100)	48	(100)
Washington State										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male-male sex	207	(55)	257	(57)	235	(58)	216	(53)	56	(55)
Injection drug use (IDU)	48	(13)	58	(13)	44	(11)	44	(11)	9	(9)
IDU & male-male sex	35	(9)	33	(7)	36	(9)	36	(9)	5	(5)
Heterosexual contact	37	(10)	51	(11)	51	(13)	62	(15)	13	(13)
Hemophilia	2	(1)	3	(1)	1	(<1)	0	(0)	0	(0)
Transfusion	2	(1)	3	(1)	0	(0)	1	(<1)	0	(0)
Mother at risk/has HIV	0	(0)	2	(<1)	0	(0)	0	(0)	0	(0)
Undetermined/other ⁴	42	(11)	43	(10)	39	(10)	46	(11)	19	(19)
Total Washington State	373	(100)	450	(100)	406	(100)	405	(100)	102	(100)
Total										

¹ AIDS by 1993 surveillance case definition

² Reporting for recent years is incomplete

³ Year to date (cases reported as of 6/30/03)

⁴ Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up) patients still under investigation, patients whose only risk was heterosexual contact 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 8 AIDS¹ cases by age, gender, and year of diagnosis Reported as of 06/30/03 - King County, other WA counties, all WA State

King County										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Adult Male Cases	182	(92)	229	(87)	198	(88)	199	(86)	51	(94)
Adult Female Cases	16	(8)	34	(13)	26	(12)	33	(14)	3	(6)
Pediatric Cases	0	(0)	1	(<1)	0	(0)	0	(0)	0	(0)
Total	198	(100)	264	(100)	224	(100)	232	(100)	54	(100)

Other Counties										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Adult Male Cases	141	(81)	155	(83)	160	(88)	139	(80)	36	(75)
Adult Female Cases	34	(19)	30	(16)	22	(12)	34	(20)	12	(25)
Pediatric Cases	0	(0)	1	(1)	0	(0)	0	(0)	0	(0)
Total	175	(100)	186	(100)	182	(100)	173	(100)	48	(100)

Washington State										
	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Adult Male Cases	323	(87)	384	(85)	358	(88)	338	(83)	87	(85)
Adult Female Cases	50	(13)	64	(14)	48	(12)	67	(17)	15	(15)
Pediatric Cases	0	(0)	2	(<1)	0	(0)	0	(0)	0	(0)
Total	373	(100)	450	(100)	406	(100)	405	(100)	102	(100)

¹ AIDS by 1993 surveillance case definition

² Reporting for recent years is incomplete

³ Year to date (cases reported as of 06/30/03)

Table 9 Deaths of reported AIDS¹ cases by year of death Reported as of 06/30/03 - King County, other WA counties, all WA State

	1999		2000		2001 ²		2002 ²		2003 ^{2,3}	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
King County	70	(50)	87	(56)	74	(58)	64	(54)	27	(68)
Other Counties	70	(50)	67	(44)	54	(42)	55	(46)	13	(33)
Washington State	140	(100)	154	(100)	128	(100)	119	(100)	40	(100)

¹ AIDS by 1993 surveillance case definition

² Reporting for recent years is incomplete

³ Year to date (cases reported as of 06/30/03)

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

	King County 6/30/2003 Number (%)	Other counties 6/30/2003 Number (%)	All Washington1 6/30/2003 Number (%)	Total U.S.² 12/31/2002 Number (%)
Sex				
Male	2,095 (89)	906 (77)	3,001 (85)	140,193 (71)
Female	252 (11)	277 (23)	529 (15)	59,558 (29)
Unknown	0 (0)	0 (0)	0 (0)	8 (<1)
Age Group				
Under 13	17 (1)	19 (2)	36 (1)	4,503 (2)
13 - 19	51 (2)	41 (3)	92 (3)	7,561 (4)
20 - 29	785 (33)	406 (34)	1,191 (34)	60,371 (30)
30 - 39	1,014 (43)	427 (36)	1,441 (41)	76,070 (38)
40 - 49	381 (16)	233 (20)	614 (17)	37,666 (19)
50 - 59	90 (4)	50 (4)	140 (4)	10,290 (5)
60 and over	9 (<1)	7 (1)	16 (<1)	3,298 (2)
Race / Ethnicity				
White non Hispanic	1,725 (73)	879 (74)	2,604 (74)	73,684 (37)
Black non-Hispanic	355 (15)	137 (12)	492 (14)	104,285 (52)
Hispanic (All Races)	166 (7)	104 (9)	270 (8)	18,761 (9)
Asian or Pacific Islander ³	0 (0)	8 (1)	8 (<1)	808 (<1)
Asian ³	54 (2)	15 (1)	69 (2)	0 (0)
Hawaiian or Pacific Islander ³	2 (<1)	3 (<1)	5 (<1)	0 (0)
Native American or Alaska Native	30 (1)	22 (2)	52 (1)	1,149 (1)
Multiple Race ³	5 (<1)	0 (0)	5 (<1)	0 (0)
Unknown Race	10 (<1)	15 (1)	25 (1)	1,072 (1)
HIV Exposure Category				
Male-male sex	1,652 (70)	538 (45)	2,190 (62)	64,331 (30)
Injection drug use (IDU)	150 (6)	214 (18)	364 (10)	27,436 (14)
IDU & male-male sex	199 (8)	103 (9)	302 (9)	7,693 (4)
Heterosexual contact	159 (7)	183 (15)	342 (10)	34,825 (16)
Hemophilia	9 (<1)	5 (<1)	14 (<1)	626 (<1)
Transfusion	8 (<1)	5 (<1)	13 (<1)	1,010 (1)
Mother at risk/has HIV	15 (1)	18 (2)	33 (1)	3,667 (2)
Undetermined/other ⁴	155 (7)	117 (10)	272 (8)	60,171 (34)
Total Cases	2,347 (100)	1,183 (100)	3,530 (100)	199,759 (100)

¹ HIV infection reports received as of 6/30/03. HIV reporting was implemented in 9/99; reporting of cases diagnosed before 9/99 is incomplete at this time

² Includes HIV case reports from 36 states and territories with confidential named HIV reporting; excludes WA State at this time. Most recent date that complete U.S. statistics are available

³ Revised federal Office of Management and Budget classifications for race include splitting the old category of Asian/Pacific Islander into two (Asian vs. Hawaiian /Pacific Islander), and adding Multiple Race. Some of our previously collected data could not be split and are shown in the old category

⁴ Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up), patients still under investigation, patients whose only risk was heterosexual contact where the risk of the sexual partner was undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined

Annual Review of the Epidemiology of HIV and AIDS in Seattle & King County

AIDS case data have been collected nationally since 1981 but describe only persons with advanced HIV disease. Reporting of all stages of HIV infection was implemented in Washington in September 1999. The analyses below are for all King County residents reported with HIV or AIDS through December 31, 2002.

KC AIDS Rates Compared with State and National Data

The latest published Centers for Disease Control and Prevention AIDS data¹ show that in 2001, the Seattle metropolitan statistical area (MSA) ranked 24th in the cumulative number and 40th in annual rate of reported AIDS cases nationally. This was among 104 metropolitan areas of one-half million population or higher. The Seattle MSA (which includes King, Snohomish and Island counties) AIDS rate during 2000 was 14.3 cases per 100,000 population.

The five highest rates in the country were in New York City (65.9), Miami FL (53.8), Baltimore MD (50.0), Jersey City NJ (42.1), and Fort Lauderdale FL (41.3). In comparison to

the Seattle MSA rate of 14.3, the Tacoma MSA had a rate of 9.3, while the Portland (Oregon) MSA rate was 11.2 per 100,000.

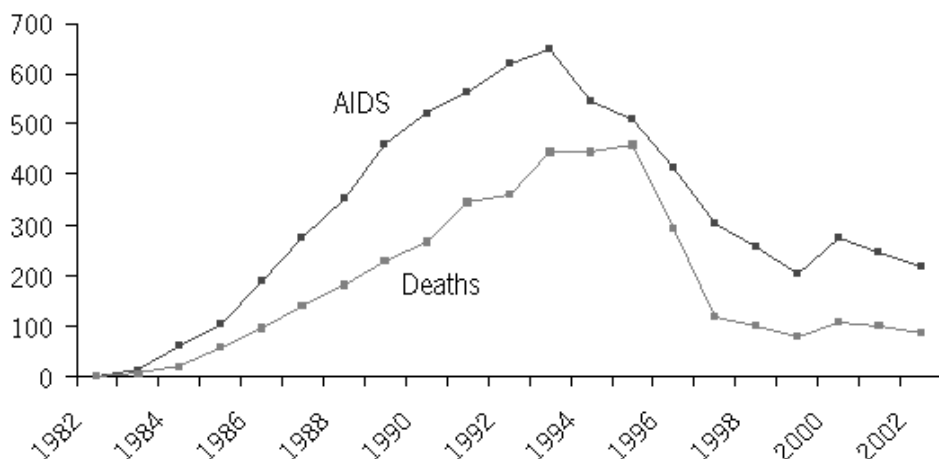
The Seattle MSA cases make up a decreasing proportion of total U.S. cases as the epidemic becomes more rural. Seattle accounted for 1.01% of the U.S. total at the end of 1992, 0.95% at the end of 1996, and 0.81% at the end of 2001.

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 Seattle.

Diagnoses of AIDS and Deaths (see figure below)

Between 1982 and December 31, 2002, a total of 6,679 residents have been diagnosed and reported with AIDS and 3,821 (57%) have died. Following the pattern seen nationally, AIDS cases peaked in 1993, declined through 1997, and have been stable at about 250 cases each year 1998 to 2002. The number of HIV and AIDS deaths peaked 1993 to 1995 at over 400 deaths per year, but declined to about 100 deaths annually 1998 through 2002.

New King County AIDS cases and deaths by year, 1982 - 2002
Adjusted for delays in reporting



The dramatically lower death numbers and delays in progression to AIDS beginning about 1995 are primarily due to widespread introduction of effective antiretroviral treatments. In addition, effective prophylaxis to prevent opportunistic infections (such as *Pneumocystis carinii* pneumonia), better monitoring of HIV progression (such as by assays of HIV viral load), and prevention efforts in reducing HIV transmission rates have contributed to decreased numbers of HIV and AIDS diagnoses.

After steep declines, the death and AIDS numbers have been level since 1998. There are a variety of reasons the numbers have leveled. Some persons are not receiving effective treatments – because they learn of 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 with 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 of more frequently of conditions unrelated to their HIV infection. For example, chronic hepatitis, substance abuse, and mental illness contribute significant morbidity and mortality among this population.

HIV/AIDS was the leading cause of death among 25-44 year old males in King County during the years 1989 to 1996² but dropped to the 6th leading cause of deaths in 2001.

While both AIDS and deaths numbers have decreased, more King County residents than ever are living with AIDS. There are about 250 new AIDS diagnoses each year, relative to about 100 new deaths.

Number of Persons Infected With HIV

Because effective treatments have dramatically slowed progression of HIV disease and reduced the numbers of deaths, AIDS numbers no longer accurately portray natural changes in the epidemic. To assess the ongoing changes in the overall epidemic we analyzed all reports of HIV infection and AIDS. Public health departments in Washington began collecting case reports of HIV infection in September 1999.

As of December 2001, Washington Department of Health estimated that as many as 13,000 Washington residents are infected with HIV, including persons with AIDS³. Since 64.4% of reported HIV and AIDS cases statewide are residents of King County, we estimate 8,400 King County residents currently living with HIV infection or AIDS.

The 8,400 HIV infected King County residents include about 3,000 living with AIDS and 5,400 with HIV but not AIDS.

These include 2,852 AIDS cases and 2,111 HIV cases reported to Public Health, an estimated 1,200 HIV diagnoses not yet reported (because reporting is relatively new), and perhaps 2,100 persons who are unaware of their infection status. CDC estimates that one-quarter to one-third of all HIV infected persons in the US are undiagnosed and unaware of their status⁴. An additional 3,821 persons diagnosed with HIV or AIDS in King County have died over the past two decades.

Trends in Diagnosis of HIV Infection (Table 1)

We analyzed trends based upon the year of initial diagnosis with HIV infection, whether that diagnosis occurred soon after infection, or at the time AIDS symptoms developed. Although HIV reporting data are still incomplete, the number of new diagnoses appears roughly level at 400-500 new diagnoses each year since 1998.

Based upon data reported through December 2002, we compared the characteristics of persons first diagnosed with HIV infection during 1994-1996, to those diagnosed 1997-1999, and in 2000-2002. A chi-square test for trend was used to determine if the change in proportions for each group was statistically significant over those three periods. The statistically significant changes shown in Table 1 may demonstrate shifts in the epidemic, artifacts from implementing surveillance for HIV infection in 1999, or longer delays in getting tested among some groups,

Although the relative ranking of each group has not changed over time, there have been substantial shifts in the proportion of persons newly diagnosed with HIV infection among different groups. Between the three year period 1994-96 and 2000-2002, the proportion of cases increased for heterosexual transmission (from 5% to 12%), females (from 8% to 12%), blacks (from 14% to 22%), and residents of communities south or west of Seattle (from 8% to 11%). The proportion of cases decreased among men who have sex with men (from 72% to 62%), males (from 92% to 88%), whites (from 73% to 62%), and American Indians (from 3% to 1%).

These shifts are related in that much of the heterosexual transmission increase is among black females from south and west of Seattle, while most of the decrease is among men who have sex with men are white men residing in Seattle. The proportion of cases increased among black females (from 3% to 6%), black males (from 11% to 16%), and Hispanic males (from 7% to 9%), and decreased among white males (from 70% to 58% of the total).

Table 1. Demographic characteristics and year of HIV diagnosis for 8,936 Seattle/King County residents reported to Public Health – Seattle & King County through 12/31/2002*

	1982-1987		1988-1990		1991-1993		1994-1996		1997-1999		2000-2002		Trend** 1994-2002
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
TOTAL	1615	100	2028	100	1885	100	1361	100	1004	100	1043	100	
HIV Exposure Category													
Men who have sex w/men (MSM)	1261	78	1597	79	1387	74	977	72	681	68	642	62	Down
Injection drug user (IDU)	70	4	102	5	130	7	94	7	61	6	77	7	Level
MSM-IDU	204	13	221	11	197	10	107	8	79	8	76	7	Level
Blood product exposure	34	2	31	2	17	<1	7	<1	5	<1	7	<1	Level
Heterosexual contact	23	1	43	2	92	5	64	5	69	7	129	12	Up
Perinatal exposure	5	<1	3	<1	8	<1	7	<1	3	<1	2	<1	Level
<i>SUBTOTAL- known risk</i>	<i>1597</i>		<i>1997</i>		<i>1831</i>		<i>1256</i>		<i>898</i>		<i>933</i>		
Undetermined/ other	18	1	31	2	54	3	105	8	106	11	110	11	
Sex & Race/Ethnicity													
Male	1569	97	1940	96	1763	94	1249	92	896	89	914	88	Down
White Male	1387	86	1637	81	1429	76	947	70	630	63	607	58	Down
Black Male	87	5	168	8	175	9	154	11	123	12	171	16	Up
Hispanic Male	59	4	81	4	107	6	96	7	103	10	95	9	Up
Asian / PI Male	20		32		37		25	2	25	2	29	3	Level
Am Indian Male	16		22		15		26	2	13	1	8	1	Level
Unknown race Male	0	0	0	0	0	0	1	<1	2	<1	4	<1	
Female	46	3	88	4	122	6	112	8	108	11	129	12	Up
White Female	32	2	52	3	67	4	47	3	43	4	44	4	Level
Black Female	12	<1	25	1	36	2	42	3	52	5	63	6	Up
Hispanic Female	1	<1	2	<1	9	<1	11	<1	5	<1	15	1	Level
Asian / PI Female	0	0	4	<1	3	<1	4	<1	3	<1	2	<1	Level
Am Indian Female	1	<1	5	<1	7	<1	8	<1	3	<1	4	<1	Level
Unknown Race Female	0	0	0	0	0	0	0	0	2	<1	1	<1	
Race/Ethnicity													
White, not Hispanic	1419	88	1689	83	1496	79	994	73	673	67	651	62	Down
Black, not Hispanic	99	6	193	10	211	11	196	14	175	17	234	22	Up
Hispanic	60	4	83	4	116	6	107	8	108	11	110	11	Up
Asian / Pacific Islander	20	1	36	2	40	2	29	2	28	3	31	3	Level
American Indian / Alaska Native	17	1	27	1	22	1	34	3	16	2	12	1	Down
Unknown	0	0	0	0	0	0	1	<1	4	<1	5	<1	
Age at diagnosis of HIV													
0-19 years	38	2	34	2	25	1	21	2	19	2	13	1	Level
20-29	569	35	539	27	489	26	311	23	234	23	219	21	Level
30-39	682	42	932	46	835	44	605	44	472	47	492	47	Level
40-49	248	15	384	19	407	22	313	23	212	21	244	23	Level
50-59	65	4	102	5	110	6	95	7	55	5	63	6	Level
60+	13	1	37	2	19	1	16	1	12	1	12	1	Level
King County Residence													
City of Seattle	1405	87	1818	90	1611	85	1156	85	854	85	867	83	Level
North and East King County	100	6	100	5	135	7	96	7	61	6	58	6	Level
South and West King County	110	7	110	5	139	7	109	8	89	9	118	11	Up

*Includes persons who later developed AIDS

**Indicates a statistically significant (p<.05) trend in the proportion of cases by 3-year interval between 1994 and 2002

Persons Living with HIV or AIDS, by Gender, Race / Ethnicity, and Exposure Category (Table 2)

The trends described in the section above must be placed in the context of overall group rankings. Ninety-one percent of persons living with HIV or AIDS in King County are male and 9% are female. Most, 73%, are White, 15% are Black, 8% Hispanic, 2% Asian or Pacific Islander (API), and 2% Native American or Alaskan Native (NA/AN).

Six percent of cases have no identified behavioral exposure to HIV (using the standard CDC-defined categories). Among cases with known exposure, 70% are men who have sex with men (MSM), 7% are MSM who also inject drugs (MSM-IDU), 9% are injection drug users (IDU), 6% report having a heterosexual partner with HIV or at risk of HIV infection, 1% were born to HIV-infected mothers, and 1% report receipt of blood products (mostly prior to 1985 in the US, or more recently in other countries where effective blood screening has not been implemented).

The distribution of exposure categories differs by race and gender. MSM exposure is the most common among all males, accounting for 85% of known exposures among White men, 60% among Black men, 78% among Hispanic men, 85% among API men, and 51% among NA/AN men. MSM-IDU is the second most common exposure among White men (11%), API men (5%), and NA/AN men (33%). IDU is second among Black men (15%), and Hispanic men (11%).

Heterosexual transmission is the most common exposure among almost all women, including Whites (59%), Blacks (62%), Hispanics (81%), and API (71%). Among the relatively few NA/AN female cases, IDU is the most common risk behavior (78%), while 22% had heterosexual partners at risk.

While most diagnoses were among white males, the infection rates per 100,000 population show a higher burden of impact on several groups. The rate among males (537.7) is about ten times higher than among females (53.5). Compared with Whites (285.1), the rates are 2 and one half times higher among Blacks (731.9), and 1 and one half times higher among NA/AN (485.2) or Hispanics (432.6); but much lower among API (51.4). Overall rates are highest among Black and Hispanic males, and lowest among API, White, and Hispanic females.

Persons Living with HIV or AIDS, by Residence (Table 3)

Eighty-six percent 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. Overall, about 8% of persons with HIV/AIDS lived south or west of Seattle, and the remaining 6% resided north or east of Seattle.

There are a number of statistical differences (based on chi-square tests) between the HIV-infected populations inside Seattle compared with outside the city. Residents of Seattle are more likely to be male, MSM or MSM-IDU, White males, or American Indian males. Residents outside Seattle are more likely to be female, with IDU or heterosexual exposure, Black female, White female, or Hispanic female.

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 (20%), age 30-34 (24%), or age 35-39 (20%). Only 2% of persons were under age 20. This distribution has remained largely unchanged throughout the epidemic.

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 3,000 persons with AIDS and 5,400 persons who have not developed AIDS. Another 3,800 persons have died since 1982. The numbers of deaths and new AIDS diagnoses have declined substantially in recent years primarily due to effective treatments. Since 1998, the numbers of cases and deaths appear to have leveled so there are about 100 deaths and about 250 AIDS cases each year.

About 400-500 new HIV infections have been diagnosed each year since HIV reporting was implemented in Washington State in 1999. However it is important to note that many persons with HIV infection learn about their infection late in the course of disease because they are not tested until they develop symptoms of AIDS.

Table 2. King County residents living with HIV or AIDS by area of residence at diagnosis and reported to Public Health — Seattle & King County as of 12/31/2002

	City of Seattle		KC outside Seattle		Statistical Difference
	Number	Percent	Number	Percent	
TOTAL	4388	100	727	100	
RACE/ETHNICITY					
White, not Hispanic	3220	73	512	70	
Black, not Hispanic	645	15	125	17	
Hispanic	344	8	68	9	
Asian or Pacific Islander	94	2	14	2	
Native American or Alaskan Native	79	2	5	<1	Yes
Unknown	6	<1	3	<1	
SEX & RACE/ETHNICITY					
Male	4042	92	606	83	Yes
White Male	3088	70	450	62	Yes
Black Male	485	11	86	12	
Hispanic Male	320	7	56	8	
Asian or Pacific Islander Male	85	2	10	<1	
Native American or Alaskan Native Male	60	1	2	<1	
Unknown race Male	4	<1	2	<1	
Female	346	8	121	17	Yes
White Female	132	3	62	9	Yes
Black Female	160	4	39	5	Yes
Hispanic Female	24	<1	12	2	Yes
Asian or Pacific Islander Female	9	<1	4	<1	
Native American or Alaskan Native Female	19	<1	3	<1	
Unknown Race Female	2	<1	1	<1	
HIV EXPOSURE CATEGORY					
Men who have sex w/men (MSM)	3163	72	421	58	Yes
Injection drug user (IDU)	281	6	63	9	Yes
MSM-IDU	422	10	43	6	Yes
Blood product exposure	24	<1	16	2	
Heterosexual contact	238	5	93	13	Yes
Perinatal exposure	16	<1	5	<1	
SUBTOTAL- known risk	4144	94	641	88	
Undetermined/ other	244	6	86	12	
AGE AT HIV DIAGNOSIS					
0-19 years	97	2	29	4	Yes
20-24	437	10	66	9	
25-29	892	20	130	18	
30-34	1051	24	160	22	
35-39	890	20	154	21	
40-44	520	12	88	12	
45-49	286	7	49	7	
50-55	138	3	28	4	
55-59	51	1	17	2	Yes
60-64	16	<1	3	<1	
65+	10	<1	3	<1	

Table 3. King County residents living with HIV or AIDS and reported to Public Health — Seattle & King County as of 12/31/2002

Characteristics of King County Residents with HIV or AIDS

	Number Reported	Percent	Estimated Infected	2000* Population	Estimated Rate per 10000
TOTAL	5,115	100	8,400	1,737,034	294.5
RACE/ETHNICITY					
White, not Hispanic	3,732	73	6,150	1,309,120	285.1
Black, not Hispanic	770	15	1,240	105,205	731.9
Hispanic	412	8	690	95,242	432.6
Asian or Pacific Islander	108	2	180	210,156	51.4
Native American or Alaskan Native	84	2	140	17,311	485.2
Unknown	9	<1	N.A.		
SEX & RACE/ETHNICITY					
Male	4,648	91	7,630	864,457	537.7
White Male	3,538	69	5,810	649,271	544.9
Black Male	571	11	940	53,895	1059.5
Hispanic Male	376	7	620	51,662	727.8
Asian or Pacific Islander Male	95	2	150	101,045	94.0
Native American or Alaskan Native Male	62	1	100	8,584	722.3
Unknown Race Male	6	<1	<20	Not applicable	Not applicable
Female	467	9	770	872,577	53.5
White Female	194	4	320	659,849	29.4
Black Female	199	4	330	51,310	387.8
Hispanic Female	36	<1	60	43,580	82.6
Asian or Pacific Islander Female	13	<1	<20	109,111	11.9
Native American or Alaskan Native Female	22	<1	<20	8,727	252.1
Unknown Race Female	3	<1	<20	Not applicable	Not applicable
HIV EXPOSURE CATEGORY					
Men who have sex w/men (MSM)	3,584	70	6,310	30- 50,000	12,620- 21,033
Injection drug user (IDU)	344	7	620	15,000	4133
MSM-IDU	465	9	800	2,500- 3,800	21,052- 32,000
Blood product exposure	40	1	70	Unknown	Not applicable
Heterosexual contact	331	6	560	1,245,000	45
Perinatal exposure	21	<1	40	Unknown	Not applicable
SUBTOTAL- known risk	4,785	94	8,400	Not applicable	Not applicable
Undetermined/ other	330	6	N.A.	Not applicable	Not applicable
AGE AT HIV DIAGNOSIS					
0-19 years	126	2	210	434,736	29.0
20-24 years	503	10	830	116,597	431.4
25-29 years	1,022	20	1,680	141,795	720.8
30-39 years	2,255	44	3,680	308,187	731.7
40-49 years	943	19	1,560	292,470	322.4
50 years and over	266	5	440	443,249	60.0
RESIDENCE AT DIAGNOSIS					
City of Seattle	4,388	86	7,230	563,374	778.9
North or East of Seattle	300	6	500	575,548	52.1
South or West of Seattle	427	8	670	597,999	71.4

* 2000 Census Population as of April 1, 2000, with single race bridged estimates

The total number of persons living with AIDS or with HIV infection in King County is increasing because each year there are more new diagnoses than deaths. Most HIV-infected King County residents currently are White men who have sex with men, are 30-45 years of age, and reside in 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.

- *Contributed by Amy Bauer MPH, Jim Kent MS, and Sharon G. Hopkins DVM, MPH*
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Footnotes

1. CDC. HIV/AIDS Surveillance Report, Volume 13(2), Cases reported through December 2001. Available at <http://www.cdc.gov/hiv/stats/haslink.htm>
2. King County Registrar / VISTA
3. HIV Prevalence Estimation in Washington (working document)
4. Sweeney PA, Fleming PL, Karon JM, et al. A minimum estimate of the number of living HIV infected persons confidentiality tested in the United States [Abstract I-16]. In: Program and Abstracts of the Interscience Conference on Antimicrobial Agents and Chemotherapy. Toronto, Canada: American Society for Microbiology, September 1997.

Revised Partner Counseling and Referral Services policy being implemented September 2003

Public Health – Seattle & King County (PHSKC) and the King Co. Medical Society Board now ask all health care providers to routinely inform patients whom they identify as HIV-infected about the importance of talking with PHSKC about exposed partners who should be notified and helped to get tested for HIV. PHSKC requests that providers actively assist Public Health in contacting their patients.

Implementing this approach is based largely upon three findings:

1. There appears to be an increase in new HIV infections among MSM in King County (see related article).
2. A recent local study found 84% of newly diagnosed HIV patients agreed that partner notification services are important.
3. Eight community physicians who treat the largest numbers of HIV-infected patients and who met with Public Health all supported this process.

Physicians should advise newly diagnosed patients that PHSKC staff will be contacting them about partner notification and other outreach services. Physicians will be requested to provide Public Health with specific patient contact information, such as the best time and place to contact the patient, telephone number, and address.

If you have questions about this policy, or would like assistance in discussing partner counseling and referral with your patients, please contact Dr. Matthew Golden of the Public Health STD Clinic at 206-731-6829.

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- *Contributed by Jim Kent, MPH, HIV/AIDS Surveillance Coordinator*

Why Implement New HIV Testing Strategies for a Changing HIV Epidemic? Considerations Based on SHAS Interview

In April, 2003, the Centers for Disease Control and Prevention (CDC) published an article in the *Morbidity and Mortality Weekly Report (MMWR)* discussing reasons for the launch of a new HIV prevention initiative. These reasons include recent outbreaks of primary and secondary syphilis in men who have sex with men (MSM) in several U.S. cities, increases in newly diagnosed HIV among MSM and heterosexuals that may be indicative of increases in incidence, and the end of the declines that had been seen in HIV morbidity and mortality in the late 1990s due to adoption of combination antiretroviral therapy. A number of these national trends are mirrored in Washington State. Seattle-King County has had an ongoing outbreak of primary and secondary syphilis for the past several years, there is increasing evidence that HIV incidence may be increasing in some populations, and morbidity and mortality trends have leveled off since the late 1990s.

In response to these trends, CDC outlined the new initiative in terms of four key strategies. These are to:

- Make HIV testing a routine part of medical care.
- Implement new models for diagnosing HIV infections outside medical settings.
- Prevent new infections by working with persons diagnosed with HIV and their partners.
- Further decrease perinatal HIV transmission.

In addition to being a focus of the new initiative, HIV testing has recently been highlighted in a number of other ways. National HIV Testing Day took place on June 27th, emphasizing the important role that knowledge of HIV status plays in both prevention of HIV and care and establishment of treatment for those who are infected. On this day, an article was published in the *MMWR* describing late versus early testing for HIV, and the analyses were based on data from the Supplement to HIV/AIDS Surveillance (SHAS) interview study. Consequently, this article (Part I) will focus on issues of HIV testing based on Washington State SHAS data. In Part II, to appear in the next issue of this report, SHAS data will be examined in regards to risk behaviors of those who are HIV infected and the importance of working with persons diagnosed with HIV and their partners to prevent transmission of the virus. Results will emphasize the importance of considering what strategies to use for HIV prevention in Washington State.

Methods

The Supplement to HIV/AIDS Surveillance (SHAS) Interview Project is a multi-center study sponsored by the CDC that has been conducted in Washington State since 1991. Since that time, the study has expanded from limited counties in the Puget Sound area to the entire state, and eligible participants now include not only those with AIDS but also HIV infection. Trained interviewers conduct face-to-face interviews, in both English and Spanish, with persons aged 18+ years with HIV/AIDS who were reported recently to the state HIV/AIDS reporting system.

In June of 2000, a fully revised national instrument became available at the local level; changes to the instrument were described in a previous issue of this report. To date, 1,956 interviews have been completed in Washington State, 1,517 with the old questionnaire (1991-2000) and 439 with the new one. Data collected with the new instrument are often not consistent with data collected with the previous instrument. As a result, analyses for this article will include data collected from those 439 individuals interviewed between June 2000 and June 2003.

In King County, the SHAS sample selection scheme starts with stratification by mode of exposure and race/ethnicity. Then 25% of white men whose only reported risk was male-male sex are selected and 100% of men and women with any other mode of exposure, including injection drug use and heterosexual contact are selected. Interviews are also conducted with white MSM who are not part of the stratified sample who self-refer to the study; these respondents become part of a convenience sample. All men of color are included, regardless of risk. Outside of King County, all people with HIV are eligible.

The time between first HIV+ diagnosis and diagnosis with AIDS was calculated by subtracting the respondent's self-reported HIV+ test date from the SHAS interview from the date of AIDS diagnosis from the state HIV/AIDS Reporting System (HARS). Early testers were defined as persons who reported that they had their first positive HIV test 5 or more years before the diagnosis of AIDS or had 5 or more years without a diagnosis of AIDS after their first positive HIV test. Late testers were defined as persons who had their first positive HIV test up to 1 year before the diagnosis of AIDS. The following groups were excluded from analysis: persons who tested more than 1 year but less than 5 years before AIDS diagnosis, persons who were not followed for an ad-

equate follow-up time (i.e., less than 5 years after a positive HIV test without a diagnosis of AIDS being made), and persons for whom the relation between HIV testing and AIDS diagnosis dates could not be determined.

than male-to-male sex (i.e.: injection drug-users, men who have sex with men and inject drugs), make up a higher proportion of cases in the SHAS population than in the HARS population. Women are also slightly overrepresented in the SHAS population and as a result, heterosexual contact as a risk behavior is also proportionally larger among SHAS respondents. Hispanic individuals make up a higher proportion of SHAS respondents when compared with those reported with HIV/AIDS. In regards to geographic distribution, because of stratified sampling criteria among the SHAS population, Region 4 is underrepresented in the SHAS population and Regions 1, 2, and 6, are overrepresented among SHAS participants.

Results

Representativeness

Table 1 compares behavioral and demographic characteristics of SHAS respondents with HIV/AIDS cases reported from June 2000 - June 2003. Because of stratified sampling criteria among the SHAS population, risk behaviors other

Table 1. Behavioral and demographic characteristics of SHAS (Supplement to HIV/AIDS Surveillance) respondents and HIV/AIDS cases reported in Washington State, June 2000 - June 2003

	SHAS Respondents N = 439		HIV/AIDS Cases ¹ N = 3,541	
	No.	(%)	No.	(%)
HIV exposure category				
MSM (men who have sex with men)	209	(48)	2193	(62)
IDU (injection drug users)	84	(19)	343	(10)
MSM/IDU	77	(18)	271	(8)
Heterosexual contact	58	(13)	402	(11)
NIR (no identified risk)	10	(2)	314	(9)
Blood exposure ²	1	(<1)	18	(<1)
Gender				
Male	358	(82)	3037	(86)
Female	81	(18)	504	(14)
Race/ethnicity				
White	290	(66)	2512	(71)
Black	71	(16)	551	(16)
Hispanic	68	(15)	303	(9)
American Indian/Alaskan Native	6	(1)	64	(2)
Asian/Pacific Islander	2	(<1)	84	(2)
Multi-race	-	-	5	(<1)
Unknown & multi-race	2	-	22	-
AIDSNet region				
1 (Spokane)	41	(9)	167	(5)
2 (Yakima)	25	(6)	111	(3)
3 (Snohomish)	25	(6)	285	(8)
4 (King)	221	(50)	2286	(64)
5 (Pierce)	53	(12)	389	(11)
6 (Clark)	74	(17)	303	(9)

¹ Cases reported to WA Health Department from June 2000 - June 2003, pediatric cases were excluded from analysis.

² Blood exposure includes: hemophilia, transfusion, and transplant.

Late testers vs. early testers

Of the 439 persons interviewed between June 2000 and June 2003, 117 (27%) progressed to an AIDS diagnosis within 12 months of their first positive HIV test; these persons were classified as late testers. There were 166 persons (38%) who had their first positive HIV test 5 or more

years before the diagnosis of AIDS or had 5 or more years without a diagnosis of AIDS after their first positive HIV test; these persons were classified as early testers. The remaining 156 persons (36%) were excluded as described in the methods above.

Table 2. Characteristics of SHAS (Supplement to HIV/AIDS Surveillance) respondents who were classified as late and early testers* - Washington State, June 2000-June 2003.

Characteristics**	HIV Testing			
	Late N = 117		Early N = 166	
	No.	(%)	No.	(%)
Sex				
Female	15	(13)	32	(19)
Male	102	(87)	134	(81)
Age group (yrs) (at HIV diagnosis)				
< 30	19	(16)	86	(52)
>= 30	98	(84)	80	(48)
Race/Ethnicity				
White	76	(65)	110	(66)
Black	15	(13)	29	(17)
Hispanic	24	(21)	22	(13)
Mode of exposure				
MSM	59	(50)	84	(51)
IDU	23	(20)	31	(19)
MSM/IDU	13	(11)	33	(20)
Heterosexual	15	(13)	18	(11)
Level of education				
<High school	13	(11)	8	(5)
High school	50	(43)	73	(44)
>High school	54	(46)	85	(51)
Ever tested before first + HIV test?				
Yes	48	(41)	70	(42)
No	68	(57)	96	(58)
Type of testing at first + HIV test				
Anonymous	18	(16)	44	(27)
Confidential	85	(73)	103	(62)
Don't know	13	(11)	18	(11)
Place of HIV testing at first + test				
Acute and referral care setting	103	(92)	136	(84)
HIV testing sites	4	(4)	11	(7)
HIV testing required sites***	5	(5)	15	(9)

*Late testers were defined as persons who had their first positive HIV test ≤ 1 year of diagnosis of AIDS; early testers were defined as persons who either had their first positive HIV test ≥ 5 years before diagnosis of AIDS or had ≥ 5 years without a diagnosis of AIDS after their first positive HIV test.

**Categories may not add to totals because of missing data.

***Includes blood bank, drug-treatment clinic, military facility, and insurance clinic.

Compared with early testers, a higher proportion of late testers were male, 30 years of age or older, Hispanic, and had less than a high school education. A higher proportion of early testers than late testers were tested anonymously for HIV when they received their first positive test result (27% vs. 16% respectively). A higher proportion of late testers than early testers received their first positive HIV test in an acute care or referral facility (92% vs. 84%, respectively). Figure 1 shows that the majority of late testers received HIV testing because of illness (52%) and the majority of early testers received HIV testing because they recognized either their own risk or their partner's risk, or they just wanted to know.

Discussion

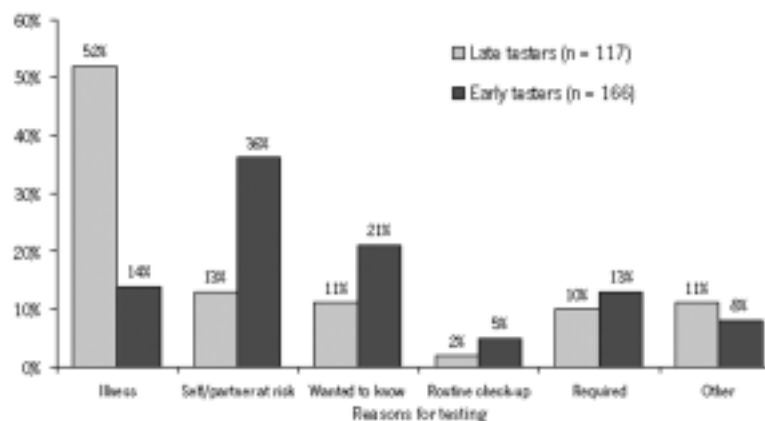
For several reasons, SHAS respondents may not be representative of all people with HIV in Washington State. Due to sampling methods, some populations are overrepresented in the SHAS data as described previously. Patient participation can be biased by many factors such as patient death, loss to medical follow-up, and lack of provider participation (in reporting and referring patients). Interview data are subject to recall bias as well as potential interviewer/interviewee bias. Additionally, due to use of a revised interview instrument in June 2000, the data included in this report are not as robust as would be ideal and the sample sizes for some populations are too small to provide valid estimates. However, SHAS continues to provide important information that is not available from other sources.

Both at the national and the local level, SHAS data indicate that late diagnosis of HIV is a significant problem. Over 25% of WA State SHAS respondents met the definition of late testers; this may be an underestimate because, since treatment may delay progression to AIDS and the natural course of HIV is highly variable. In other words, people who really did receive an HIV test a long time after their HIV infection (late testers) may have starting antiretroviral treatment soon

after an HIV diagnosis and thus altered the course of their HIV disease and avoided an AIDS diagnosis. Other people may have been tested for HIV many years following infection but their own immune system may have prevented HIV disease progression without treatment for 5 or more additional years after HIV diagnosis and thus they were incorrectly classified as early testers or excluded.

Knowledge of one's HIV serostatus is essential for HIV prevention, and knowledge of HIV infection appears to result in safer sexual practices that help prevent further transmission of the virus. A late diagnosis may represent many missed prevention opportunities. With the availability of new therapies, early intervention may mean a longer, healthier life for a person who tests HIV+. For pregnant women, early diagnosis of HIV allows mothers to participate in medical intervention that has been shown to reduce the chance of transmitting HIV to their children.

Figure 1. Percentage of late and early testers* by reason for testing, SHAS (Supplement to HIV/AIDS Surveillance) respondents in Washington State, June 2000- June 2003



*Late testers were defined as persons who had their first positive HIV test up to 1 year before a diagnosis of AIDS; early testers were defined as persons who either had their first positive HIV test 5 or more years before diagnosis of AIDS or had 5 or more years without a diagnosis of AIDS after their first positive HIV test.

While data were somewhat limited, it appears that a higher proportion of late testers were male, 30 years of age or older, of Hispanic ethnicity, and had less than a high school education. It will be important to continue to look at the SHAS data as more interviews are accrued in order to highlight populations that need to be targeted for HIV testing. The proportions of both early and late testers who had received HIV testing prior to their first positive HIV test were about equal (42% vs. 41%, respectively); this may indicate that the late testers received a negative test result at some time and then did not test again for an extended period. It will be important to encourage those who engage in HIV-related risk behaviors to get tested frequently; this would provide an opportunity to deliver prevention messages on a regular basis and, in the case of seroconversion, encourage people to access care and treatment early in their infection. A higher proportion of early testers initially tested HIV+ at anonymous test sites than late testers (27% vs. 16%), which highlights the importance of maintaining this option to encourage early HIV testing.

In light of these results, it appears that focusing on strategies to encourage more people to be tested early in the course of their HIV infection makes good sense, both for delivering HIV prevention services and to get infected people into care early in their infection to prevent AIDS and other HIV-related illnesses. There will be continued discussions about how to incorporate HIV testing as a routine part of medical care while maintaining its voluntary nature. The ability to test people for HIV in non-traditional settings has been expanded because of the recent approval of simple rapid HIV tests. Identifying those who are infected with HIV is the first step to breaking the chain of infection, followed by working with HIV positive individuals to prevent new infections (this will to be addressed in Part II to be included in the next issue of the HIV/AIDS Epidemiology Report).

If you would like more information about the SHAS project, please contact Alexia Exarchos at the Washington State Department of Health, Infectious Disease and Reproductive Health Assessment Unit, (253) 395-6730. If you are eligible to participate in the project or have clients who are eligible, please contact John Valliant at 1-888-328-7886.

- *Contributed by Alexia Exarchos, MPH and Maria Courogen, MPH*

SHAS staff would like to thank the hundreds of men and women living with HIV for their willingness to share their experiences, and the many health care providers and case managers whose assistance in recruiting patients to participate has made this project possible.

Rising Incident HIV Infections Among Men who have Sex with Men

Background

As in many cities around the world, since the mid-1990s King County has seen a sharp increase in reported syphilis and other STDs and the frequencies of unsafe sexual behaviors among men who have sex with men (MSM). However, it has been uncertain whether incident HIV infections also are rising. To address this question, we looked at indicators of incident HIV infection among MSM recently diagnosed with and at risk of HIV.

Methods

We analyzed data on MSM who underwent HIV testing at the STD Clinic or other public health clinics since 1995 and compared the results with reported syphilis, gonorrhea, and chlamydial infections and with sexual behavior trends.

Results

HIV seroprevalences in MSM who had never been tested or who previously were seronegative were 175/6614 (2.6%) in 1999-2001, 74/2533 (2.9%) in 2002, and 45/1153 (3.9%) in Jan-May 2003 ($P = 0.03$). Among MSM found to be HIV-negative and subsequently retested, the proportion of newly seropositive men rose steadily from 13/1760 (0.7%) in 1997 to 34/1564 (2.2%) in 2002 (Figure 1). From 1997 to 2000, 72 (19.7%) of 365 HIV-positive MSM had negative lower-sensitivity enzyme immunoassay results (Figure 2), suggesting recently acquired infection. This proportion rose to 24 (39%) of 62 men in 2001 and 39 (44%) of 88 men in 2002 (test for trend $P < 0.001$). The rates calculated from these data also suggest rising incident HIV infections, in MSM, especially those who also have histories of injection drug use (Table 1).

Rates of syphilis, gonorrhea, and chlamydial infection in MSM, which started to rise in 1997, continued to increase steadily through May 2003 (Figures 3 and 4). During the same period, there were progressive increases in several indices of unsafe behaviors among MSM, such as unprotected anal intercourse. Among 202 MSM who knew themselves to be HIV-positive and who attended the STD Clinic from October 2001 to March 2003, 88 (43%) acknowledged unprotected anal intercourse with partners of negative or unknown HIV status in the preceding year.

Conclusions

Incident HIV infections may be rising among MSM in Seattle and King County, in parallel with adverse trends in sexual

safety and STD rates. Although the clearest and most significant HIV trend shows that the proportion of new HIV diagnoses that are also new infections is increasing, these same data may be used to calculate rates of new HIV infection that also suggest increases. However, population-based HIV surveillance do not yet show an increase in HIV incidence, although these data typically lag behind incidence trends due to reporting delays. Nonetheless, clear HIV, STD, and risky behavior data show there is an urgent need for redoubled prevention efforts. Traditional prevention strategies are inadequate; new approaches are urgently needed.

Table 1: Estimated HIV Incidence per 100 person-years among persons testing for HIV at publicly funded sites; Public Health - Seattle & King County 1997 - 2002.

Study		1997-1998	1999-2000	2001-2002
STARHS*	All	0.5	0.3	0.6
	MSM	2.1	1.1	2.2
	MSM-IDU	1.3	1.0	2.7
Cohort**	All	0.3	0.3	0.4
	MSM	1.1	1.1	1.3
	MSM-IDU	0.7	0.8	1.3

*STARHS = Serologic Testing Algorithm for Recent HIV Seroconversion, which bases HIV incidence on the lower-sensitivity enzyme immunoassay test which can distinguish, on a population basis, recent HIV infections ($\sim < 6$ months) from longer standing HIV infections.

**Cohort = persons who have two or more HIV tests with rates calculated according to the amount of time contributed.

Excerpted from Handsfield H, Golden M, Wood R. International Society for Sexually Transmitted Diseases Research 2003 ISSTD Congress; Ottawa, Canada, July 27-30 (abstract)

- Contributed by Drs. Hunter Handsfield, Matt Golden, Gary Goldbaum, and Bob Wood

Figure 1: New positive HIV tests among previously tested men who have sex with men, Public Health - Seattle & King County STD/HAP, 1994-2002

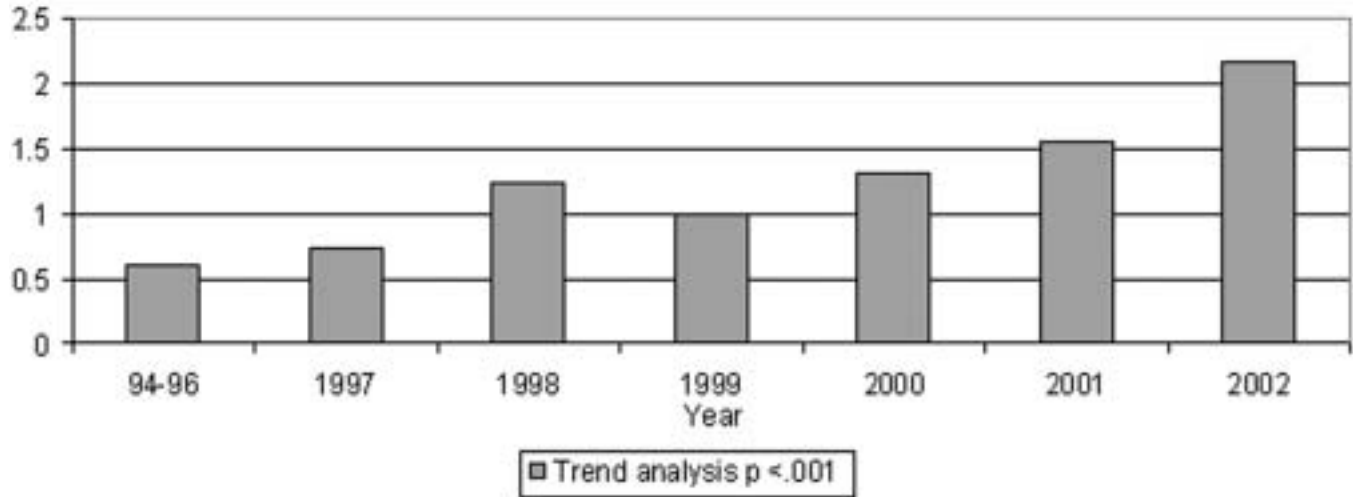


Figure 2: Less sensitive EIA (LS-EIA) non-reactives, indicating recent HIV infection (within 6 - 12 mos) Public Health- Seattle & King County

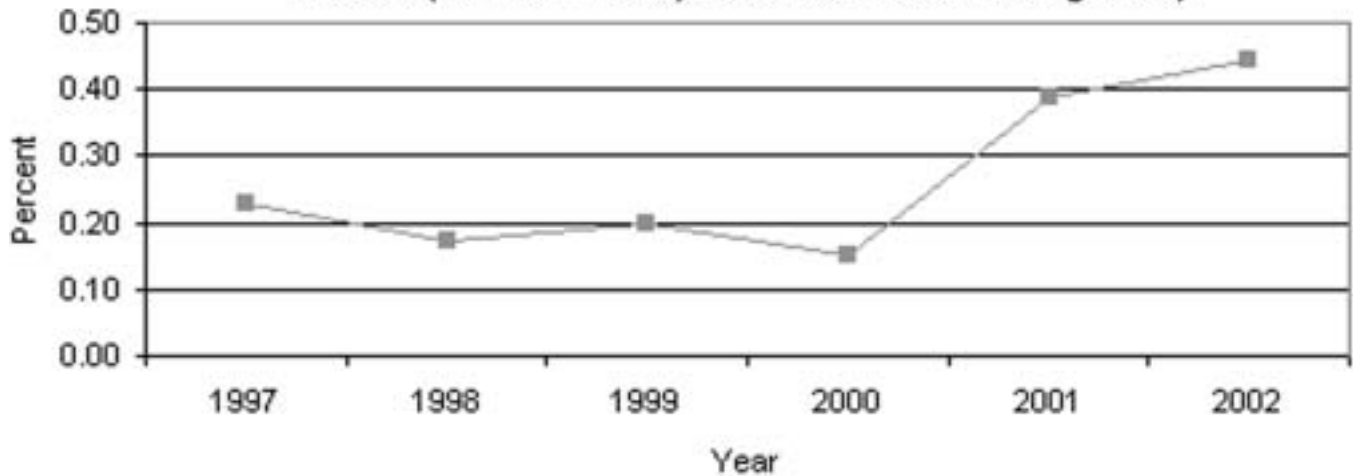


Figure 3: Estimated incidence of early syphilis in men who have sex with men, Public Health-- Seattle & King County, 1997-2003 (assumes 42,500 MSM in King County; 2003 rates projected based on Jan - May)

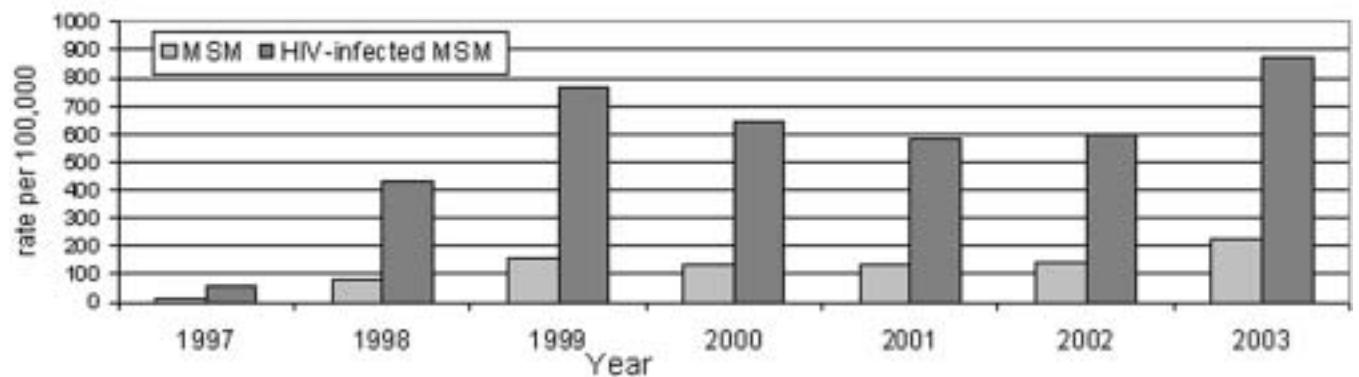
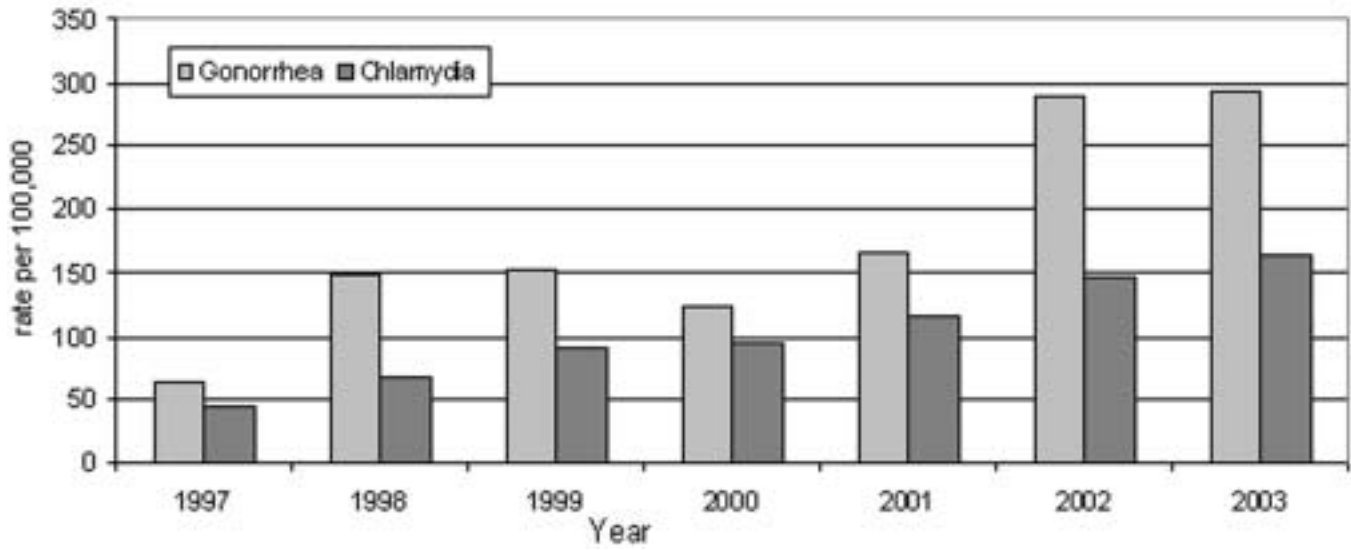


Figure 4: Gonorrhea and chlamydia diagnoses among men who have sex with men; Public Health - Seattle & King County STD Clinic, 1997-2003 (2003 rates projected based on Jan - Apr)



Results from the Kiwi Study: HIV and Hepatitis C Prevalence and Risk Behaviors in Recently Arrested Injection Drug Users in King County

Injection drug use was directly associated with 20% of AIDS cases reported in the United States in 2000.¹ Although injection drug use plays a smaller role in HIV transmission in King County — accounting for 12% of AIDS cases diagnosed in 2002 — close monitoring of HIV and related risk behaviors among injection drug users (IDU) is important because transmission patterns can change rapidly — as was seen in Vancouver, BC in the mid-1990s.^{2, 3, 4} In addition to HIV and AIDS surveillance, several studies have monitored HIV and risk behaviors among IDU in King County since the late 1980s. From 1988 through 1999 Public Health conducted unlinked HIV seroprevalence surveys of IDU entering drug treatment in King County as part of the Centers for Disease Control and Prevention (CDC) National HIV Serosurveillance System.⁵ An interview survey of IDUs recruited in drug treatment centers and other locations was conducted in the early 1990s. This was the OWL Study which became the RAVEN Study, and enrolled over 3,000 IDUs between 1994 and 1997 into a follow-up study to assess HIV and hepatitis B and C prevalence and incidence and evaluate the Public Health Needle Exchange Program.⁶ When the RAVEN Study began to wind down it was decided that another study was needed to provide continued monitoring of HIV and risk behaviors in a broad sample of IDU. We knew from the RAVEN Study that incarceration was common among local IDU, suggesting that a jail-based study would be an appropriate approach. In 1998 the CDC granted Public Health funding for the Kiwi Study to assess if it was feasible to conduct HIV and behavioral risk surveillance in a jail setting. This report provides a summary of results from this study.

Methods

The Kiwi Study was a cross-sectional face-to-face interview survey of recently arrested IDU booked into the King County Correctional Facility in Seattle (the Seattle jail) or the Regional Justice Center in Kent (the RJC jail).⁷ Data collection took place from August 1998 through December 2002. Originally the survey only included the Seattle jail, but in November 2000, recruitment was expanded to include the RJC jail in Kent. Participants were sampled through two different methods. Trained study personnel administered a brief screening survey to all persons being booked in the Seattle facility during randomly selected time periods to identify current IDU 18 years and older and to invite them to participate in the study. Those who agreed were referred to

the jail health clinic for HIV counseling and testing (CT) and completion of the Kiwi Study survey. Persons who were released from jail early were referred to a nearby study storefront to enroll in the study. Secondly, other eligible IDU who sought HIV CT at the jail health clinics, and who were not encountered when they were booked in Seattle, were also invited to participate in the study. Following HIV and hepatitis C pre-test counseling, a structured questionnaire was administered by a trained interviewer. The questionnaire asked about sociodemographic characteristics, drug-use, and sexual behaviors. HIV incidence was assessed using the Serological Testing Algorithm for Recent HIV Seroconversion (STARHS) during the time periods where the less sensitive HIV-1 EIA test kits were available.⁸ The study was approved by the Institutional Review Boards of Washington State and the CDC.

During the years of the study persons arrested within the city limits of Seattle and north of the Interstate 90 (I-90) highway outside Seattle were booked into the jail in Seattle and persons who were arrested south of I-90 outside Seattle were booked at the RJC jail. The average daily jail population in 2000 at both jails was 2,953. The average number of daily bookings were 90 in the Seattle jail and 64 in the RJC jail and the average length of stay at both jails was 18 days with 45% being released within 48 hours.⁹

Results

A total of 1,811 individual IDU were enrolled in the Kiwi Study between August 1998 and December 2002, including 1,315 persons from the Seattle jail and 496 persons from the RJC jail. The participation rate was 57% for eligible persons identified in the Seattle jail booking, 64% for participants in the jail health clinics for an overall participation rate of 60%. There were no differences in sex, age or race between subjects completing an interview and eligible IDU screened at booking. The mean age for both groups was 35 years, 77% of both groups were male, and the proportion of whites was 67% at booking and 64% among those who completed the study. Results were combined for both jail sites when no differences were observed and presented separately when differences were observed.

Sociodemographic characteristics

Sixty-three percent of Kiwi Study participants resided in Seattle, 24% in King County outside Seattle, 9% in other areas of Washington State, and less than 1% resided in other states (zip code of residence was missing for about 3%). The area of residence corresponded well with the area of arrest. For example, 88% of Seattle study participants were also booked in the downtown Seattle jail. The majority of study participants were male (77%), older than 30 years (69%), and white (64%) (Table 1). About 60% had no permanent residence prior to their arrest, and a quarter had not completed high school, although one-third had some college or technical education. Sixty-eight percent were unemployed, almost half had no income, and one-quarter were receiving public assistance. Participants from the RJC jail were more likely to be younger, white, have their own place to live, and be employed.

Sexual orientation and behaviors

Seven percent the male participants reported homosexual or bisexual orientation while 12% reported having ever had sex with other men (Table 2). One-quarter of the female participants reported homosexual or bisexual orientation. Male participants from the Seattle jail were somewhat more likely to report sex with other men than male participants from the RJC jail (15% vs. 6%) and were also more likely to identify as gay or bisexual (9% vs. 3%).

Females reported higher number of sex partners than male participants and over half of the female respondents had exchanged sex for money or drugs compared to 12% of the male respondents. Females were more likely than males to report having used condoms in the last 6 months, but almost half of the females and 56% of the males never used condoms in the last 6 months.

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

The questionnaire asked about drug use and drug use behaviors in the past year, the past 6 months and in the last 30 days. Half of the participants had started injecting at age 19 or younger (Table 1). Type of injection drugs varied markedly between participants from the two jails with Seattle jail participants injecting heroin (59%) as their primary drug of choice (drug injected most often) while the preferred injection drugs in the RJC participants were amphetamines (58%) followed by heroin (27%) (Table 3). Use of non-injection drugs, particularly marijuana, crack cocaine, and amphetamines (in participants from the RJC jail) was common. The majority of participants (94%) had injected drugs in the past 6 months; two-thirds of Seattle jail participants and 33% of RJC jail participants had injected in the past month. RJC jail participants were less likely to have injected recently since most were enrolled at their mandatory health exam which occurred 14 or more days after they were incarcer-

ated. Among those who had injected in the past month, two-thirds injected two or more times per day (data not shown). Among those who had injected in the past 6 months, about one-quarter reported having injected with more than 10 different people. A very high percent (61% in Seattle and 72% at RJC) reported injecting with a syringe previously used by someone else and over one-quarter had injected with 2 or more different people's used syringes in the last 6 months. Sharing of cookers to melt drugs and sharing of syringes to divide up drugs (backloading) was reported by three-quarters and almost two-thirds of participants, respectively. Among those who injected with used needles, respondents reported injecting after close friends (46%), steady sex partners (37%), regular shooting partners (36%), and drug dealers (26%) (data not shown). Lack of new sterile syringes was the most common reason for injecting with used needles cited by a quarter of the participants who had shared.

Almost eighty percent had been in some form of drug treatment in their lifetime and 41% had been in treatment in the past year. Among those who had been in drug treatment in the past year, 30% were in an in-patient treatment program, 26% in a drug-free outpatient program, 22% in a methadone maintenance program, 21% in a 12-step program, and 16% in a non-methadone detoxification program (data not shown).

Three-quarters of Seattle participants got new sterile syringes at a needle exchange and 61% reported that a needle exchange was their primary source of needles (Table 4). The majority of RJC participants (59%) got new sterile syringes from a pharmacy and 43% said that a pharmacy was their primary source of syringes compared to 16% of Seattle participants.

HIV incidence, HIV and hepatitis C prevalence, & health history

A total of 45 persons (2.5%) tested HIV positive and 26 (58%) were already aware of their infection. HIV prevalence was highest among male injectors in Seattle (3%) and lowest among females in the RJC jail (1%) (Table 5). Based on STARHS the estimated annual HIV incidence was 1% (95% confidence interval=0.3% - 2.6%). Hepatitis C virus (HCV) prevalence was 65% with 39% saying that they previously tested seropositive for HCV. HCV prevalence increased by years of injection drug use (Figure 1) and was markedly lower among males in the RJC jail (45%) compared to females overall (74%) and males in the Seattle jail (73%). Seventeen percent reported previously testing seropositive for hepatitis B and 17% had been vaccinated for hepatitis B. Over half of the women and about one-third of the men had been diagnosed with a sexually transmitted disease.

Among the 1,387 male participants, 172 (8%) reported having had sex with other men (MSM). HIV prevalence was 2% in non-MSM male injectors and HCV prevalence was 61% compared to 9% and 65%, respectively, in MSM injectors

(Table 6). HIV prevalence varied little by injection drug of choice among non-MSM male injectors while HIV prevalence was 20% in MSM amphetamine injectors and 5% in MSM whose primary injection drug was heroin or cocaine. HCV prevalence differed by primary injection drug among both non-MSM and MSM injectors with amphetamine injectors having much lower HCV prevalence (about 40%) relative to cocaine and heroin injectors (60-82%).

Travel and unprotected sex and needle sharing activities

About half of the Kiwi Study participants had traveled out of King County in the past year and about one-quarter had traveled out of the state; only 3% had been to Vancouver, BC (Table 7). Nine percent had injected with used needles during their travels and 5% had injected in King County with a needle used by someone from another area. Twenty percent reported unprotected sex with someone during travels and 5% had had unprotected sex in King County with someone from another area. Very few (less than 1%) reported needle sharing or unprotected sex with someone from Vancouver, BC.

Discussion

The Kiwi Study demonstrated that it is feasible to identify IDU in jail settings and enroll them in an HIV testing and risk behavior survey. It is important to understand differences in sociodemographic characteristics and drug-use practices among subpopulations of IDU in a geographical area. Expansion of the survey to the RJC jail allowed inclusion of IDU from more suburban and rural settings who are usually not included in large IDU surveys. We found important distinctions between RJC and Seattle participants. Seattle participants were less likely to be white or multiracial and more likely to be African American, more likely to be older, unemployed, and have less stable housing than RJC participants. The primary injection drug of choice was heroin in Seattle participants and amphetamine in RJC participants. RJC participants were much more likely to purchase new sterile syringes at pharmacies relative to Seattle participants. Seattle participants were more likely to obtain new syringes from needle exchanges.

The low HIV prevalence we found is consistent with findings from other local IDU studies that have shown prevalence to be less than 4%.^{5, 7} HIV prevalence was highest among MSM amphetamine injectors, although not as high as seen in another study of IDU entering drug treatment 1988-1991.¹⁰ HCV prevalence was somewhat lower than the 85% observed in the RAVEN study 1994-1997, especially among male injectors in the RJC jail, but also among Seattle jail participants. Further comparisons between the two studies are needed to determine whether these differences were due to a lower prevalence of HCV among IDU in general or to differences in the study populations.

Risky drug preparation and injection practices were common and it is very worrisome that such a high proportion of IDU continue to inject with used needles and share other drug use equipment. Thus it is not surprising that HCV prevalence is high. However, among those who did inject with used needles, most shared with steady sex partners, close friends, or regular shooting partners. It is possible that needle sharing takes place within smaller networks, which may explain the low HIV transmission rate in this population. However, the high prevalence of HCV, risky sharing behaviors, STD history, and lack of condom use are certainly reasons to be concerned about the potential for transmission of HIV among Seattle-area IDU, especially if network dynamics should change. The lower HCV prevalence among male RJC participants emphasizes the opportunity for prevention of HCV infection. It is very encouraging that hardly any Kiwi Study participants reported risky drug use or sexual behaviors with IDU from Vancouver, BC where a very high percent of injectors are infected with HIV.^{3,4}

We found that many HCV-infected patients had not known they were HCV-infected. Although we did not screen for hepatitis B virus (HBV) we also assume many HBV-infected IDUs are unaware of their HBV infection. Although these data are from slightly different time periods and cohorts, lack of knowledge of HBV infection is supported by a self-reported history of HBV of 17% in this project relative to a 62% HBV seropositive rate observed in the RAVEN Study. These findings demonstrate the need to expand access to hepatitis B and C counseling and testing and HBV vaccinations for IDU. The Public Health Downtown Needle Exchange is now providing counseling and testing for HIV and hepatitis B and C and hepatitis B vaccinations. The Public Health STD Clinic also offers these services to IDU clients. Unfortunately, since the end of the Kiwi Study HCV screening is less available in the jail health clinics that are the major IDU HIV testing sites in the Seattle area. The jail clinics only offer hepatitis B vaccinations to patients who have already started their vaccination series. Because a high proportion of IDU are frequently incarcerated, the jail health clinics are in a great position to provide much needed screening, prevention, and referral services to IDU in coordination with the Needle Exchange and STD programs and other community health and prevention programs.

We would like to thank Jim Harms and the staff at King County Department of Adult and Juvenile Detention, Mary Dirksen, Judith Bacungan and the staff at the Seattle and RJC Jail Health Services Program, the Kiwi Study staff, the Public Health Laboratory, and the Kiwi Study participants for their contributions to this study.

- *Contributed by Hanne Thiede, DVM, MPH and Richard Burt, PhD.*

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Table 1. Characteristics of Injection Drug Users in the King County Washington State Kiwi Study by Site of Booking, 1998-2002.

Characteristics	Total (n=1,811) %	Seattle jail (n=1,315) %	RJC jail (n=496) %
Gender			
Male	77	77	77
Female	23	23	23
Age (in years)			
18-30	31	28	37
31-40	39	38	41
> 40	30	34	22
Race/ethnicity			
White, not Hispanic	64	62	71
Black, not Hispanic	15	19	7
Hispanic	7	7	6
Am. Indian/AK Native	6	7	4
Other/multiracial	7	5	12
Type of residence^{1, 2}			
Own house/apartment	39	37	45
Someone else' house/apartment	31	30	34
Hotel/shelter	12	14	8
On the street	16	18	11
Education			
K – 11	26	25	31
High School graduate or GED	42	45	32
Some college or technical school	32	30	37
Employment status¹			
Employed part-time or full-time	32	29	39
Unemployed	68	71	61
Received public assistance			
Yes	26	28	21
No	74	72	79
Legal income in the last month¹			
No legal income	46	46	45
\$1 - \$1,000	35	37	29
≥ \$1,000	19	17	26
Total lifetime months incarcerated			
< 1 month	6	8	3
2 - 12 months	25	25	24
13 months - 5 years	39	37	43
> 5 years	30	30	29
Age first injected drugs (years)			
≤ 19	50	52	44
20 - 29	35	34	38
≥ 30	15	14	18

¹ Before most recent arrest.

² Some other rare categories are not shown.

Table 2. Sexual Orientation and Sexual Behaviors among King County Washington State Kiwi Study Participants 1998-2002.

Sexual orientation and behaviors	Total (n=1,811) %	Females (n=424) %	Males (n=1,387) %
Sexual orientation			
Heterosexual	89	76	93
Bisexual	9	21	5
Homosexual	2	3	2
Male-male sex			
Ever	NA	NA	12
Last 6 months	NA	NA	6
Number of sex partners¹			
Past year (8/98-8/01)			
0	10	8	11
1	27	24	29
2-5	38	30	40
>5	25	39	21
Past 6 months (9/01-12/02)			
0	14	11	15
1	36	36	37
2-5	35	34	35
>5	15	18	14
Condom use past 6 months			
Always	10	12	10
Sometimes	19	24	17
Never	53	47	56
No sex	17	17	17
Sex worker status			
Ever	22	55	12

¹ Data on the number of sex partners in the past year were collected 8/98-8/01 and data on the number sex partners in the past 6 months were collected 9/01-12/02.

Table 3. Drug Use and Drug Use Behaviors in the Past Year, Past 6 Months, and Past 30 Days among King County Washington State Kiwi Study Participants 1998-2002.

Drug use and drug use behaviors	Past Year		Past 6 months	
	Seattle jail (n=1,315)	RJC jail (n=496)	Seattle jail (n=1,257)	RJC jail (n=442)
	%	%	%	%
Any non-injected drug use				
Heroin	21	18		
Cocaine	27	31		
Crack	73	55		
Uppers/amphetamines	23	61		
Ecstasy	13	21		
Downers/barbiturates	28	33		
Hallucinogens/LSD	12	15		
Marijuana	65	75		
Any Drugs injected				
Heroin	83	48		
Speedball ¹	62	30		
Cocaine	62	45		
Amphetamine	34	72		
Drugs injected most often				
Heroin	59	27		
Speedball ¹	14	5		
Cocaine	12	10		
Amphetamine	15	58		
Number of injection partners				
0			6	2
1			17	10
2- 4			31	33
5-10			22	28
>10			23	27
Used equipment with someone else				
Injected w/used needles			61	72
Use someone's cooker			75	80
Backloaded			62	63
No. of different persons who used needle first				
0			38	27
1			33	35
2 - 5			23	32
> 5			4	4

¹Heroin and cocaine injected together.

Categories for some variables may not add up to 100% because less common categories are not shown.

Table 4. Sources of New Sterile Syringes in the Past 6 Months among King County Washington State Kiwi Study Participants 1998-2002.

Sources of new sterile syringes	Total (n=1,699) %	Seattle jail (n=1,257) %	RJC jail (n=442) %
Any source			
Needle exchange (exchanged personally)	64	74	33
Needle exchange (from someone else)	20	20	22
Pharmacy	47	43	59
Friend	38	38	40
Relative	4	4	6
Someone who sells needles	22	26	11
Diabetic	16	15	16
Sex partner	16	16	15
Drug dealer	18	17	19
Someone you sold drugs to	10	10	9
Primary source			
Needle exchange (exchanged personally)	50	61	20
Needle exchange (from someone else)	3	2	5
Pharmacy	23	16	43
Friend	9	8	12
Relative	<1	<1	1
Someone who sells needles	4	5	2
Diabetic	4	3	6
Sex partner	2	1	5
Drug dealer	3	2	3
Someone you sold drugs to	<1	<1	<1
Other	2	1	3

Table 5. HIV and HCV Prevalence and Health History among King County Washington State Kiwi Study Participants 1998-2002.

Serology results and health history	%Total n=1,811	% Females			% Males		
		Total (n=424)	Seattle jail (n=308)	RJC jail (n=116)	Total (n=1,387)	Seattle jail (n=1,007)	RJC jail (n=380)
HIV prevalence	3	2	2	1	3	3	1
Prior HIV testing	89	92	93	91	88	90	82
HCV prevalence ¹	65	74	79	66	62	73	45
Prior HCV diagnosis	39	49	51	44	36	39	28
Prior HBV diagnosis	17	21	21	20	15	17	9
HBV vaccination	17	24	23	26	15	15	17
Ever had STD	38	55	55	56	32	34	27

¹ HCV testing started in 11/2000.

Table 6. HIV and Hepatitis C Prevalence by MSM Status and by Primary Drug among King County Washington State Kiwi Study Participants 1998-2002. ^{1,2,3}

Primary drug injected in the past year	Non-MSM males		MSM	
	HIV%(n=1,192)	HCV % (n=857)	HIV % (n=137)	HCV % (n=170)
Total	2	61	9	65
Heroin	2	78	5	82
Speedball ⁴	2	84	0	100
Cocaine	1	60	5	60
Amphetamine	1	38	20	41

¹ HIV results were missing for 12 men.

² HCV testing started 11/2000.

³ Data on male-male sex were missing for 13 men.

⁴ Heroin and cocaine injected together.

Table 7. Travel and Unprotected Sex and Needle Sharing Activities in the Past Year among King County Washington State Kiwi Study Participants 1998-2002.

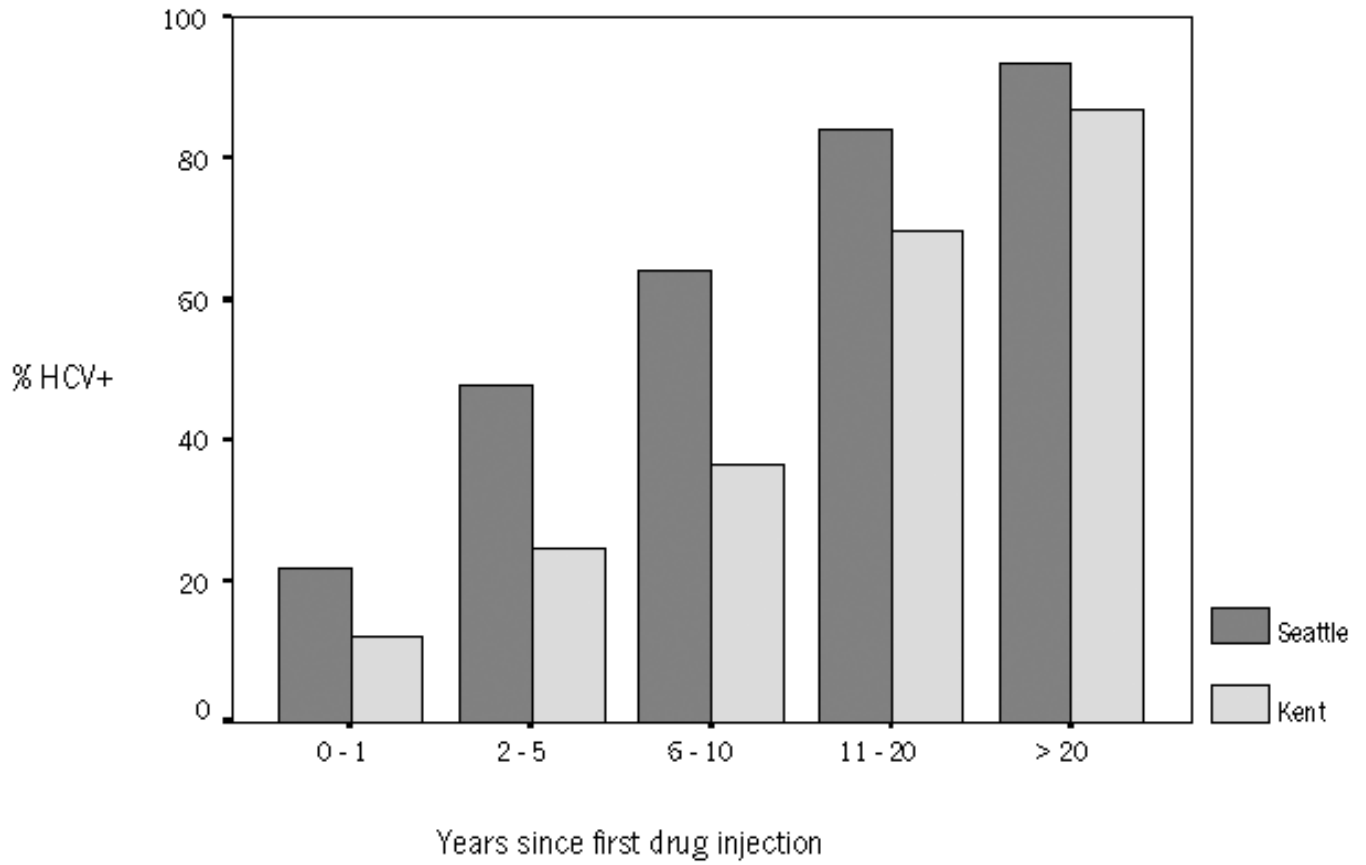
Travel activities	% (n=1,810)
Traveled out of Seattle-King County (KC)	51
Traveled out of KC, within WA State	31
Traveled out of WA State	27
Traveled to Vancouver, BC	3
 Injection and sexual activities during travels¹	
Injected with someone during travels	22
Injected with someone else's needles during travels	9
Unprotected sex with someone during travels	20
 Injection and sexual activities in KC with someone from another area²	
Injected with someone from another area	19
Injected with needles after someone from another area	5
Unprotected sex with someone from another area	5
 Injection and sexual activities with someone from Vancouver, BC³	
Injected with someone from Vancouver	2
Injected with needles after someone from Vancouver	<1
Unprotected sex with someone from Vancouver	<1

¹ Includes persons whom they met at travel destinations, not persons with whom they traveled.

² Includes persons from outside King County.

³ Activities could occur at any geographical location.

Figure 1. Hepatitis C Seroprevalence by Years Since First Drug Injection
King County, Washington State, Kiwi Study Participants 1998-2002



Adult AIDS Clinical Trials Unit: Extending a Hand Internationally

As the HIV epidemic continues to impact the global community, it has become clear that the field of HIV research needs to address international issues. For the Adult AIDS Clinical Trials Group (AACTG), the idea of expanding its therapeutic efforts internationally coincided with new research priorities of the National Institute of Allergy and Infectious Diseases (NIAID), our sponsor. The AACTG is developing an International Clinical Trials Program (ICTP), which is a collaboration between AACTG and HIV/AIDS researchers in resource-limited settings. Twelve international sites in eight countries on three different continents are involved in this program.

One goal of this ICTP is to assist NIAID's HIV Prevention Trials Network (HPTN) with the therapeutic aspects of an international prevention study. This study (HPTN 052) is designed to determine whether the use of potent antiretroviral treatment will reduce sexual transmission of HIV-1 infection between HIV-infected persons and their uninfected partners. Sites located in Brazil, India, Malawi, Thailand, and Zimbabwe will conduct this prevention study.

As the HPTN 052 study was planned, it became apparent that a companion treatment trial would be useful, since HIV infected persons will be identified in the course of screening for HPTN 052. That study requires participants be immune competent, with CD4 counts above 300 per mm³. In many resource-limited countries, people who fail eligibility for HPTN 052 because of a lower CD4 count may be unable to access antiretroviral therapy. As a result, the AACTG has developed a comparative study of different antiretroviral regimens for patients with low CD4 counts. Sites in Haiti, Peru, and South Africa will join the other international sites to conduct this study. Both studies are close to being finalized, and will hopefully be implemented by the end of 2003.

Each international site has been paired with a U.S. ACTU site to provide mentorship and help build infrastructure for conducting these studies. The University of Washington (UW) Adult ACTU has been paired with a research site in Lima, Peru called IMPACTA. IMPACTA is a community based HIV research organization. Collaboration between the UW and Peruvian investigators has been going on for twelve years and over 33 Peruvian investigators have trained at UW. IMPACTA has ongoing collaborations to conduct HIV prevention and vaccine studies with the UW and Fred Hutchinson Cancer Research Center investigators.

In Peru in 1999, an estimated 76,000 people were living with HIV infection, of whom 18,700 (25%) were women. Almost all reported HIV/AIDS in Peru has been acquired through sexual transmission—the majority by homosexual

transmission with a gradual increase in heterosexual transmission. Lima accounts for 70% of AIDS cases reported in Peru. Funds from the Peruvian social security system and two military hospitals provide antiretroviral treatment for a total of about 300 persons per year with AIDS in Lima. Money recently awarded from the Global AIDS Fund will expand this number, but the need for antiretrovirals far exceeds their availability.

The limited access to antiretroviral treatment in Peru underscores the need for a strong treatment research program to help optimize HIV/AIDS management and to complement the existing HIV prevention programs. Dr. Jorge Sanchez and his colleagues at IMPACTA have extensive training and experience in performing HIV surveillance, testing, and epidemiologic studies, but they have limited experience to date in HIV treatment and treatment research. The UW AACTU is helping expand their expertise in these areas.

In sum, the AACTG International Clinical Trials Program will extend the relationship between the UW ACTU and IMPACTA to encompass HIV treatment research. Knowledge about and treatment for HIV are essential, regardless of geographical location.

Following this article is a list of studies open for enrollment at the UW ACTU. Screening, lab tests and clinical monitoring that are part of a study are provided free of charge for participants. Enrollment in a study at the ACTU does not replace the role of a primary care provider. The ACTU coordinates efforts with each participant's primary care provider. **Providers and potential enrollees can call the ACTU at (206) 731-3184 and ask for Alyssa or Lori for appointments or additional information.**

Visit our new website at <http://depts.washington.edu/actu> and find out about our latest studies, meet our staff, and find out about our outreach and **Positivamente Latino** programs. You can send your questions, comments, and suggestions to us via email at actu@u.washington.edu.

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• *Contributed by N. Jeanne Conley, R.N.*

Studies currently open at the University of Washington Antiretroviral and other studies for HIV-infected participants. AIDS Clinical Trials Unit.

Antiretroviral Studies

Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> Viral Load (RNA) ≥ 1000 3 consecutive months of treatment with each class of anti-HIV drugs in the past 3 months on current treatment that includes at least one protease inhibitor (PI) No prior use of tipranavir 	<p>(Study # 1181) A safety and efficacy study of a new protease inhibitor, tipranavir (TPV) boosted with low-dose ritonavir.</p>	<p>TPV and RTV or One of the PI's listed below plus RTV PIs: LPV, APV, SQV, IDV</p>
<ul style="list-style-type: none"> ARV naive Planning to initiate ARV therapy Viral load $\geq 2,000$ No prior use of NNRTI's or 3TC 	<p>(Study # 5142) An open label study to compare three different regimens for the initial treatment of HIV</p>	<p>LPV/RTV plus EFV or LPV/RTV plus two NRTI's or EFV plus two NRTI's</p>
<ul style="list-style-type: none"> ARV naïve HIV RNA ≥ 2000 No severe medical condition or infection 	<p>(Study # 5073) Directly observed therapy</p>	<p>LPV/RTV plus FTC and D4T</p>
<ul style="list-style-type: none"> Planning to stop ARV's with MD approval CD4 >350 prior to starting ARV's CD4 >350 currently HIV RNA $<55,000$ Currently receiving at least two ARV's 	<p>(Study # 5170) To study immunological course in patients after stopping ARV therapy</p>	<p>No treatment provided</p>

Complications of HIV and Other Conditions

<p>Metabolic Complications</p> <ul style="list-style-type: none"> HIV RNA $<10,000$ Increased body fat On stable ARV regimen No prior use of anti-diabetic medications 	<p>(Study # 5082) Lowering blood insulin and body fat CMV</p>	<p>Metabolic Complications Metformin and/or Rosiglitazone vs Placebo</p>
<p>CMV</p> <ul style="list-style-type: none"> CMV antibody positive No hx of CMV end organ disease CD4 <100 HIV RNA >400 On HAART or not planning to start 	<p>(Study # 5030) To determine if treatment with valganciclovir is safe and effective in preventing CMV organ damage</p>	<p>Valganciclovir vs Placebo</p>
<p>HIV/Neurological Studies</p> <ul style="list-style-type: none"> Documented HIV-associated dementia No current mental illness On stable ARV therapy 	<p>(Study # 5090) To see if selegiline is safe and effective as a treatment for HIV dementia</p>	<p>Selegiline Transdermal System (STS) vs placebo</p>

Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> Starting or changing ARV therapy CD4 <200 and HIV RNA >2,000 or HIV RNA > 50,000 with any CD4 count 	<p>(Study # 736) HIV in the cerebrospinal fluid</p>	None (Requires lumbar punctures)
HCV and HBV		
<ul style="list-style-type: none"> HIV and HBV + HIV RNA \leq10,000 High HBV viral load No hepatitis C or hepatitis D On stable anti-HIV therapy No kidney problems in the last 12 months 	<p>(Study # 5127) Treatment of lamivudine resistant HBV Other Studies</p>	ADV plus TDF vs Placebo
Other Studies		
<ul style="list-style-type: none"> On EFV, NVP, NFV, or IDV/RTV and CD4>200 On no ARV's and CD4>350 HIV RNA <10,000 	<p>(Study # 5093) Looking at effects of ARV's on Depo-Provera</p>	Participants receive one injection of Depo-Provera
<ul style="list-style-type: none"> CD4>200 HIV RNA <500 at one time, and between 200 and 10,000 currently Taking ARVs for more than 4 months No severe medical condition or infection 	<p>(Study # 5115) Antiretroviral switching</p>	No treatment provided
<ul style="list-style-type: none"> HIV and CMV+ Not on treatment for CMV organ disease Have three semen studies that show CMV and HIV Been on anti-HIV therapy for at least 3 months No recent signs of or treatment for STDs 	<p>(Study # 905) HIV in semen</p>	Valganciclovir 900mg vs Placebo
<ul style="list-style-type: none"> Admission to a hospital for sepsis, pneumonia, AIDS-defining illness, low oxygen level in the blood, or other severe illness Limited use of ARVs CD4<350 No acute focal CNS deficit, meningitis, encephalitis, or other known CNS mass lesion 	<p>(Study # 5141) To determine if ARVs should be given to very ill HIV-infected patients in the hospital to determine if they will improve faster</p>	NFV + ZDV + 3TC + EFV Vs no treatment

Studies for HIV 'Negative' participants

<ul style="list-style-type: none"> No medical problems such as HIV, hepatitis C, asthma, high blood pressure, cancer, etc. Not using any medications Non-smokers Able to lie on table for up to 7 hours 	<p>(Study # 104) To develop a way to measure how drugs get into and out of the brain</p>	Radio-labeled verapamil Cyclosporine Radio-labeled water Carbon monoxide
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We worried about the HIV/AIDS prevention and care needs of reportedly increasing populations of African immigrants, potentially numbering over 20,000 in King County. HIV and AIDS surveillance data have shown that about 40% of Blacks recently reported (2000-2002) to be living locally with HIV and AIDS were born outside the US, mostly in African countries. And, HIV seroprevalence rates in sub-Saharan Africa countries are very high, suggesting the possibility that immigrants from that region may have acquired HIV infection there (See Tables 1 & 3). Thus, in 2002 we began a project to study Black immigrants.

Methods: The project included 5 stages: 1) We sought local estimates of the sizes of African Immigrant populations; 2) We reviewed estimated rates of HIV infection in the various sub-Saharan African nations; 3) We reviewed the details of the local HIV/AIDS surveillance data; 4) We sought other reports from our region and other urban areas which have tried to describe their African Immigrants, their risks for HIV/AIDS, and disease burden, knowledge levels, etc.; and 5) We designed an anonymous self-administered survey of African Immigrants to yield cross-sectional data. The survey consisted of 42 variables, including: age, sex, zip codes of residence, marital status, knowledge about HIV/AIDS, year of immigration to the US, sexual and other risk experiences in Africa, sexual risk experiences in the US, whether respondents would be willing to be tested for HIV, or whether they had tested for HIV (including when last tested and test results), and whether HIV-infected respondents were receiving care, and were aware that care and treatment was available to all locally. Several thousand legal-sized surveys were distributed in 5 languages (English, French, Swahili, Amharic, and Somali), designed to be folded, taped, and returned free with pre-paid mail. We used a snowball method to access populations through local organizations and groups of immigrants.

Findings

1) Population size estimates: According to the US census of 2000, the population of King County was 1,737,034. Of this number, 268,285 (15%) were born outside the US. Of these immigrants, 14,232 came from Africa, including 3,899 from Ethiopia, 5,392 from other Eastern African nations (primarily Somalia), 84 from Middle Africa, 909 from Southern African nations, and 1,521 from Western African nations. Thus, census data yielded estimates of 11,805 immigrants from sub-Saharan countries, and 8,800 may have immigrated since HIV began to spread. Discussions with local experts on immigrants and refugees estimated that about 60% of 150,000 African immigrants to the state live in King County, including 3-4,000 Somalians, 4-5,000 Ethiopi-

ans, 3-4,000 Eritreans, and 5,000 from other African countries.

2) Rates of HIV infection by African Country: UNAIDS estimates of HIV infection rates in highest prevalence Sub-Saharan African countries are shown in Table 1. Added columns estimate each country's population and the proportion of the region's population attributable to each country. As the table shows, the overall HIV seroprevalence for these countries with a total population of nearly 700 million persons is 3.6%, but some countries have very high rates while other countries have lower rates of infection.

3) King County HIV/AIDS surveillance data: Nearly a quarter (22%, or 188) of 862 Black persons cumulatively reported (since the start of the epidemic, including those deceased) with HIV and AIDS in King County were born in non-US countries. Of these 188 persons, 171 (91%) were born in Africa and over half (88, or 51%) of these were born in Ethiopia. The next largest groups were born in Kenya, Sudan, Ivory Coast, Somali Republic, and Tanzania. Another 21 countries were the home to 5 or fewer cases. Of 670 Blacks currently living with HIV/AIDS in King County a slightly larger share (171 or 26%) were born outside the US, and of these 63% are male and 37% female.

Male-male sex (52%) and injection drug use (19%) as risks for HIV acquisition was much more common in U.S.-born Blacks than among foreign-born Blacks (5.8% and 1% respectively). The main risk categories among foreign-born Blacks were heterosexual sex with someone with HIV (57%) and unknown risk (34%), i.e., no history of known high risk behavior such as injection drug use, male-male sex, or the receipt of blood products. Although surveillance data do not include when people born abroad moved to this country, these substantial risk differences suggest that many or most foreign-born Blacks may have acquired HIV prior to arriving in the US. The data also reflect limitations of using the CDC heterosexual HIV risk category definition which requires a known HIV-infection or known HIV risk of a heterosexual partner to classify an HIV infection as heterosexually-acquired.

Additionally, trends in the proportions cases of HIV/AIDS reported in the past 13 years show an increase in foreign-born Blacks in recent years. Until 1995 foreign-born Blacks accounted for only about 10% of Black cases. For the next 5 years the proportion of foreign-born cases varied from 20 to 40%, while in the past 3 years foreign-born cases have averaged about 40% of reported cases of HIV/AIDS. However, some (30) of these persons captured in the HIV/AIDS surveillance system came to King County as refugees known to have HIV infection. A program for HIV-infected refugees was

Table 1 Sub-Saharan African Countries, including populations, estimated number of HIV-infected persons, and HIV seroprevalence rates (12/2002 UNAIDS estimates). Only countries with HIV prevalence rates over 1% are shown.

COUNTRIES	Population	% Sub-Saharan Africa Population	# HIV+	HIV Prev.
Angola	10,366,031	1.5%	200,000	2.0%
Benin	6,590,782	1.0%	84,000	1.2%
Botswana	1,586,119	0.2%	350,000	22.0%
Burkina Faso	12,272,289	1.8%	420,000	3.4%
Burundi	6,223,897	0.9%	460,000	7.4%
Cameroon	15,803,220	2.3%	650,000	4.2%
Central African Republic	3,576,884	0.5%	280,000	7.8%
Chad	8,707,078	1.3%	120,000	1.3%
Congo (Zaire)	53,624,718	7.9%	1,500,000	5.1%
Cote D'Ivoire	16,393,221	2.4%	910,000	5.5%
Djibouti	460,700	0.1%	50,000	10.2%
Eritrea	4,298,269	0.6%	429,827	10.0%
Ethiopia	65,891,874	9.7%	3,800,000	5.7%
Gabon	1,221,175	0.2%	31,000	2.5%
Gambia, The	1,411,205	0.2%	17,000	1.2%
Ghana	19,894,014	2.9%	410,000	2.0%
Kenya	30,765,916	4.5%	2,500,000	8.1%
Lesotho	2,177,062	0.3%	330,000	15.1%
Liberia	3,225,837	0.5%	53,000	7.6%
Malawi	10,548,250	1.5%	960,000	9.1%
Mali	11,008,518	1.6%	140,000	1.2%
Mozambique	19,371,057	2.8%	1,500,000	7.7%
Namibia	1,797,677	0.3%	190,000	10.5%
Nigeria	126,635,626	18.5%	3,200,000	2.5%
Rwanda	7,312,756	1.1%	480,000	6.5%
Senegal	10,284,929	1.5%	95,000	1.0%
Sierra Leone	5,426,618	0.8%	92,000	1.6%
Somalia	7,488,773	1.1%	224,663	3.0%
South Africa	43,586,097	6.4%	5,100,000	11.7%
Sudan	36,080,373	5.3%	938,090	2.6%
Swaziland	1,104,343	0.2%	150,000	13.5%
Tanzania	36,232,074	5.3%	1,500,000	4.2%
Togo	5,153,088	0.8%	150,000	3.0%
Zambia	9,770,199	1.4%	1,000,000	10.2%
Zimbabwe	11,365,366	1.7%	1,800,000	16.0%
TOTAL	682,741,968	100.0%	31,105,231	3.6%

begun in the fall of 2000 and lasted until 9/11 of 2001, but has begun again in 2003. The International Rescue Committee of Seattle was the prime sponsor of this program, provided case-management services, and worked with the HIV/AIDS and TB, and immigrant screening programs of Public Health – Seattle & King County and with Harborview Medical Center’s Madison Clinic and other community partners to be sure care needs were met.

Data from the Adult/Adolescent Spectrum of HIV-related Diseases study, which monitors HIV and AIDS care and disease complications in local medical practices show that foreign-born Blacks are more likely than other Blacks to be diagnosed with HIV infection late, with CD4 cell counts often at lower levels, indicating a potentially dangerous delay in HIV testing and awareness of infection in this population.

4) **Other Reports & Studies:** Various sources have commented on very high levels of HIV/AIDS stigma in African immigrants (e.g., a verbal report from a case manager at Harborview Madison Clinic and an article in the *Boston Globe*) and attributed some of the HIV fear to the association of HIV/AIDS to illicit sex and some to the fear that HIV-infected immigrants might be returned to Africa.

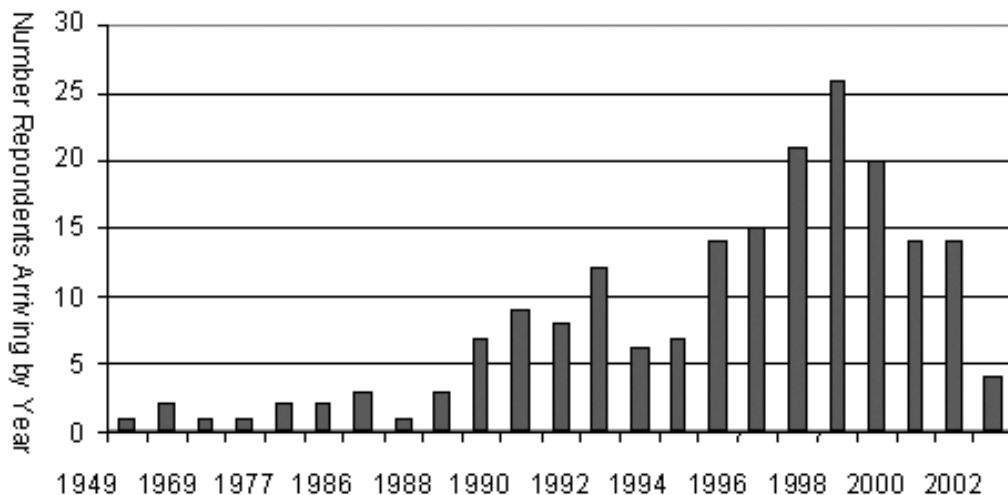
After searching for information from other U.S. regions, we have only been able to find substantial investigation of African immigrant populations done in Minnesota. Surveillance

data from that state show a gradual rise in HIV/AIDS cases in Black African immigrants, beginning about 1994, to about 60 (38%) of 160 Black cases in that state in the years 2000 and 2001. Their African-born male immigrants outnumbered females by 54% to 46%. As of 2001 of 213 foreign-born Black HIV/AIDS cases, 42% had progressed to and AIDS diagnosis.

5) **Survey results:** Our survey yielded responses from 203 individuals. Most (58%) were male and respondents’ ages ranged from 17 to 64 (mean 38). Over half (51%) were single; 28% were married; and 20% previously married. Most immigrants (74%) responded that they are here (in the US) with other family members (including 59 with a spouse, 85 with children, 26 with parents, and 71 with other family members).

At least 10 respondents indicated they were born in each of the following countries: Somalia, Ethiopia, Tanzania, Nigeria, Ghana, Cote D’Ivoire, Kenya, and Eritrea. Current zip code data showed some clustering of respondents, this may be helpful for outreach efforts. Respondents reported that they have been in the US from 1 to 54 (mean 8.3) years. Most respondents, however, have arrived in recent years; only about 5% have been here over 20 years, before HIV became prevalent. Most of these individuals came here after 1990, and especially after 1996 (see Figure 1).

Figure 1 Years when Respondents Came to US



Risks for HIV: Nearly all (93%) reported having sex with persons in Africa before coming here (their average number of sex partners reported was 15). Only 5% reported using condoms consistently and 52% never used condoms with African partners. Other reported risks of respondents while still in Africa included: receiving a blood transfusion (41%), receiving injections with possibly used needles (81%), and a history of surgery (44%). Also, of 156 (77%) respondents who reported having sex after coming to the US, 118 of these persons (76%) had sex partners who had lived in Africa.

HIV Testing, Infection, and Care. Only 72 (35%) of respondents had ever tested for HIV (an average of 6 years ago), and 11 (15% of those tested) reported that they were HIV-seropositive. Of the 11 HIV seropositive respondents, 10 believe they got infected in Africa, and **only 4 (36% of the 11) reported that they are getting HIV/AIDS care.** Of the 203 respondents, 142 (70%) of the respondents indicated willingness to be tested if testing were free and easy.

Knowledge about HIV/AIDS. About one in 6 (16%) knew “lots” about HIV/AIDS; 145 (71%) knew “a little”; and 22 (11%) knew “nothing”. Table 2 shows the percents of respondents who answered “yes” to a series of 12 questions.

Estimating Possible HIV-infected Immigrants: Applying the overall 3.6% prevalence to the 15,000 census estimate of local immigrants from Africa since HIV began spreading yields an estimate of 540 possible persons with HIV infection who were born in Africa. But, census data may have incompletely captured immigrants from African and elsewhere, so these numbers may be considered minimal estimates.

If, instead of relying on the 2000 census (with an estimate of 14,232), we adopt local service agency estimates of at least 20,000 for the number of local African immigrants and other estimates for numbers of Somalians, Ethiopians, and Eritreans as shown in table 3, and then apply HIV prevalence estimates from UN AIDS, there could be over 1200 immigrants in King County currently living with HIV or AIDS. These estimates, however, may be high, since many respondents came to this country some years ago, when the HIV rates in their countries of origin would have been lower than the current estimates used in Table 1. On the other hand, estimates may be low, since most of these immigrants report having had sex with other Africans since arriving in the US, and perhaps their partners more recently immigrated.

Table 2: Number (%) of 203 respondents who answered the following questions “yes” (shaded cells are false statements). H/A stands for HIV/AIDS

HIV/AIDS does not exist (was made up to combat sex immorality)	7 (3%)	FALSE
HIV/AIDS can be cured by having sex with a virgin	30 (15%)	
HIV/AIDS exists but does not kill	33 (16%)	
HIV is a government-made virus spread to kill Africans & others	59 (29%)	
HIV/AIDS can definitely be cured so no life-long treatment is needed	34 (17%)	
HIV can be spread by holding hands, kissing, and sharing eating utensils	32 (16%)	
HIV/AIDS is a curse caused by evil spirits or witches	29 (14%)	
HIV can be spread my mosquitoes	59 (29%)	TRUE
HIV can be spread from a mother to baby by breast feeding	68 (33%)	
HIV/AIDS cannot be cured but is treatable with expensive, lifelong meds	109 (54%)	
HIV/AIDS is a fatal disease transmitted mostly by unprotected sex	141 (69%)	
HIV can be spread by blood (transfusions and shared needles)	156 (77%)	

Only 46 (23%) of the respondents were aware that anyone with HIV or AIDS could get free care and treatment for HIV here in King County.

Table 3 Possible Number of HIV-infected persons in King County (based on 2002 HIV-infection rates and proportions of respondents from Survey)

NATIVE COUNTRIES	% HIV+ in Native Country	Best Guess based on a total of 20,000	Estimated Number of persons with HIV
Botswana	22.0%	0	0
Burkina Faso	3.4%	600	20
Cote D'Ivoire	5.5%	1280	70
Eritrea	10.0%	3500	350
Ethiopia	5.7%	4400	251
Ghana	2.0%	1380	28
Kenya	8.1%	1080	87
Nigeria	2.5%	1580	40
Somalia	3.0%	3500	105
Sudan	2.6%	600	16
Swaziland	13.5%	1780	240
Zimbabwe	16.0%	300	48
TOTAL	3.6%	20,000	1255

Conclusions: This project has added to concerns about HIV/AIDS for local populations of African immigrants. Among those reportedly tested, HIV sero-prevalence rates are already high (15%), but more than half of the respondents haven't been tested (and these survey respondents may be the best acculturated of all immigrants). In addition, many respondents came to the US in recent years and cite sexual and other significant risks for acquiring HIV both in Africa and after arriving here in the US. Thus, many immigrants (perhaps more than 1,000) may be infected and not know it. Finally, among survey respondents aware of their HIV infection, only 4 in 11 report that they are receiving care.

Of further concern are high levels of incorrect information among survey respondents. While 70-75% understand that HIV is a serious disease transmitted mostly by sex and unsterile injection equipment, substantial proportions believe HIV can be spread casually, by mosquitoes, that it results from witchcraft, can be cured so that life-long treatment is not needed, and that it can be cured by sex with a virgin. In addition, reports suggest that stigma surrounding these conditions among those born in African may be even higher than among American-born Blacks, where stigma is already considerable. Clearly more education, testing and care services are needed. Fortunately, the survey shows that many would be willing to test if testing were free and easy.

Suggestions for Interventions:

- HIV case-finding is very important, through culturally sensitive HIV counseling and testing. However, the many cultures involved will make this (and the next) task difficult.
- Education about HIV/AIDS is important with such high levels of misinformation, as demonstrated in the survey. Education could be accomplished in three ways:
 1. Development of materials written in at least the 5 languages needed for the survey (French, Swahili, Amharic, Eritrean, and English),
 2. Use of trained outreach workers, ideally from the communities themselves, who could do one-on-one education with people reached, and
 3. Group educational sessions by country of origin, again using indigenous trained educators, if possible.
- Prevention and Outreach Training for HIV-infected persons. We suggest that attempts be made to recruit some of the African immigrants currently in treatment for HIV – to help locate their compatriots for access, education, and reassurance about the availability and confidentiality of HIV counseling and testing and HIV/AIDS care.

• *Contributed by Drs. Robert Wood and Das Eteni*

Current Washington State Department of Health and Public Health — Seattle & King County HIV/AIDS Epidemiology Studies

The Washington State Department of Health (DOH) Reproductive and Infectious Disease Assessment Unit and Public Health — Seattle & King County (PHSKC) HIV/AIDS Epidemiology Program have a very active group of research and surveillance programs. Here is a brief summary of current studies and projects. For more information on any of the studies, call the main contact person listed below.

HIV/AIDS Surveillance

Core HIV Surveillance. Maria Courogen, DOH (360) 236-3458; Jim Kent, PHSKC (206) 296-4645. Core HIV/AIDS Surveillance, ongoing CDC-funded surveillance since 1985, collects data on every person diagnosed with HIV infection and/or AIDS in Washington State. These data are interpreted and presented in a variety of formats: surveillance reports, state and regional epidemiologic profiles, articles, and oral presentations to state and regional HIV prevention planning groups, Ryan White consortia, the Governor's Advisory Council on HIV/AIDS, and others.

HIV Incidence Surveillance. Susan Buskin, PHSKC (206) 296-4645. This CDC-funded surveillance project is being conducted in five US sites including Seattle-King County. The goal is to develop and test methods for on-going, population-based monitoring of the incidence of new HIV infections using the Serological Testing Algorithm for Recent HIV Seroconversion (STARHS). CDC plans to use information from the pilot sites to develop a national system.

ARVDRT Antiretroviral Drug Resistance Testing (Aardvark). Susan Buskin, PHSKC. ARVDRT Surveillance is a CDC-funded project to establish on-going monitoring of the prevalence of transmission of drug-resistant strains of HIV, identify the types of drug resistance, and determine HIV subtypes. The project will also test the feasibility of conducting ARVDRT surveillance throughout the US by using blood specimens left over from diagnostic testing for HIV infection

HIVIS: HIV Incidence Study. Gary Goldbaum, PHSKC (206) 296-4991 HIVIS uses STARHS to identify persons who have recently become HIV infected, within six or 12 months. STARHS enables us to better estimate HIV incidence for planning purposes. This project started in 1998 and will continue until the HIV Incidence Surveillance activity starts in 2004.

Unlinked STD Clinic Survey. Hanne Thiede, PHSKC (206) 296-8663. This is an annual unlinked anonymous HIV seroprevalence and incidence survey conducted in the

PHSKC sexually transmitted disease (STD) clinic to assess HIV prevalence, incidence, HIV testing history and sexual behaviors. Left over blood specimens collected for clinical purposes are tested for HIV antibodies and linked via an anonymous code to data collected from patient records.

Electronic laboratory Reporting. Jim Kent, PHSKC. Although this project is no longer funded, we continue to develop an electronic process to replace the current paper-based laboratory reporting system. In 2002, we converted five of the six King County labs from paper-based to electronic files and implemented digital certificate-based secure transfer of confidential HIV data from DOH/Olympia to PHSKC. During 2003 we plan to implement secure electronic file transfer directly from laboratories to PHSKC to DOH.

STUDIES WITH SPECIFIC POPULATIONS

HIV-infected People

SHAS: Supplement to HIV/AIDS Surveillance. Alexia Exarchos, DOH (253) 395-6730. SHAS is a CDC-funded multi-site project that has been conducted in Washington State since 1991. Data are collected via in-person interviews from persons from all over the state who have been reported with HIV or AIDS. These data include demographic and socioeconomic characteristics, drug-use and sexual behaviors, reproductive/gynecological history, HIV testing and medical history, and health and social services.

ASD: Adult/Adolescent Spectrum of HIV-related Diseases. Susan Buskin, PHSKC. ASD is a multi-site CDC funded project to review medical records and collect information on HIV-related treatments, illnesses, laboratory values, and mortality. Cumulatively over 4,400 persons have been followed by ASD since 1990, with 1,200 - 1,400 under observation at any given time.

SHDC: Survey of HIV Disease and Care. Susan Buskin, PHSKC. Survey of HIV Disease and Care is a population-based expanded surveillance initiative funded by CDC to look at HIV-related treatments, illnesses, laboratory values, and mortality. Data are collected by medical record review at randomly selected providers who have reported patients with HIV/AIDS.

People of Color

HITS: HIV Testing Survey in Communities of Color and Central/Eastern Washington. Amy Manchester Harris, DOH (360) 236-3417. In this CDC-funded study, information is collected about HIV-related risk behaviors, testing behaviors, knowledge and attitudes from populations at high risk for HIV infection. In 2002, the study was conducted at gay bars, needle exchanges, and STD clinics in Tacoma, Yakima, and Benton counties. In 2003, the study is being conducted in Tacoma and Spokane.

HITS API: HIV Testing Survey among Asians and Pacific Islanders. Susan Buskin, PHSKC. The HITS-API was one of five alternative HITS projects conducted in the US. The study conducted interviews with Asian Pacific Islanders about their HIV testing experiences and attitudes about HIV. Recruitment ended 6/30/03.

Men who have sex with men

SAMS: Seattle Area MSM Study. Hanne Thiede, PHSKC. The SAMS study looks at HIV transmission among using Audio-Computer Assisted Self-Interview (ACASI) qualitative interviews and the efficacy of peer referral as a tool for identifying positive men who do not know that they are HIV positive. The study is collaborating closely with the PHSKC HIV/AIDS, STD, and One-on-One programs on recruitment for this study. The study will continue through September, 2004.

Injection Drug Users

Kiwi. Hanne Thiede, PHSKC. The KIWI study, an HIV incidence and prevalence survey funded by CDC, collected data on HIV, HCV and sexual and injection risk behaviors among 1811 injection drug users who were booked into the King County correctional facilities between August 1998 and December 2002. The study is currently in the data analysis and report writing phase.

SPIN. Peggy Peterson, PHSKC (206) 296-8665. The SPIN study is a NIDA funded prospective study to measure the risk of HCV seroconversion associated with specific injection risk behaviors and to examine the extent to which HCV prevention education at the Seattle needle exchange program has reduced the risk of HCV infection. The study will also assess the feasibility and disease control benefits of HBV and HCV partner notification for injection drug users (IDUs) and to study whether changes in hepatitis C reporting laws are associated with increased reporting of hepatitis in IDUs. Recruitment has just begun and the study will continue through March, 2007.

Behavioral Surveillance. Hanne Thiede, PHSKC. The purpose of this CDC funded program is to (1) develop an ongoing National Behavioral Surveillance (NBS) surveillance system to ascertain the prevalence of, and trends in, HIV risk

behaviors among MSM and IDUs for use in developing and directing national prevention services and programs; and (2) evaluate the impact of a variety of prevention efforts. 20 sites in major urban areas most affected by HIV/AIDS have been selected. This PHSKC study will begin summer of 2004 and will focus on IDUs in the first year.

Intervention Trials to Reduce HIV and Hepatitis C Risk Behaviors

Currently two randomized controlled trials are underway to assess the usefulness of group behavioral interventions to reduce HCV transmission among younger IDUs, DUIT and Strive. The interventions for both studies involve six-2 hour group sessions conducted over 3 weeks. Participants complete computerized self-administered interviews at their baseline visit prior to the intervention and at follow-up visits 3 and 6 months after the intervention. In addition to the interventions, participants receive counseling and testing for HIV and hepatitis A, B, and C and are offered referral for hepatitis A and B vaccinations.

DUIT: Drug Users Intervention Trial. Hanne Thiede, PHSKC. The DUIT Study is a multi-site CDC funded study. The PHSKC site is enrolling about 300 injection drugs users between the ages of 15 and 30 who are HCV negative. Participants are recruited at different sites in the community and via referral by study participants. The study will continue through September 2004.

Strive. Jennifer Campbell, PHSKC (206) 296-7879. The study is funded by NIDA to reduce risk for HCV transmission and to increase access to HCV treatment among injection drug users that test positive for HCV. The Strive study is enrolling about 250 participants between the ages of 18 and 35. Participants are referred from the DUIT and Spin studies. The study will continue through August 2005.

Evaluation Studies

PACE: Pharmacy Access Campaign Evaluation. Gary Goldbaum, PHSKC. PACE (Pharmacy Access Campaign Evaluation) evaluates how easily injection drug users can purchase sterile syringes over-the-counter and what effect that has on where used sharps are discarded. This evaluation was spurred by recent changes in Washington State law that permits pharmacies to sell syringes for the purpose of decreasing disease transmission and PHSKC efforts to persuade local pharmacies to sell syringes on demand. The project includes surveys of pharmacists, test buys at pharmacies, surveys of streets and parks for discarded syringes, and placing 24-hour sharps drop boxes around the county.

Evaluation of HIV Surveillance. Maria Courogen, DOH; Jim Kent, PHSKC. This is a CDC-funded, three-year project (October, 2001- September, 2004) to evaluate the perfor-

mance of the HIV surveillance system in Washington State and to contribute to an Institute of Medicine study to evaluate 10 sites nationally. Protocols have been developed to measure completeness of reporting, ascertainment of risk behavior, follow-up of cases of public health importance, internal duplication, inter-state duplication, and timeliness, and these protocols will be followed after the project ends to monitor the performance of the system.

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- *Compiled by Peggy Peterson, Ph.D., MPH*

