

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

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

Alternative formats provided upon request. To be included on the mailing list or to request address corrections, please call (206) 296-4645.

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Credits

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Detailed requirements for reporting of communicable disease including HIV/AIDS are described in the Washington Administrative Code

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HIV/AIDS Reporting Requirements

(WAC), section 246-101, online <http://apps.leg.wa.gov/WAC/default.aspx?cite=246-101>

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

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

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

Table 1: Surveillance of reported¹ HIV/AIDS cases, deaths, and people living with HIV/AIDS—reported as of 12/31/2007—King County, other Washington counties, all Washington state, and U.S.

		Adult/Adolescent HIV AIDS ²		Pediatric ³ HIV or AIDS	Total
King County	New cases reported in 2nd half 2007	158	113	0	271
	Cases reported year-to-date	303	233	0	536
	Cumulative Cases	2,942	7,667	33	10,642
	Cumulative Deaths	123	4,190	9	4,322
	Persons Living (prevalent cases)	2,819	3,477	24	6,320
Other Counties	New cases reported in 2nd half 2007	119	82	2	203
	Cases reported year-to-date	247	178	3	428
	Cumulative Cases	1,635	4,378	41	6,054
	Cumulative Deaths	88	2,215	12	2,315
	Persons Living (prevalent cases)	1,547	2,163	29	3,739
Washington State	New cases reported in 2nd half 2007	277	195	2	474
	Cases reported year-to-date	550	411	3	964
	Cumulative Cases	4,577	12,045	74	16,696
	Cumulative Deaths	211	6,405	21	6,637
	Persons Living (prevalent cases)	4,366	5,640	53	10,059
United States⁴	Estimated Cases as of 12/31/2006				
	Cumulative Cases	287,954	1,014,797	458	1,302,751
	Cumulative Deaths	3,041	565,927	432	568,968
	Persons Living (prevalent cases)	284,913	448,870	9,026	733,783

1. An estimated 11,000 to 12,000 people live in Washington with HIV infection including AIDS. These include the 10,059 prevalent cases reported above. In King County, there are an estimated 7,200 to 7,800 people living with HIV infection including AIDS. These include the 6,320 prevalent cases reported above. The difference between the estimated cases and the reported prevalent cases include three groups:
 - a. People diagnosed with AIDS but not yet reported (probably fewer than 5% of total AIDS reports).
 - b. People diagnosed with HIV infection but not yet reported.
 - c. An unknown number of people (estimated to be 10-20% of the total HIV estimate) infected with HIV but not yet diagnosed.
2. New AIDS counts include cases previously reported as HIV without AIDS.
3. Pediatric cases are under age 13 at the time of diagnosis with HIV or AIDS.
4. U.S. data for people with HIV infection not AIDS are based upon reports from states and areas with confidential, named-based HIV infection reporting. Washington is not included in those counts at this time.

Table 2: Cumulative HIV/AIDS case counts and deaths by resident county and AIDSNet region at diagnosis—reported as of 12/31/2007—Washington state

	Cumulative Cases	Deaths		Presumed Living			
		No.	(%) ¹	HIV	AIDS	Total	(Total %) ²
Adams	6	1	(17)	1	4	5	(0.0)
Asotin	21	7	(33)	3	11	14	(0.1)
Columbia	6	4	(67)	1	1	2	(0.0)
Ferry	8	6	(75)	1	1	2	(0.0)
Garfield	1	0	(0)	1	0	1	(0.0)
Lincoln	4	2	(50)	0	2	2	(0.0)
Okanogan	34	9	(26)	8	17	25	(0.2)
Pend Orielle	9	6	(67)	0	3	3	(0.0)
Spokane	684	295	(43)	160	229	389	(3.9)
Stevens	26	12	(46)	7	7	14	(0.1)
Walla Walla	60	29	(48)	6	25	31	(0.3)
Whitman	18	4	(22)	3	11	14	(0.1)
Region 1 Subtotal	877	375	(43)	191	311	502	(5.0)
Benton	122	39	(32)	33	50	83	(0.8)
Chelan	63	25	(40)	17	21	38	(0.4)
Douglas	5	2	(40)	2	1	3	(0.0)
Franklin	71	18	(25)	20	33	53	(0.5)
Grant	47	21	(45)	9	17	26	(0.3)
Kittitas	25	10	(40)	5	10	15	(0.1)
Klickitat	16	6	(38)	7	3	10	(0.1)
Yakima	235	83	(35)	58	94	152	(1.5)
Region 2 Subtotal	584	204	(35)	151	229	380	(3.8)
Island	78	34	(44)	16	28	44	(0.4)
San Juan	25	11	(44)	6	8	14	(0.1)
Skagit	93	39	(42)	24	30	54	(0.5)
Snohomish	960	337	(35)	244	379	623	(6.2)
Whatcom	220	85	(39)	57	78	135	(1.3)
Region 3 Subtotal	1,376	506	(37)	347	523	870	(8.6)
Region 4 King	10,642	4,322	(41)	2,838	3,482	6,320	(62.8)
Kitsap	303	121	(40)	77	105	182	(1.8)
Pierce	1,494	600	(40)	421	473	894	(8.9)
Region 5 Subtotal	1,797	721	(40)	498	578	1,076	(10.7)
Clallam	79	34	(43)	21	24	45	(0.4)
Clark	633	219	(35)	189	225	414	(4.1)
Cowlitz	137	55	(40)	39	43	82	(0.8)
Grays Harbor	80	33	(41)	16	31	47	(0.5)
Jefferson	38	17	(45)	11	10	21	(0.2)
Lewis	54	26	(48)	10	18	28	(0.3)
Mason	105	24	(23)	23	58	81	(0.8)
Pacific	31	12	(39)	12	7	19	(0.2)
Skamania	7	5	(71)	0	2	2	(0.0)
Thurston	253	84	(33)	59	110	169	(1.7)
Wahkiakum	3	0	(0)	1	2	3	(0.0)
Region 6 Subtotal	1,420	509	(36)	381	530	911	(9.1)
Total	16,696	6,637	(40)	4,406	5,653	10,059	(100.0)

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

Table 3: Demographic characteristics of people presumed living with HIV/AIDS—reported as of 12/31/2007—King County, other Washington counties, all Washington state, and U.S.

	King County		Other Counties		Washington State		Estimated U.S.AIDS ¹	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Sex								
Male	5,698	(90)	3,004	(80)	8,702	(87)	335,135	(77)
Female	622	(10)	735	(20)	1,357	(13)	101,558	(23)
Age Group at HIV Diagnosis								
Under 13	26	(0)	35	(1)	61	(1)	3,775	(1)
13-19	118	(2)	109	(3)	227	(2)	<i>not available</i>	
20-29	1,836	(29)	1,101	(29)	2,937	(29)	<i>not available</i>	
30-39	2,708	(43)	1,353	(36)	4,061	(40)	<i>not available</i>	
40-49	1,274	(20)	822	(22)	2,096	(21)	<i>not available</i>	
50-59	301	(5)	258	(7)	559	(6)	<i>not available</i>	
60 and over	57	(1)	61	(2)	118	(1)	<i>not available</i>	
Current Age as of 12/31/2006								
Under 13	7	(0)	10	(0)	17	(0)	1,115	(0)
13-19	18	(0)	28	(1)	46	(0)	3,198	(1)
20-29	353	(6)	269	(7)	622	(6)	19,726	(5)
30-39	1,439	(23)	835	(22)	2,274	(23)	88,473	(20)
40-49	2,661	(42)	1,467	(39)	4,128	(41)	185,950	(43)
50-59	1,423	(23)	837	(22)	2,260	(22)	105,490	(24)
60 and over	419	(7)	293	(8)	712	(7)	32,741	(7)
Race/Ethnicity²								
White	4,362	(69)	2,695	(72)	7,057	(70)	154,495	(35)
Black	1,030	(16)	446	(12)	1,476	(15)	191,590	(44)
Hispanic	596	(9)	386	(10)	982	(10)	80,815	(19)
Asian & Pacific Islander	183	(3)	103	(3)	286	(3)	4,526	(1)
<i>Asian</i>	172	(3)	56	(1)	228	(2)	<i>not available</i>	
<i>Native Hawaiian & Other PI</i>	11	(0)	17	(0)	28	(0)	<i>not available</i>	
Native American or Alaskan Native	85	(1)	84	(2)	169	(2)	1,651	(0)
Multiple Race	52	(1)	8	(0)	60	(1)	N/A	
Unknown Race	12	(0)	17	(0)	29	(0)	3,616	(1)
HIV Exposure Category								
Male-male sex	4,381	(69)	1,835	(49)	6,216	(62)	199,693	(46)
Injection drug use (IDU)	355	(6)	508	(14)	863	(9)	94,573	(22)
IDU & male-male sex	550	(9)	308	(8)	858	(9)	27,523	(6)
Heterosexual contact	461	(7)	571	(15)	1,032	(10)	104,635	(24)
Blood product exposure	36	(1)	42	(1)	78	(1)	<i>not available</i>	
Perinatal exposure	19	(0)	29	(1)	48	(0)	3,660	(1)
Undetermined/other ³	518	(8)	446	(12)	964	(10)	6,609	(2)
Total	6,320	(100)	3,739	(100)	10,059	(100)	436,693	(100)

1. U.S. AIDS data for 50 states and Washington, D.C. only were reported as of 12/31/2006; detailed summaries of 287,954 living HIV cases reported from states and areas with confidential name-based HIV infection reporting were not readily available. Hemophilia and blood product numbers are included in the 'Undetermined / other' category.
2. All race categories are mutually exclusive and are non-Hispanic. A few Asian & Pacific Islander cases cannot be readily assigned into either Asian, or Native Hawaiian & Other Pacific Islander and are included only in the total.
3. Includes cases with incomplete information, and sexual exposures where the heterosexual partner is not known to be HIV+, IDU, or a bisexual male. One case was probably infected via occupational exposure.

Table 4: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category—reported as of 12/31/2007—King County

HIV Exposure Category	White ¹		Black ¹		Hispanic		Asian & PI ^{1,2}		Native Am/AN ^{1,3}		Total ⁴	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male												
Male-male sex	3,415	(78)	368	(36)	403	(68)	123	(67)	32	(38)	4,381	(69)
Injection drug use (IDU)	117	(3)	71	(7)	31	(5)	5	(3)	6	(7)	232	(4)
IDU & male-male sex	435	(10)	42	(4)	40	(7)	5	(3)	16	(19)	550	(9)
Heterosexual contact	46	(1)	101	(10)	23	(4)	5	(3)	1	(1)	176	(3)
Blood product exposure	16	(0)	3	(0)	2	(0)	1	(1)	0	(0)	22	(0)
Perinatal exposure	1	(0)	4	(0)	0	(0)	1	(1)	0	(0)	6	(0)
Undetermined/other	101	(2)	146	(14)	52	(9)	23	(13)	4	(5)	331	(5)
Male Subtotal	4,131	(95)	735	(71)	551	(92)	163	(89)	59	(69)	5,698	(90)
Female												
Injection drug use	63	(1)	39	(4)	4	(1)	1	(1)	15	(18)	123	(2)
Heterosexual contact	121	(3)	123	(12)	23	(4)	8	(4)	7	(8)	285	(5)
Blood product exposure	4	(0)	8	(1)	2	(0)	0	(0)	0	(0)	14	(0)
Perinatal exposure	3	(0)	7	(1)	2	(0)	1	(1)	0	(0)	13	(0)
Undetermined/other	40	(1)	118	(11)	14	(2)	10	(5)	4	(5)	187	(3)
Female Subtotal	231	(5)	295	(29)	45	(8)	20	(11)	26	(31)	622	(10)
Total	4,362	(69)	1,030	(16)	596	(9)	183	(3)	85	(1)	6,320	(100)

Table 5: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category—reported as of 12/31/2007—Washington state

HIV Exposure Category	White ¹		Black ¹		Hispanic		Asian & PI ^{1,2}		Native Am/AN ^{1,3}		Total ⁴	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male												
Male-male sex	4,887	(69)	497	(34)	555	(57)	167	(58)	56	(33)	6,216	(62)
Injection drug use (IDU)	366	(5)	111	(8)	65	(7)	8	(3)	16	(9)	569	(6)
IDU & male-male sex	688	(10)	63	(4)	60	(6)	7	(2)	25	(15)	858	(9)
Heterosexual contact	127	(2)	148	(10)	57	(6)	14	(5)	7	(4)	354	(4)
Blood product exposure	42	(1)	3	(0)	7	(1)	1	(0)	0	(0)	53	(1)
Perinatal exposure	7	(0)	10	(1)	2	(0)	2	(1)	1	(1)	22	(0)
Undetermined/other	289	(4)	193	(13)	104	(11)	31	(11)	5	(3)	630	(6)
Male Subtotal	6,406	(91)	1,025	(69)	850	(87)	230	(80)	110	(65)	8,702	(87)
Female												
Injection drug use (IDU)	180	(3)	68	(5)	13	(1)	4	(1)	28	(17)	294	(3)
Heterosexual contact	334	(5)	205	(14)	84	(9)	28	(10)	23	(14)	678	(7)
Blood product exposure	7	(0)	12	(1)	3	(0)	3	(1)	0	(0)	25	(0)
Perinatal exposure	10	(0)	10	(1)	4	(0)	2	(1)	0	(0)	26	(0)
Undetermined/other	120	(2)	156	(11)	28	(3)	19	(7)	8	(5)	334	(3)
Female Subtotal	651	(9)	451	(31)	132	(13)	56	(20)	59	(35)	1,357	(13)
Total	7,057	(70)	1,476	(15)	982	(10)	286	(3)	169	(2)	10,059	(100)

1. And not Hispanic. All race and ethnicity categories are mutually exclusive.
2. Due to small cell sizes, data have been combined for Asians, Native Hawaiians, and other Pacific Islanders.
3. Native American or Alaskan Native.
4. Totals include 52 King County and 60 Washington state people classified in multiple race, and 12 King County and 29 Washington state people with missing race.

Table 6: People presumed living with HIV/AIDS by gender and age at HIV diagnosis—reported as of 12/31/2007—King County and Washington state

Age at HIV Diagnosis	King County				Washington State			
	Male		Female		Male		Female	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Under 13 years	11	(0)	15	(2)	29	(0)	32	(2)
13-19 years	83	(1)	35	(6)	149	(2)	78	(6)
20-29 years	1,623	(28)	213	(34)	2,480	(28)	457	(34)
30-39 years	2,500	(44)	208	(33)	3,623	(42)	438	(32)
40-49 years	1,182	(21)	92	(15)	1,858	(21)	238	(18)
50-59 years	250	(4)	51	(8)	462	(5)	97	(7)
60 years and over	49	(1)	8	(1)	101	(1)	17	(1)
Total	5,698	(100)	622	(100)	8,702	(100)	1,357	(100)

Table 7: People presumed living with HIV/AIDS by gender, race or ethnicity, and place of birth¹—reported as of 12/31/2007—King County and Washington state

Race / Ethnicity	King County				Washington State			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
White, non-Hispanic	4,071	(98)	100	(2)	6,605	(98)	146	(2)
Black, non-Hispanic	656	(66)	342	(34)	1,003	(70)	428	(30)
<i>Male black, non-Hispanic</i>	525		184		770		219	
<i>Female black, non-Hispanic</i>	131		158		233		209	
Hispanic	234	(43)	309	(57)	363	(41)	525	(59)
Asian & PI, non-Hispanic	53	(31)	117	(69)	89	(34)	174	(66)
Native American, non-Hispanic	77	(94)	5	(6)	160	(96)	6	(4)
Multiple or unknown race, non-Hispanic	53	(90)	6	(10)	69	(87)	10	(13)
TOTAL	5,144	(85)	879	(15)	8,289	(87)	1,289	(21)

1. Table 7 does not include 297 King County and 481 Washington cases missing place of birth information.

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS at end of three year intervals—reported as of 12/31/2007—King County

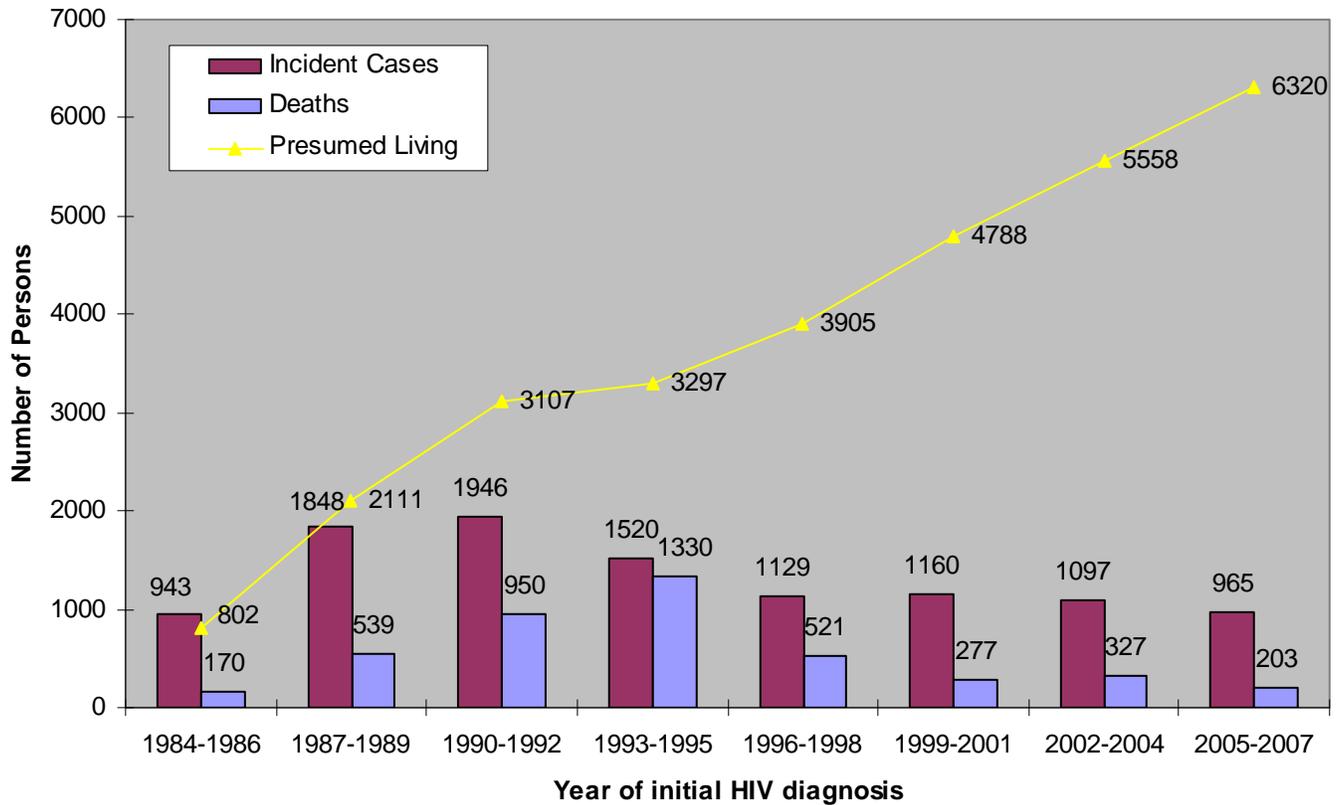


Figure 2: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS at end of three year intervals—reported as of 12/31/2007—Washington state

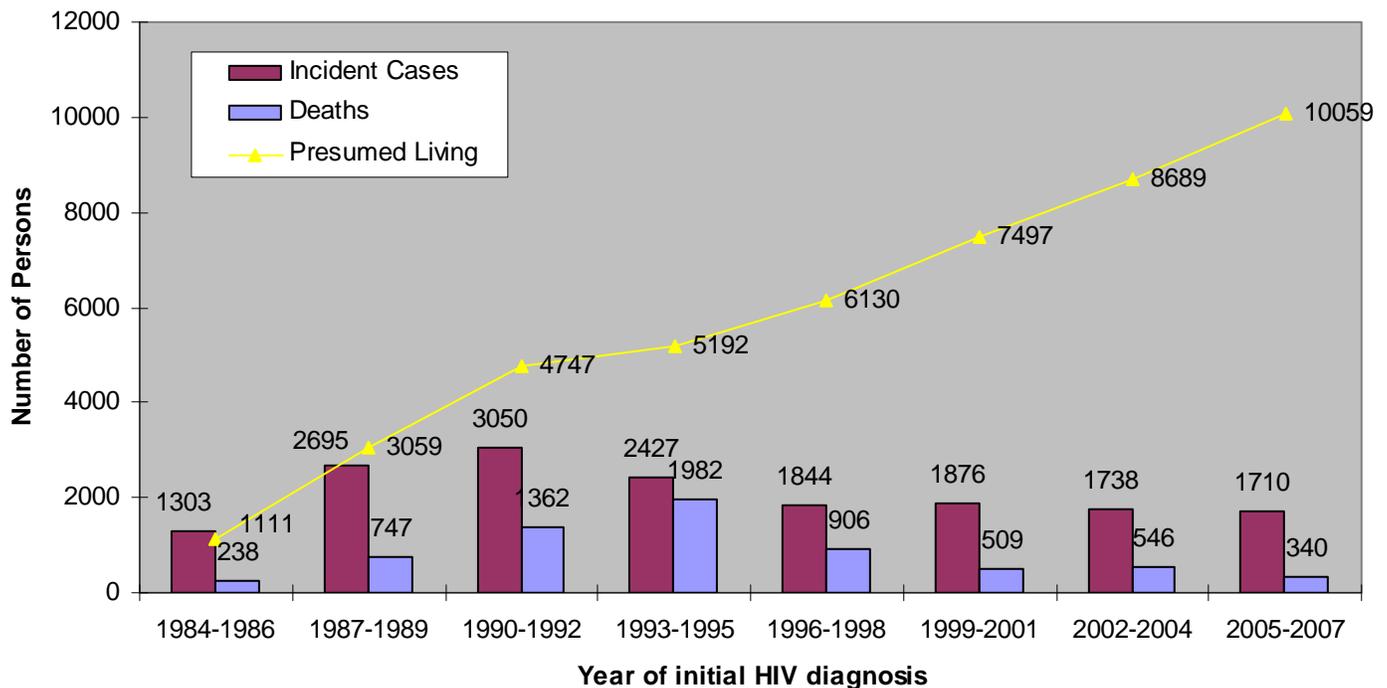


Table 8: Demographic characteristics of King County residents diagnosed 1981-2007 and reported through 12/31/2007, by date of HIV diagnosis

	1981-1998		1999-2001		2002-2004		2005-2007 ¹		Trend ² 1999-2007
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	
TOTAL	7,420	(100)	1,160	(100)	1,097	(100)	965	(100)	
HIV Exposure Category									
Men who have sex with men (MSM)	5,578	(75)	764	(66)	718	(65)	591	(61)	down
Injection drug user (IDU)	415	(6)	80	(7)	68	(6)	42	(4)	
MSM-IDU	779	(10)	83	(7)	87	(8)	80	(8)	
Heterosexual contact	275	(4)	134	(12)	108	(10)	54	(6)	down
Blood product exposure	93	(1)	9	(1)	3	(0)	2	(0)	
Perinatal exposure	22	(0)	5	(0)	0	(0)	0	(0)	
<i>SUBTOTAL - known risk</i>	<i>7,162</i>		<i>1,075</i>		<i>984</i>		<i>769</i>		
Undetermined/other ³	258	(3)	85	(7)	113	(10)	196	(20)	
Sex & Race/Ethnicity									
Male	<i>6,984</i>	<i>(94)</i>	<i>1,021</i>	<i>(88)</i>	<i>977</i>	<i>(89)</i>	<i>849</i>	<i>(88)</i>	
White Male ⁴	5,689	(77)	702	(61)	625	(57)	526	(55)	down
Black Male ⁴	655	(9)	158	(14)	166	(15)	137	(14)	
Hispanic Male	412	(6)	106	(9)	118	(11)	116	(12)	up
Other Male ⁴	228	(3)	55	(5)	68	(6)	70	(7)	up
Female	<i>436</i>	<i>(6)</i>	<i>139</i>	<i>(12)</i>	<i>120</i>	<i>(11)</i>	<i>116</i>	<i>(12)</i>	
White Female ⁴	230	(3)	45	(4)	33	(3)	32	(3)	
Black Female ⁴	141	(2)	74	(6)	66	(6)	67	(7)	
Hispanic Female	26	(0)	14	(1)	8	(1)	6	(1)	
Other Female ⁴	39	(1)	6	(1)	13	(1)	11	(1)	
Race/Ethnicity									
White ⁴	5,919	(80)	747	(64)	658	(60)	558	(58)	down
Black ⁴	796	(11)	232	(20)	232	(21)	204	(21)	
Hispanic	438	(6)	120	(10)	126	(11)	122	(13)	
Asian & Pacific Islander ⁴	127	(2)	35	(3)	35	(3)	55	(6)	up
Native American or Alaskan Native ⁴	106	(1)	14	(1)	22	(2)	7	(1)	
Multiple Race ⁴	32	(0)	9	(1)	22	(2)	14	(1)	
Unknown Race ⁴	2	(0)	3	(0)	2	(0)	5	(1)	
Place of Birth									
Born in U.S. or Territories	6,764	(91)	898	(77)	857	(78)	686	(71)	down
Born outside U.S.	480	(6)	207	(18)	224	(20)	209	(22)	up
Birthplace unknown	176	(2)	55	(5)	16	(1)	70	(7)	up
Age at diagnosis of HIV									
0-12 years	26	(0)	6	(1)	0	(0)	3	(0)	
13-19 years	112	(2)	15	(1)	9	(1)	7	(1)	
20-29 years	2,044	(28)	267	(23)	240	(22)	244	(25)	
30-39 years	3,304	(45)	526	(45)	468	(43)	351	(36)	down
40-49 years	1,452	(20)	268	(23)	285	(26)	251	(26)	
50-59 years	389	(5)	68	(6)	79	(7)	80	(8)	up
60+ years	93	(1)	10	(1)	16	(1)	29	(3)	
Residence									
Seattle residence	6,429	(87)	926	(83)	852	(78)	718	(74)	down
King County south of Seattle	526	(7)	134	(12)	151	(14)	168	(17)	up
King County north or east of Seattle	465	(6)	64	(6)	94	(9)	79	(8)	up

1. Due to delays in reporting, data from recent years are incomplete.
2. The chi-square test for trend identifies statistical changes ($p < .05$) over the periods 1999-2001, 2002-04, and 2005-07.
3. Undetermined mode of exposure includes cases with incomplete information, and sexual exposures where the heterosexual partner is not known to be HIV+, IDU, or a bisexual male. One case was probably infected through occupational exposure.
4. And not Hispanic. The groups Asian and Native Hawaiian & Pacific Islanders are grouped because of small cell sizes.

Table 9: Demographic characteristics of Washington state residents diagnosed 1981-2007 and reported through 12/31/2007, by date of HIV diagnosis

	1981-1998		1999-2001		2002-2004		2005-2007 ¹		Trend ² 1999-2007
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	
TOTAL	11,372	(100)	1,876	(100)	1,738	(100)	1,710	(100)	
HIV Exposure Category									
Men who have sex with men (MSM)	7,725	(68)	1,110	(59)	1,005	(58)	943	(55)	down
Injection drug user (IDU)	999	(9)	203	(11)	157	(9)	116	(7)	down
MSM-IDU	1,184	(10)	129	(7)	130	(7)	127	(7)	
Heterosexual contact	675	(6)	243	(13)	232	(13)	162	(9)	
Blood product exposure	220	(2)	13	(1)	7	(0)	6	(0)	
Perinatal exposure	54	(0)	7	(0)	2	(0)	2	(0)	
<i>SUBTOTAL- known risk</i>	<i>10,857</i>		<i>1,705</i>		<i>1,533</i>		<i>1,356</i>		
Undetermined/other ³	515	(5)	171	(9)	205	(12)	354	(21)	
Sex & Race/Ethnicity									
Male	10,378	(91)	1,594	(85)	1,470	(85)	1,447	(85)	
White Male ⁴	8,499	(75)	1,109	(59)	983	(57)	948	(55)	
Black Male ⁴	902	(8)	222	(12)	221	(13)	209	(12)	
Hispanic Male	633	(6)	179	(10)	169	(10)	188	(11)	
Other Male ⁴	344	(3)	84	(4)	97	(6)	102	(6)	up
Female	994	(9)	282	(15)	268	(15)	263	(15)	
White Female ⁴	594	(5)	125	(7)	107	(6)	108	(6)	
Black Female ⁴	240	(2)	100	(5)	105	(6)	102	(6)	
Hispanic Female	78	(1)	33	(2)	25	(1)	30	(2)	
Other Female ⁴	82	(1)	24	(1)	31	(2)	23	(1)	
Race/Ethnicity									
White ⁴	9,093	(80)	1,234	(66)	1,090	(63)	1,056	(62)	down
Black ⁴	1,142	(10)	322	(17)	326	(19)	311	(18)	
Hispanic	711	(6)	212	(11)	194	(11)	218	(13)	
Asian & Pacific Islander ⁴	189	(2)	57	(3)	60	(3)	81	(5)	up
Native American or Alaskan Native ⁴	188	(2)	32	(2)	42	(2)	21	(1)	
Multiple Race ⁴	36	(0)	10	(1)	23	(1)	18	(1)	
Unknown Race ⁴	13	(0)	9	(0)	3	(0)	5	(0)	
Place of Birth									
Born in U.S. or Territories	10,393	(91)	1,481	(79)	1,394	(80)	1,254	(73)	down
Born outside U.S.	727	(6)	287	(15)	311	(18)	317	(19)	up
Birthplace unknown	252	(2)	108	(6)	33	(2)	139	(8)	up
Age at diagnosis of HIV									
0-12 years	65	(1)	8	(0)	2	(0)	8	(0)	
13-19 years	207	(2)	30	(2)	19	(1)	27	(2)	
20-29 years	3,231	(28)	415	(22)	393	(23)	415	(24)	
30-39 years	4,873	(43)	811	(43)	671	(39)	559	(33)	down
40-49 years	2,197	(19)	447	(24)	471	(27)	467	(27)	up
50-59 years	612	(5)	134	(7)	145	(8)	179	(10)	up
60+ years	187	(2)	31	(2)	37	(2)	55	(3)	up
Residence⁵									
Region 1- Spokane area	572	(5)	114	(6)	94	(5)	97	(6)	
Region 2- Yakima area	352	(3)	76	(4)	74	(4)	82	(5)	
Region 3- Everett area	921	(8)	135	(7)	142	(8)	178	(10)	up
Region 4- Seattle area	7,420	(65)	1,160	(62)	1,097	(63)	965	(56)	down
Region 5- Tacoma area	1,189	(10)	229	(12)	168	(10)	211	(12)	
Region 6- Olympia area	918	(8)	162	(9)	163	(9)	177	(10)	

1. Data from recent years are incomplete.

2. The chi-square test for trend identifies statistical changes ($p < .05$) over the periods 1999-2001, 2002-04, and 2005-07.

3. Undetermined mode of exposure includes cases with incomplete information, and sexual exposures where the heterosexual partner is not known to be HIV+, IDU, or a bisexual male. One case was probably infected through occupational exposure.

4. And not Hispanic. The groups Asian and Native Hawaiian & Pacific Islanders are grouped because of small cell sizes.

5. The counties and regions are: Region 1- Adams, Asotin, Columbia, Ferry, Garfield, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman; Region 2- Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima; Region 3- Island, San Juan, Skagit, Snohomish, and Whatcom; Region 4- King; Region 5- Kitsap and Pierce; Region 6- Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum.

Review of HIV and AIDS among Washington state residents living outside of King County, including a comparison with King County

Introduction

Since Washington's first AIDS case was diagnosed in 1982, more than 16,500 residents of Washington have been diagnosed with HIV disease, and over 5,200 people have died of AIDS. During the past 26 years, the course of the state's HIV epidemic has changed dramatically. After peaking in the early 1990s, HIV rates fell for several years before stabilizing in 1998. Recent surveillance data indicate that HIV rates across the state have been stable for about 10 years. HIV prevalence, or the reported number of people living with HIV disease in Washington, surpassed 10,000 for the first time in December 2007. HIV-infected individuals who live outside King County collectively represent more than a third (37%) of the statewide disease burden. When compared to King County cases, those living elsewhere in Washington are more likely to be female and to have their infections attributed to either heterosexual contact or injection drug use. Cases living outside King County are also more likely to have been diagnosed late in the course of their HIV illness relative to King County cases. Racial/ethnic disparities in HIV risk continue to be a source of public health concern in Washington. However, the difference in HIV risk between whites and other racial/ethnic groups has not changed significantly in recent years, either inside or outside King County.

Methods

This report is based on 16,724 cumulative HIV and AIDS cases diagnosed among Washington state residents through December 31, 2006 and reported to the Department of Health as of January 31, 2008. AIDS cases include those HIV-infected individuals who were diagnosed with an opportunistic infection since 1982, as well as those diagnosed with severe immunodeficiency (CD4+ lymphocyte count below 200/14%) since 1993. We categorized cases as being from inside vs. outside King County (OKC), and by AIDS Service Network (AIDSNet) Region, according to the county of residence at HIV or AIDS diagnosis. The assignment of newly diagnosed (or incident) HIV infections (including concurrent diagnoses of HIV and AIDS) to a specific geographic region is based on residence of the patient at the time of initial HIV diagnosis. The assignment of prevalent HIV and AIDS cases to a specific geographic region is based on residence of the patient at the time of their most recent HIV or AIDS diagnosis.

HIV treatment regimens have altered the natural course of HIV infection by delaying progression to AIDS and death. For this reason, data on AIDS diagnoses and AIDS deaths do not adequately describe the HIV epidemic. Since full reporting of HIV was initiated in September 1999, it is now possible to report emerging trends in HIV diagnoses. Consequently, diagnoses reported since then include patients with all stages of HIV disease.

In previous publications, mortality data have been presented showing all deaths among people diagnosed with HIV or AIDS, regardless of whether the actual cause of death was related to their HIV disease. All deaths have an impact on HIV prevalence, no matter the cause. However, for death data presented in this report, we used death certificate information to select only cases in which HIV or AIDS was determined by the physician completing the death certificate to have been a contributing factor in the patient's death.

HIV/AIDS incidence and mortality

From the start of the epidemic, the annual number of AIDS cases diagnosed in Washington state increased each year until peaking with 943 AIDS cases in 1993 (**Figure 1**). The AIDS case definition was expanded in 1993 by the Centers for Disease Control and Prevention (CDC) to include asymptomatic HIV infection with laboratory evidence of severe immunodeficiency. Consequently, people were reported earlier in the course of their disease, a phenomenon contributing to the apparent peak in AIDS incidence. After 1993 the number of AIDS diagnoses declined both inside and outside King County. In 1998, the number of AIDS diagnoses among OKC residents was 57% lower than in 1993 (143 vs. 332), while the number of King County cases was 60% lower (244 vs. 611). Between 1998 and 2006, the annual number of AIDS diagnoses stabilized, averaging 232 and 169 cases per year among King County and OKC residents, respectively.

AIDS deaths among people diagnosed in Washington state have also decreased greatly since the mid-1990s (**Figure 1**). Much of this decrease is due to the widespread distribution of highly-active antiretroviral therapy (HAART), which began in 1996. Outside King County, the annual number of AIDS deaths reached a high of 206 in 1994. Five years later in 1999, 46 AIDS deaths

Figure 1. AIDS Cases and Associated Deaths, Inside and Outside King County

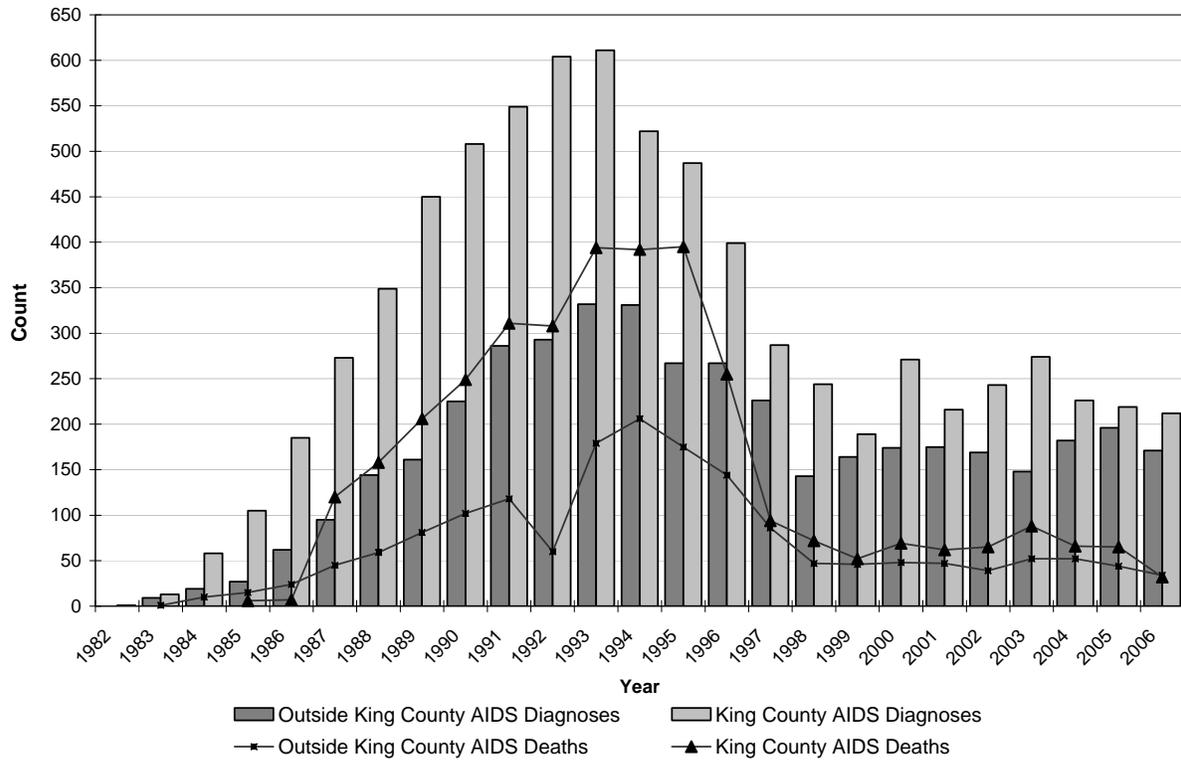
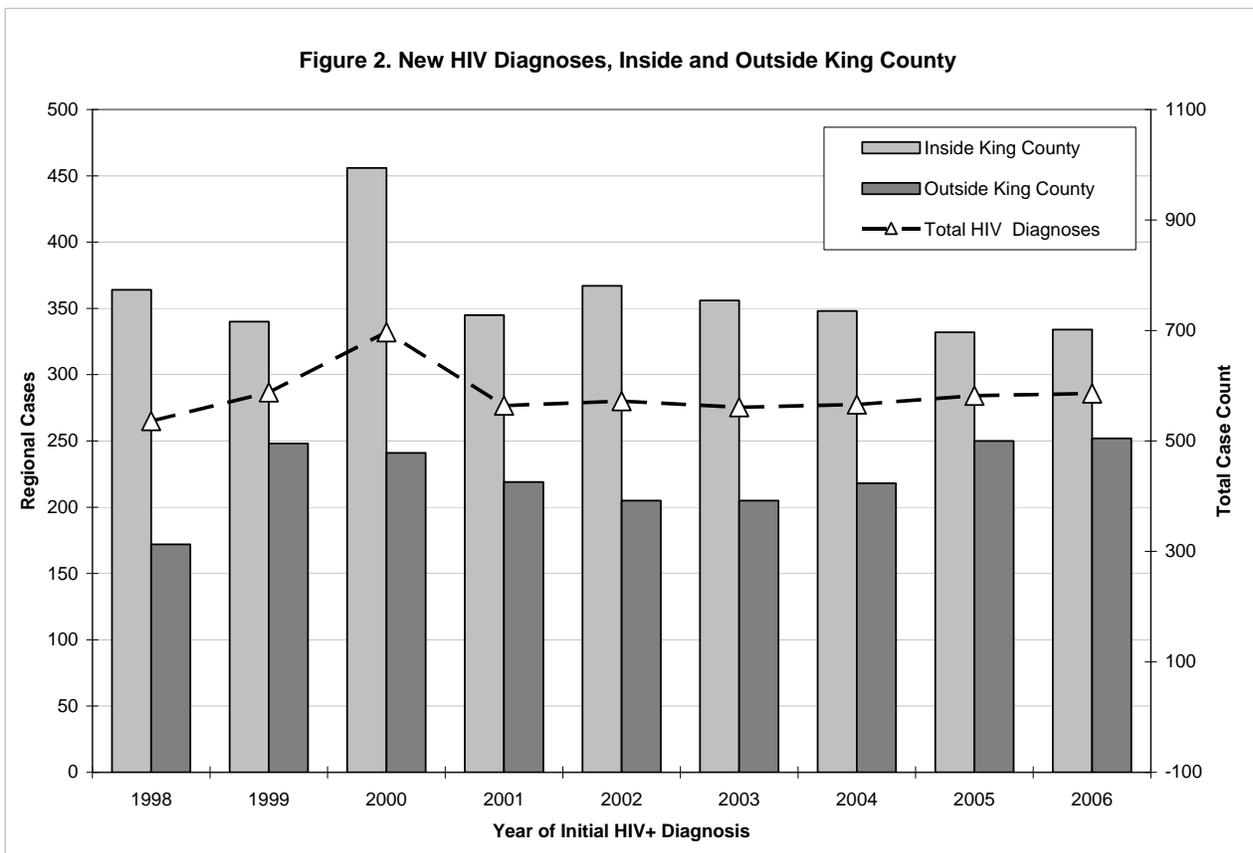


Figure 2. New HIV Diagnoses, Inside and Outside King County



were reported, only 22% of the earlier peak. Between 1998 and 2006, annual numbers of AIDS deaths have been stable in Washington, averaging 63 and 45 deaths per year, respectively among King County and OKC AIDS cases.

Figure 2 shows HIV epidemic curves since 1998, both inside and outside King County. Between 1998 and 2006, annual numbers of new HIV diagnoses have been relatively stable statewide, averaging 360 and 223 cases per year inside and outside King County, respectively.

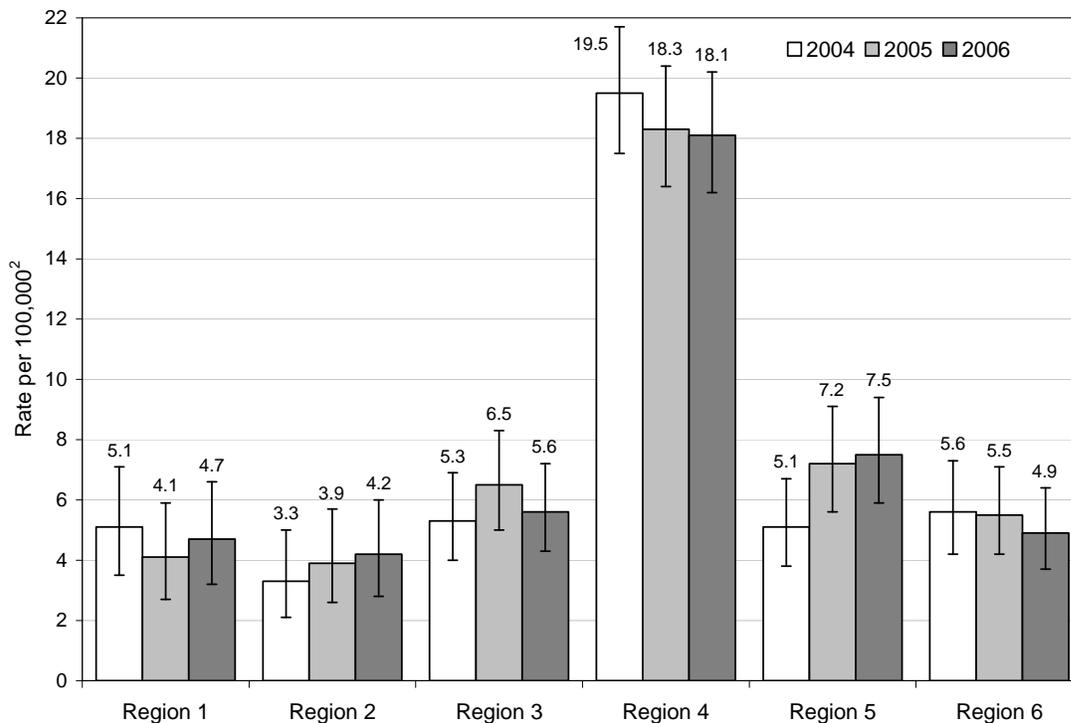
Figure 3 displays annual HIV incidence rates by AIDS-Net region for the years 2004, 2005 and 2006. Incidence rates are defined here as the number of HIV diagnoses per 100,000 residents. Outside King County, Region 5 had the highest HIV incidence rates with a 3-year (2004-2006) average of 6.6 (5.7-7.6) diagnoses per 100,000 per year. The lowest incidence rates were observed in Region 2, which averaged 3.8 (3.0-4.7) diagnoses per 100,000 per year during the same time period. Rates among King County residents were roughly three to five times higher than those of OKC residents.

Trends in demographic characteristics

Throughout most of the HIV epidemic in Washington we have observed slow but steady increases over time in the proportion of HIV cases diagnosed among women, racial/ethnic minorities, and those acquiring HIV via heterosexual contact. However, recent surveillance data indicate that such changes are no longer taking place (**Table 1**). Within King County, the proportion of new HIV diagnoses that are white (non-Hispanic) may still be decreasing, but this change is not reflected by cases diagnosed among people residing outside King County. The proportion of HIV cases diagnosed at age 40 or older appears to be increasing both inside and outside King County. Although the proportion of cases attributed to heterosexual contact is currently stable, the proportion of non-MSM, non-IDU cases shows a decreasing trend over time, especially outside King County.

Race and ethnicity are strongly associated with HIV risk. New HIV rates among non-Hispanic blacks are the highest of any racial/ethnic group living in Washington.

Figure 3. HIV Case Rates by AIDSNet Region, 2004-2006



¹ HIV incidence includes new HIV diagnoses within the period.

² Crude Rate, not adjusted for age, calculated using Intercensal /Postcensal Population Estimates provided by the WA State Office of Financial Management.

(Figure 4). Black HIV rates were 4.2- and 6.5- times higher than those of non-Hispanic whites inside and outside King County, respectively, between 2002 and 2006. However, foreign-born blacks represent a growing proportion of black cases in recent years. Most foreign-born blacks are from African countries with high HIV prevalence rates. During 2002-2006, foreign-born blacks accounted for 42% and 25%, respectively of new HIV cases diagnosed among all non-Hispanic black people

living inside and outside King County. Hispanics and American Indians/Alaska Natives also have rates that are roughly twice those of their white counterparts.

Late HIV diagnoses

We define late HIV diagnoses as cases that were diagnosed with AIDS within 12 months of their initial HIV

Table 1: Comparison of trends in the demographic and risk characteristics of newly diagnosed HIV cases residing inside vs. outside King County, Washington state¹

Region:	Washington (excluding King County)			King County			
	Year of HIV diagnosis:	1998-2000	2001-2003	2004-2006	1998-2000	2001-2003	2004-2006
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Sex by Race/Ethnicity							
Male	536 (81)	498 (79)	574 (80)	1025 (88)	948 (89)	902 (89)	
White Male	392 (73)	346 (69)	425 (74)	703 (69)	630 (66)	558 (62)	
Black Male	56 (10)	63 (13)	60 (10)	160 (16)	145 (15)	151 (17)	
Hispanic Male	60 (11)	57 (11)	58 (10)	106 (10)	111 (12)	116 (13)	
Asian/PI Male	14 (3)	22 (4)	15 (3)	33 (3)	30 (3)	49 (5)	
Am Indian/AN Male	7 (1)	8 (2)	12 (2)	13 (1)	15 (2)	5 (1)	
Multi / Other / Unknown	7 (1)	2 (0)	4 (1)	10 (1)	17 (2)	23 (3)	
Female	125 (19)	131 (21)	146 (20)	135 (12)	120 (11)	112 (11)	
White Female	71 (57)	69 (53)	71 (49)	55 (41)	33 (28)	34 (30)	
Black Female	26 (21)	36 (27)	32 (22)	62 (46)	66 (55)	59 (53)	
Hispanic Female	14 (11)	13 (10)	25 (17)	12 (9)	10 (8)	7 (6)	
Asian/PI Female	8 (6)	4 (3)	8 (5)	3 (2)	3 (3)	6 (5)	
Am Indian/AN Female	6 (5)	8 (6)	10 (7)	3 (2)	7 (6)	5 (4)	
Multi / Other / Unknown	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)	1 (1)	
Race							
White (non-Hispanic)	463 (70)	415 (66)	496 (69)	758 (65)	663 (62)	592 (58)	
Black (non-Hispanic)	82 (12)	99 (16)	92 (13)	222 (19)	211 (20)	210 (21)	
Hispanic	74 (11)	70 (11)	83 (12)	118 (10)	121 (11)	123 (12)	
Asian/Pacific Islander	22 (3)	26 (4)	23 (3)	36 (3)	33 (3)	55 (5)	
AM Indian/AK Native	13 (2)	16 (3)	22 (3)	16 (1)	22 (2)	10 (1)	
Multi / Other / Unknown	7 (1)	3 (0)	4 (1)	10 (1)	18 (2)	24 (2)	
Age at HIV Diagnosis							
12 and Under	2 (0)	1 (0)	3 (0)	6 (1)	0 (0)	3 (0)	
13-19	12 (2)	10 (2)	11 (2)	17 (1)	12 (1)	4 (0)	
20-29	144 (22)	131 (21)	173 (24)	256 (22)	228 (21)	234 (23)	
30-39	254 (38)	234 (37)	194 (27)	522 (45)	501 (47)	392 (39)	
40-49	165 (25)	171 (27)	221 (31)	277 (24)	243 (23)	285 (28)	
50-59	69 (10)	53 (8)	97 (13)	71 (6)	69 (6)	78 (8)	
60+	15 (2)	29 (5)	21 (3)	11 (1)	15 (1)	18 (2)	
Exposure Category							
MSM	317 (48)	293 (47)	336 (47)	781 (67)	696 (65)	629 (62)	
IDU	119 (18)	83 (13)	84 (12)	78 (7)	74 (7)	58 (6)	
MSM/IDU	40 (6)	44 (7)	44 (6)	88 (8)	80 (7)	86 (8)	
Heterosexual Contact	98 (15)	121 (19)	121 (17)	102 (9)	119 (11)	71 (7)	
Blood Product Exposure	4 (1)	2 (0)	6 (1)	6 (1)	6 (1)	4 (0)	
Pediatric	2 (0)	1 (0)	2 (0)	5 (0)	0 (0)	0 (0)	
NIR	81 (12)	85 (14)	127 (18)	100 (9)	93 (9)	166 (16)	
Total in Region	661 (100)	629 (100)	720 (100)	1160 (100)	1068 (100)	1014 (100)	

¹ All data were reported to the HIV/AIDS Reporting System as of January 31, 2008

PI= Pacific Islander; AN=Alaska Native; MSM=men who have sex with men; IDU = Injection drug user; NIR=no identified risk

diagnosis. People with HIV disease who delay in getting tested are more likely to spread the virus to others, less likely to report how they were exposed, and face comparatively worse clinical outcomes. In Washington state, late HIV diagnoses accounted for 31% of all new HIV diagnoses from 2002 to 2006. The proportion of late HIV diagnoses is higher outside King County (35%) than within (29%) (Figure 5).

People living with HIV

As of December 31, 2007, there were 10,068 cases of HIV disease (including those with AIDS) reported to be living in Washington state. Table 3 presents prevalent HIV cases by AIDSNet region. (Reminder: these data may not necessarily represent where individuals acquired HIV nor where they are currently living.)

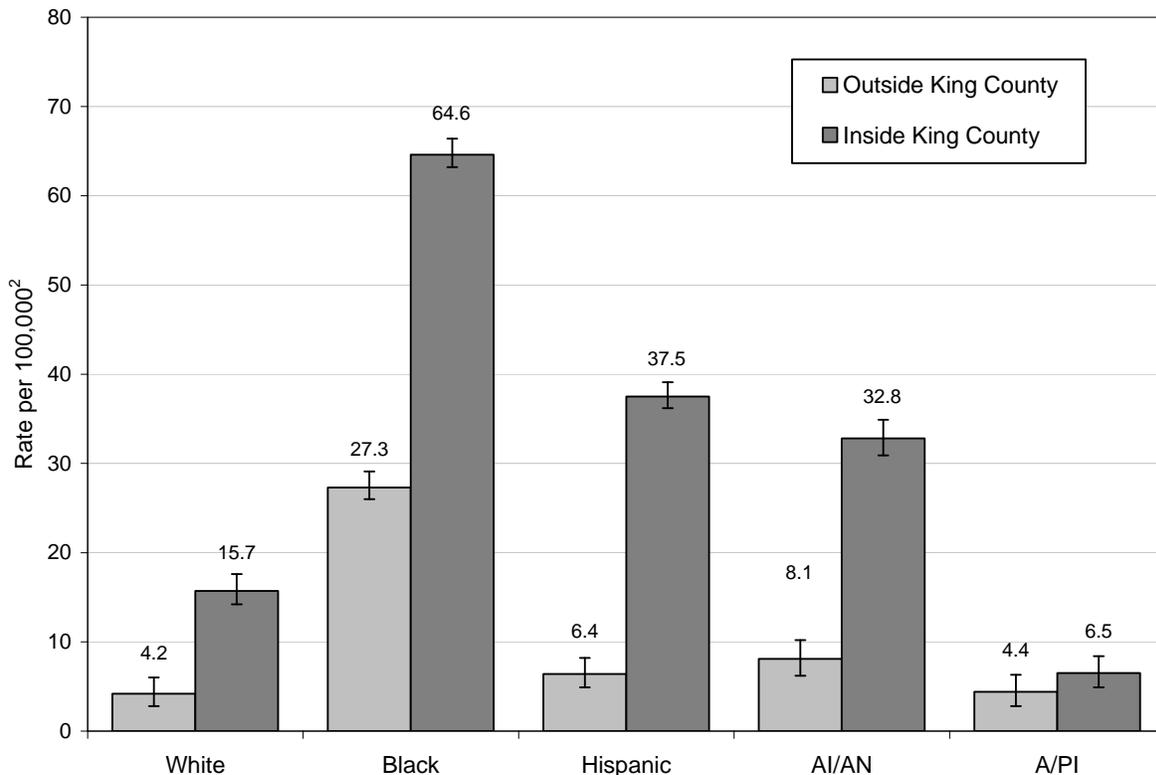
About one third (37%) of people living with HIV disease in Washington state reside outside of King County. Within each AIDSNet region, the proportion of cases

residing in the lead health district ranges from a low of 40% in Region 2 to a high of 83% in Region 5. The overall prevalence rate of HIV infection outside King County is 81 cases per 100,000 residents. Region 5 has the highest prevalence rate (104 per 100,000) followed by Region 6 (84 per 100,000).

A higher proportion (90%) of prevalent cases in King County are male vs. those living elsewhere in the state (80%). Regardless of residence, most cases living across the state are white, non-Hispanic. Region 5 has the highest percentage of black male cases (19% of all male cases), while Region 2 has the highest percentage of Hispanic male cases (35%). Region 2 has the highest proportion of female cases overall (26%). Among female cases, nearly one in three (32%) cases are black in Region 5 vs. nearly half (48%) in King County. Similar to male cases, Region 2 also has the highest proportion of female cases that are Hispanic (40%).

Given widespread availability of effective treatments, people with HIV infection continue to survive for longer

Figure 4. HIV Case Rates by Race/Ethnicity, 2002-2006



¹ HIV incidence includes new HIV diagnoses within the period.

² Crude Rate, not adjusted for age, calculated using Intercensal /Postcensal Population Estimates provided by the WA State Office of Financial Management.

NH= and not Hispanic

and longer periods of time following their initial diagnosis. Thus, not only are people with HIV growing in number, they are aging. Both inside and outside King County, the majority of prevalent cases are well over 40 and nearly one third are over fifty. Region 2 is the only

AIDSNet in which more than 40% of prevalent cases are under the age of forty years.

Statewide, men having sex with men (MSM) is the most commonly reported mode of HIV transmission. How-

Table 2: Characteristics of Washington state cases of HIV disease presumed living as of December 31, 2007 (n=10,068; reported to the Department of Health as of January 31, 2008), Washington state¹

AIDSNET Region:	1		2		3		5		6		Outside King Co.		King Co.	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Sex by Race/Ethnicity														
Male	431	(86)	281	(74)	705	(81)	835	(78)	755	(83)	3007	(80)	5704	(90)
White Male	350	(81)	164	(58)	560	(79)	576	(69)	625	(83)	2275	(76)	4130	(72)
Black Male	25	(6)	12	(4)	51	(7)	155	(19)	48	(6)	291	(10)	740	(13)
Hispanic Male	30	(7)	99	(35)	52	(7)	68	(8)	51	(7)	300	(10)	551	(10)
Asian/PI Male	5	(1)	3	(1)	22	(3)	22	(3)	15	(2)	67	(2)	166	(3)
Am Indian/AN Male	13	(3)	3	(1)	15	(2)	12	(1)	8	(1)	51	(2)	60	(1)
Multi / Other / Unknown	7	(2)	0	(0)	5	(1)	2	(0)	8	(1)	22	(1)	57	(1)
Female	72	(14)	100	(26)	165	(19)	241	(22)	158	(17)	736	(20)	621	(10)
White Female	43	(60)	48	(48)	90	(55)	119	(49)	119	(75)	419	(57)	230	(37)
Black Female	15	(21)	9	(9)	34	(21)	78	(32)	21	(13)	157	(21)	295	(48)
Hispanic Female	3	(4)	40	(40)	17	(10)	21	(9)	7	(4)	88	(12)	45	(7)
Asian/PI Female	4	(6)	1	(1)	11	(7)	14	(6)	6	(4)	36	(5)	20	(3)
Am Indian/AN Female	5	(7)	2	(2)	13	(8)	8	(3)	5	(3)	33	(4)	26	(4)
Multi / Other / Unknown	2	(3)	0	(0)	0	(0)	1	(0)	0	(0)	3	(0)	5	(1)
Race														
White (non-Hispanic)	393	(78)	212	(56)	650	(75)	695	(65)	744	(81)	2694	(72)	4360	(69)
Black (non-Hispanic)	40	(8)	21	(6)	85	(10)	233	(22)	69	(8)	448	(12)	1035	(16)
Hispanic	33	(7)	139	(36)	69	(8)	89	(8)	58	(6)	388	(10)	596	(9)
Asian/Pacific Islander	9	(2)	4	(1)	33	(4)	36	(3)	21	(2)	103	(3)	186	(3)
AM Indian/AK Native	18	(4)	5	(1)	28	(3)	20	(2)	13	(1)	84	(2)	86	(1)
Multi / Other / Unknown	9	(2)	0	(0)	5	(1)	3	(0)	8	(1)	25	(1)	62	(1)
Age as of 12/31/07														
12 and Under	2	(0)	2	(0)	3	(0)	1	(0)	2	(0)	10	(0)	11	(0)
13-19	6	(1)	3	(1)	4	(0)	13	(1)	7	(1)	33	(1)	15	(0)
20-29	44	(9)	34	(9)	62	(7)	92	(9)	62	(7)	294	(8)	397	(6)
30-39	94	(19)	120	(31)	224	(26)	245	(23)	196	(21)	879	(23)	1512	(24)
40-49	213	(42)	139	(36)	330	(38)	431	(40)	346	(38)	1459	(39)	2662	(42)
50-59	100	(20)	60	(16)	182	(21)	225	(21)	228	(25)	795	(21)	1362	(22)
60+	44	(9)	23	(6)	65	(7)	69	(6)	72	(8)	273	(7)	366	(6)
Exposure Category														
MSM	251	(50)	162	(43)	454	(52)	505	(47)	461	(50)	1833	(49)	4380	(69)
IDU	72	(14)	44	(12)	79	(9)	178	(17)	136	(15)	509	(14)	356	(6)
MSM/IDU	51	(10)	31	(8)	61	(7)	86	(8)	80	(9)	309	(8)	552	(9)
Heterosexual Contact	52	(10)	91	(24)	132	(15)	175	(16)	123	(13)	573	(15)	462	(7)
Blood Product Exposure	5	(1)	2	(1)	14	(2)	9	(1)	12	(1)	42	(1)	36	(1)
Pediatric	6	(1)	4	(1)	4	(0)	9	(1)	6	(1)	29	(1)	19	(0)
NIR	66	(13)	47	(12)	126	(14)	114	(11)	95	(10)	448	(12)	520	(8)
Current Status														
HIV only	191	(38)	152	(40)	346	(40)	496	(46)	380	(42)	1565	(42)	2841	(45)
AIDS	312	(62)	229	(60)	524	(60)	580	(54)	533	(58)	2178	(58)	3484	(55)
Total in Region	503	(100)	381	(100)	870	(100)	1076	(100)	913	(100)	3743	(100)	6325	(100)
Lead Health District	Spokane Co.		Yakima Co.		Snohomish Co.		Pierce Co.		Clark Co.		N/A		King Co.	
% Residing in Lead District	77%		40%		71%		83%		46%		66%		100%	
Disease Burden²	5.0%		3.8%		8.6%		10.7%		9.1%		37.2%		62.8%	
Prevalence Rate³	70.8		53.5		80.2		103.9		84.3		80.9		339.8	

¹ Based on residence at time of most recent diagnosis; presumed living includes all persons reported with HIV or AIDS who are not known to have died based on periodic searches of national death records

² Percentage of prevalent cases who resided within AIDSNet Region at time of most recent diagnosis

³ Cases per 100,000 residents

ever, the proportion of prevalent cases attributed to MSM is much higher within King County (69%) vs. elsewhere (49%). It is important to remember that there are two exposure categories that include MSM: those with and without a history of injection drug use. Cases reported as MSM/IDU account for an additional 8-9% of prevalent case statewide. Cases living outside of King County are more likely than those within to have been attributed to either injection drug use or heterosexual contact. Region 5 has the highest proportion of prevalent cases attributed to injection drug use (17%). The proportion of prevalent cases attributed to heterosexual contact was highest in Region 2 (24%).

Comments

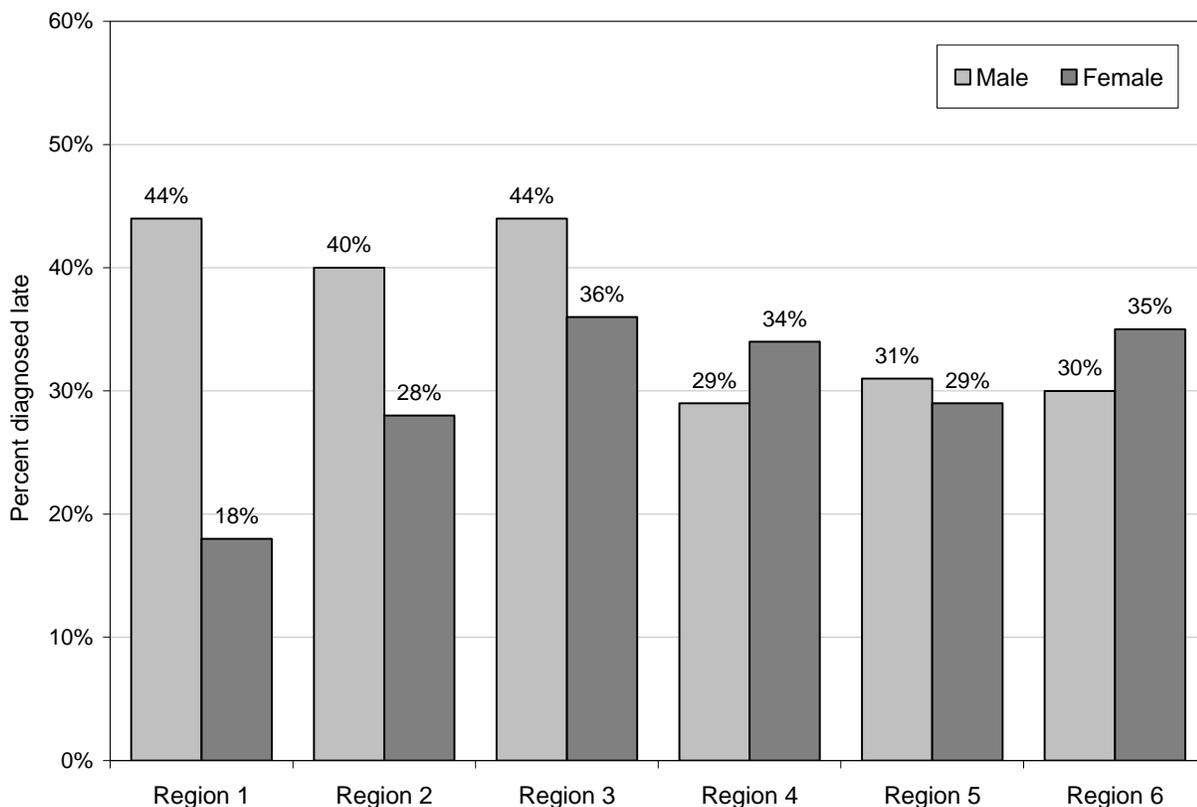
The course of the HIV epidemic in Washington has been relatively stable for nearly a decade. Despite population increases, annual numbers of new HIV diagnoses have been largely the same from year to year. Similarly, the percentages of new HIV cases that are female and/or are a racial/ethnic minority have been flat. Neverthe-

less, racial/ethnic disparities in HIV risk remain in place and show no sign of diminishing. Reducing these disparities should be a priority for public health and HIV prevention planners in Washington state. Additionally, the fact that nearly one third of all new HIV diagnoses in Washington occur late in the course of their HIV illness indicates that more work needs to be done to encourage people at risk for HIV to get tested regularly.

Despite decreases in AIDS diagnoses and AIDS deaths, the number of people living with HIV disease in Washington state continues to grow at a rate of about 5% per year. Both inside and outside King County, HIV prevention and care service providers are sure to face new challenges in meeting the unique needs of a growing and aging population of HIV-infected people.

- *Contributed by Jason Carr and Todd E. Rime*

Figure 5. Late HIV diagnoses by AIDSNet Region and gender, 2002-2006



Assessing the standard of HIV care in Washington state using new data collection methods: Information from self-reported interviews and medical charts

Introduction

The Care and Prevention Project (CAP) started data collection in Washington state starting January 2007. The primary aim of CAP is to assess and evaluate the health status and well-being of HIV-infected patients receiving care in Washington state. The information collected will be used to guide future programs, community planning, prioritization efforts, program evaluation and policy decisions as well as to inform local community planning and forecasts. CAP combines the data collection methods of two prior CDC surveillance initiatives: the Adult Spectrum of HIV Disease (ASD) Project, a longitudinal medical record abstraction study, and the Supplement to HIV/AIDS Surveillance (SHAS) Project, a cross-sectional interview study.

Data in this report reflect comparisons of participant demographics and HIV-related care in King County relative to the rest of the state. We also compare clinical information collected via interview with what was found in the medical record.

Methods

In King County, CAP was conducted at fourteen selected medical facilities; enrollment ended May 2007. The project continues to be conducted at eight different sites outside of King County. The project combines patient interview data with clinical data from medical record abstractions on patients receiving medical care at the participating facilities. Information collected by interview includes healthcare access, patients' experiences with the care systems related to HIV, drug therapies, self-assessment of overall well-being, co-morbidities and lab results.

A convenience sample of 337 patients in King County and 115 patients outside of King County completed interviews. Eligibility included HIV infection, age >14 years, and no prior CAP interview. Study participants were recruited through self-referral in response to fliers and brochures posted at study sites. Clinic staff, social workers and nurses also referred clients to the project. In addition, CAP staff actively recruited participants at the selected facilities, clinics, and day centers providing ancillary care and services to clients with HIV. All par-

ticipants were screened for eligibility and informed consent was obtained prior to interview and medical record abstraction. In order to increase participation rates, the interview was conducted in three ways:

1. interviewer administered, in-person, using pocket PCs
2. interviewer administered, by phone, using pocket PCs
3. self administered, on a paper interview form

Trained abstractors collected clinical information through medical record abstraction using ASD initial interval forms. The dates and range of the abstraction were framed by the interview date and HIV-related care received during the year prior to the interview date. Information collected by chart review included antiretro-

Table 1: Demographics of Washington state Care and Prevention (CAP) participants, 2006-2007

	King County N=337	Outside King County N=115
Sex		
Male	286 (85%)	92 (80%)
Female	51 (15%)	22 (19%)
Transgender	0	1 (1%)
Age in years		
20-29	13 (4%)	3 (3%)
30-39	65 (19%)	19 (17%)
40-49	161 (48%)	62 (54%)
50+	98 (29%)	31 (27%)
Race*		
White, not Hispanic	232 (69%)	88 (77%)
Black, not Hispanic	82 (24%)	22 (19%)
Hispanic	25 (7%)	8 (7%)
Asian/Pacific Islander	2 (1%)	1 (1%)
American Indian/Alaska Native	1 (<1%)	11 (10%)
Education		
Less than high school	15 (4%)	4 (3%)
Some high school	32 (9%)	23 (20%)
High school graduate	102 (30%)	30 (26%)
Some college/Associate's degree	116 (34%)	49 (43%)
College graduate, 4 year	44 (13%)	4 (3%)
More than 4 year college degree	27 (8%)	5 (4%)
Sexual Identity		
Straight	85 (25%)	43 (37%)
Gay	205 (61%)	55 (48%)
Bisexual	41 (12%)	14 (12%)
Other	6 (2%)	3 (3%)
Annual income		
<\$10,000	202 (60%)	87 (76%)
\$10,001-\$20,000	67 (20%)	18 (16%)
\$20,001-\$30,000	28 (8%)	8 (7%)
\$30,001-\$40,000	13 (4%)	1 (1%)
>\$40,000	25 (7%)	1 (1%)

*Participants may report more than one race category
Numbers may not add up to entire sample due to missing data

viral therapies, laboratory results, adverse outcomes and health services utilization. All study participants were offered a \$20 incentive as compensation.

Table 2: Co-Morbidities of Washington state Care and Prevention (CAP) Participants, 2006-2007

	King County N=337	Outside King County N=115
Mental health		
Psychosis (i.e. schizophrenia)	15 (4%)	6 (5%)
Depression	182 (54%)	66 (57%)
Anxiety	118 (35%)	36 (31%)
Other mood disorders (bipolar, mania)	54 (16%)	19 (17%)
Other mental health condition	31 (9%)	12 (10%)
Currently homeless	57 (17%)	16 (14%)
STD in the last 12 months		
Syphilis	15 (4%)	1 (1%)
Gonorrhea	10 (3%)	0 (0%)
Chlamydia	12 (4%)	1 (1%)
Herpes	48 (14%)	8 (7%)
Genital warts	24 (7%)	9 (8%)
IDU		
Ever	131 (39%)	45 (39%)
Last 12 months	60 (18%)	22 (19%)
Non-injection drug use last 12 months	127 (38%)	31 (27%)
Current smoker	188 (56%)	77 (67%)
Currently drink alcohol	179 (53%)	72 (63%)
Ever hepatitis C positive*	88 (26%)	16 (14%)
Ever positive tuberculosis (TB) screening test (designating infection not disease)*	44 (13%)	17 (15%)

*Self report questionnaire.

Table 3: Sexual behavior of Washington state Care and Prevention (CAP) participants, 2006-2007

Number of partners (vaginal, anal, or oral sex) last 12 months	King County N=337	Outside King County N=115
0	90 (27%)	33 (29%)
1-2	127 (38%)	57 (50%)
≥3	115 (34%)	25 (22%)
Don't know/NA	5 (1%)	0 (0%)
Unprotected anal or vaginal sex last 12 months	161/242 (67%)	41/82 (50%)
Unprotected anal or vaginal sex with unknown or negative HIV partner	46/242 (19%)	13/82 (16%)
Ever told sex partner HIV negative?	54 (16%)	10 (9%)

Results

Medical record abstractions have been completed for all 337 King County participants. Outside of King County, 53 (46%) of 115 participants interviewed have medical record abstractions completed. The respondents were primarily male both in King County (85%) and outside King County (80%) (Table 1). Nearly half of the sample (49%) was between 40-49 years old. The majority of the participants were white, non-Hispanic both in King County (69%) and outside King County (77%). A higher percentage of participants in King County identified as gay (61%) compared with the rest of Washington state (48%). The majority of participants both inside and outside King County reported an annual income of less than \$10,000 (64%).

Percentages of some co-morbid conditions, such as mental illness, were similar inside and outside King County (Table 2). Fifty-four percent of participants in King County and 57% of those outside King County reported were diagnosed with or treated for depression in the last year. Proportions of those reporting injection drug use in the last year were also similar; 18% in King County and 19% outside King County. However self-report of non-injection drug use in the last year was somewhat higher in King County than outside King County (38% vs. 27%, respectively). There were additional differences across the regions. Homelessness was more prevalent inside than outside King County (17% vs. 14%, respectively). Diagnosis of a sexually transmitted infection (STI) was also more common in King County for all STIs except for genital warts. Participants outside of King County were more likely to report being a current smoker (67% vs. 56%) and those outside King County were more likely to report that they currently drink alcohol than those in King County (63% vs. 53%, respectively). A larger percentage of King County participants reported ever being diagnosed with hepatitis C than those outside of King County (26% vs. 14%, respectively). Prevalence of testing positive for tuberculosis (TB) was similar across the state; 13% in King County and 15% outside of King County.

Data in this report also highlight differences in sexual behaviors reported by participants in King County compared with those outside the county. Seventy-two percent of King County participants and 71% of participants outside King County reported having sex (defined as vaginal, anal or oral sex) with one or more partner(s) in the last 12 months (Table 3). However, among sexually active participants, those from King County had a higher percentage reporting unprotected anal or vaginal

sex in the last 12 months than those outside King County (67% vs. 50%, respectively). A similar proportion, 19% in and 16% outside of King County reported unprotected anal or vaginal sex with a negative or unknown status partner. Overall, 14% have told one or more sex partners they were not infected with HIV since their HIV diagnosis.

Unmet need for medical services, dental services, mental health services, drug and alcohol treatment and case management appears to be somewhat higher in King County compared with the rest of Washington state (Table 4).

Self-reported adherence to highly active antiretroviral therapy (HAART) was similar across the state with slightly more King County participants reporting that they never miss a dose of their regimen than those outside of King County (55% vs. 50%, respectively) (Table 5).

In regards to clinical indicators and preventative health services information, data from King County and outside King County were combined and information from the questionnaire was compared with what was abstracted from the medical record. The main difference in reporting the most recent CD4 counts and lowest CD4 counts is the percentage of missing or unknown. Nearly a quarter of the participants reported not knowing their most recent CD4 or their lowest CD4 count, whereas this information was only missing in two to three percent of participants' medical records. Among those who did know their most recent CD4 count, the numbers were similar to those found in the medical chart (Table 6).

There was also a large discrepancy in missing or unknown values reported in the questionnaire compared with what was found in the medical record for most recent viral load (29% vs. 4%, respectively). Excluding those with missing data, a higher percentage self-reported their most recent viral load as undetectable compared to values in their medical records (60% vs. 51%, respectively).

Medical record data revealed a higher percentage of participants ever receiving an AIDS diagnosis (64%) relative to self-reported interview response (52%). However, the questionnaire showed that participants were more likely to report an occurrence of some of the AIDS opportunistic illnesses relative to finding these diagnoses in patients' medical records. Sixteen percent of participants reported ever being diagnosed with *pneumocystis jiroveci* pneumonia (PCP) compared with 10% of participants with this history in their medical chart. Also, a higher proportion reported a history of

Table 4: Care services and insurance status of Washington state Care and Prevention (CAP) participants, 2006-2007

	King County N=337	Outside King County N=115
Needed following services over the past year but been unable to obtain them		
Medical	49 (15%)	9 (8%)
Dental	97 (29%)	30 (26%)
Mental Health	53 (16%)	12 (10%)
Drug or alcohol treatment	25 (7%)	5 (4%)
Case Management	47 (14%)	3 (3%)
Insurance		
No Insurance	12 (4%)	4 (3%)
Private	52 (15%)	6 (5%)
Public	266 (79%)	103 (90%)
Missing / Other	7 (2%)	2 (2%)

Table 5: Self reported HAART adherence of Washington state Care and Prevention (CAP) participants, 2006-2007

	King County N=241*	Outside King County N=88*
Never miss a dose	132 (55%)	44 (50%)
Miss about 1 dose/ month	52 (22%)	21 (24%)
Miss about 2 doses/month	26 (11%)	9 (10%)
Miss about 3 doses/month	13 (5%)	3 (3%)
Miss about 1 dose/week	8 (3%)	5 (6%)
Miss about 2-3 doses/week	4 (2%)	3 (3%)
Miss about 4-5 doses/week	3 (1%)	1 (1%)
Miss about 6-7 doses/week	2 (1%)	1 (1%)

*Limited to 325 currently on HAART (241 from King County and 88 from outside King County)

tuberculosis or recurrent pneumonia as compared to what was found in the medical chart.

Overall, participant reports on preventative health services in the questionnaire were similar to what was found in the medical charts. However, a somewhat higher percentage of participants with a CD4 count less than 350 reported being prescribed highly active antiretroviral therapy (HAART) relative to the proportion with HAART prescriptions found in their medical records. Eighty-four percent of participants reported being on HAART compared with 79% found to be on HAART based on the medical record abstractions (Table 7). Eighty-five percent of participants reported having two or more CD4 tests in the last 12 months and the same number were found to have two or more tests in their medical record abstractions. Similarly, 81% reported

Table 6: Clinical indicators of Washington state Care and Prevention (CAP) participants, 2006-2007 (Non-King County Washington state data limited to 53 participants with matching interview and abstraction data)

	Questionnaire N=390		Medical Record Abstraction N=390	
Most recent CD4 + lymphocyte count		% excluding 96 unknowns		% excluding 6 unknowns
0-199	58 (15%)	20%	80 (21%)	21%
200-499	27 (33%)	43%	172 (44%)	45%
500+	108 (28%)	37%	128 (33%)	33%
Don't know	96 (25%)		6 (2%)	
Lowest CD4 + lymphocyte count		% excluding 88 unknowns		% excluding 10 unknowns
0-199	185 (47%)	61%	223 (57%)	59%
200-499	98 (25%)	32%	113 (29%)	30%
500+	19 (5%)	6%	40 (10%)	11%
Don't know/missing	88 (23%)		10 (3%)	
Most recent plasma viral load		% excluding 113 unknowns		% excluding 14 unknowns
Undetectable*	165 (42%)	60%	191 (49%)	51%
1-9,999	66 (17%)	24%	83 (21%)	22%
10,000-49,999	20 (5%)	7%	86 (22%)	23%
50,000+	24 (6%)	9%	13 (3%)	3%
Don't know/missing	113 (29%)		14 (4%)	
AIDS diagnosis	202 (52%)		249 (64%)	
AIDS OI ever				
PCP (Pneumocystis pneumonia)	63 (16%)		38 (10%)	
KS (Kaposi's sarcoma)	21 (5%)		18 (5%)	
MAC (Mycobacterium avium complex)	9 (2%)		7 (2%)	
TB (Tuberculosis)	29 (7%)		2 (1%)	
Recurrent pneumonia (twice in 1 year)	37 (9%)		5 (1%)	
Esophageal candidiasis	47 (12%)		32 (8%)	

*Defined as values reported as <30, <50, <75 and <400

two or more viral load tests in the last 12 months and 83% were found to have two or more test in the medical record abstractions. There were higher percentages of participants receiving prophylaxis for PCP and mycobacterium avium complex (MAC) found in the medical charts relative to self-reported interview data. Conversely, a much higher percentage of participants reported receiving TB screening and HBV vaccinations (89% and 45% respectively) as compared to the proportion with these preventive services recorded in their medical records (32% and 8% respectively).

Discussion

A higher percentage of participants receiving care in King County reported being homeless, using non-injection drugs in the last 12 months, being diagnosed with an STI in the last year, and ever being diagnosed with hepatitis C. In addition, a higher percentage reported needing services such as medical care, mental

Table 7: Preventative health services of Washington state Care and Prevention (CAP) participants, 2006-2007

	Questionnaire N=390	Medical Record Abstraction N=390
HAART among to those with lifetime CD4 nadir (interview or chart) < 350	219/261(84%)	228/288 (79%)
2 or more CD4 tests last 12 months	332 (85%)	332 (85%)
2 or more viral load tests last 12 months	316 (81%)	324 (83%)
PCP (pneumocystis pneumonia) prophylaxis (among recent CD4 < 200/14%)	36/60 (60%)	53/73 (73%)
MAC (mycobacterium avium complex) prophylaxis (CD4 < 50)	6/12 (50%)	9/13 (69%)
TB (tuberculosis) screening	348 (89%)	123 (32%)
HBV (hepatitis B virus) vaccination	176 (45%)	32 (8%)

health services, drug and alcohol treatment and case management as compared to the rest of the state. This may in part be due to King County being a major urban setting with HIV-infected patients disproportionately impacted by socioeconomic issues and other co-morbidities, including non-injection drug use, hepatitis C and sexually transmitted infections. Additionally, the majority of patients in King County (61%) were recruited at a site that provides HIV medical care regardless of insurance status or ability to pay. The clinic's patient population is largely low-income with many patients having a co-morbid diagnosis, including mental illness, substance use, and hepatitis B and C.

Outside of King County, fewer people identified as gay, but this may be a result of living in more rural areas where people are less likely to be openly gay. Lower levels of income and education in non-King County residents did not correlate with (as above) greater levels of unmet medical needs – this could be due, in part, to a greater proportion of non-King County residents qualifying for and receiving public insurance.

Comparisons of data collected via interview and medical record abstraction show that although participants knew when and how many CD4 and viral load tests they had, they were less likely able to recall the specific results of those tests. Participants tend to recall profound events in the spectrum of their HIV disease; e.g. in addition to viral load and CD4 tests, illnesses that were AIDS defining, and being on HAART medication. More participants also reported being diagnosed with PCP, tuberculosis and recurrent pneumonia than was reflected in the medical record data. This may be a result of participants confusing prophylaxis treatment as treatment for illness since the abstraction data showed that more participants were on prophylaxis for these illnesses than they reported in the interviews. In the case of TB, participants may also have confused infection (a positive skin test) with active disease. Participants' self reported data regarding being diagnosed with other diseases like tuberculosis or PCP, and whether they were screened for illnesses like hepatitis and tuberculosis, may reflect health care received at other facilities and/or data not present in the medical record that was reviewed.

Although future data collection will allow for additional comparisons of data collected via interview and medical record abstraction, this report shows that many participants were unable to self-report some important clinical results. It is important for individuals infected with HIV to understand and know the approximate results of their CD4 and viral load tests because these are mark-

ers of health and infectivity and help guide treatment initiation and evaluate the success of HAART regimens.

Further, a more complete understanding of these tests may help differentiate declining health status due to HIV versus other factors. These factors may include aging, co-morbidities, lifestyle choices (i.e. smoking, lack of exercise), drug use and addictions, and poor nutrition (whether due to eating choices or treatment side effects of nausea, vomiting, and/or diarrhea). Further, periodic CD4 and viral load testing every three to four months (more often when initiating or changing HAART regimens) is an excellent tool providers use to keep patients engaged in care and to promote discussions of HIV prevention, mental health, substance use, adherence, and other patient education. Since data from CAP reveal that patients are having difficulty remembering their test results and may not understand the importance of these tests, ideally providers could spend more time discussing these tests and what they mean and use the provider-patient interactions as an opportunity to discuss prevention and improve patients' health outcomes, not only for HIV, but for their overall health as well.

Future analyses of CAP data will include more detailed presentation of information collected outside of King County (since the survey is ongoing), about adherence and clinical indicators of HIV, and more comparisons between what was documented in a medical chart versus what was reported by the patient. In order to do so, CAP Washington State Department of Health staff appreciate the continued cooperation, collaboration, and participation of the facilities and their patients.

- *Contributed by Elizabeth Barash, Alexia Exarchos, and Winnie Alston*

CDC Launches New Integration Initiative: Program Collaboration and Service Integration

The National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (NHHSTP) at the U.S. Centers for Disease Control and Prevention held a national consultation in August of 2007 to announce a new strategic priority entitled Program Collaboration and Service Integration (PCSI).

Under the leadership of Dr. Kevin Fenton, Director of NHHSTP, PCSI was introduced to stakeholders as a major initiative to improve collaboration between HIV, TB, STD and Viral Hepatitis programs at the local, state and national level in order to enhance the assessment and integration of preventive and clinical service delivery at the client level. The concept was presented in a 'green paper' detailing the rationale for the initiative, a typology of service integration and proposing interim steps toward greater programmatic collaboration that jurisdictions could implement to enhance the efficiency, efficacy and flexibility of federally and locally funded clinical and preventive services. The PCSI 'green paper' will be finalized into a formal white paper for release by CDC in the late spring of 2008.

In August 2007, the CDC convened a two-day, intensive consultation meeting in Atlanta to plan and prioritize PCSI activities over the next five years. Key stakeholders from over 40 states and project areas were represented at this consultation, including Washington state Office of Infectious Disease and Reproductive Health staff John Peppert (Office Director), Mark Stenger (Epidemiologist III), and Kim Field (Section Manager, Tuberculosis). The first of several planned stakeholder meetings, the August gathering was focused on state-level grantees across HIV, STD, TB and hepatitis programs. Subsequent meetings are planned to include representatives from non-governmental and community based organizations providing direct services to clients.

One day prior to the August meeting, CDC also convened a smaller consultation of STD, HIV, TB and hepatitis disease surveillance experts to discuss how surveillance data and epidemiologic analysis should be used to help to inform PCSI efforts. This group identified strategic gaps in knowledge about co-morbidities, risk population overlap across diseases and useful data products to help programs prioritize service settings and populations for service integration. The surveillance group also identified a number of barriers preventing a better under-

standing of the overlapping epidemics, including a lack of standardized data elements across surveillance systems, a shortage of epidemiologic expertise, and political/policy barriers to matching or merging across disease-specific systems.

Based on evidence of population overlap or increased risk of co-morbidities, service integration at the point of patient/client contact might include enhancements to the availability of testing for STDs or HIV in tuberculosis treatment settings, hepatitis screening and comprehensive reproductive health services in STD clinical environments and comprehensive STD testing and sexual risk-reduction counseling in HIV clinical settings.

The concept of greater collaboration and integration across programs generated very productive and lively discussions across the three days of meetings and a number of recommendations resulted from breakout groups on achieving leadership consensus for enhancing program integration, resolving potential funding issues, expanding epidemiologic and surveillance capacity, potential evaluation and monitoring measures, and a useful typology to act as a yardstick to measure the level of integration achieved (or desired) across related disease categories. Additional materials and a full report on the August consultation are available at www.cdc.gov/nchhstp/programintegration/Default.htm.

- *Contributed by Mark Stenger*

Updating HIV Exposure Categories to include 'Presumed Heterosexual'

HIV transmission category

One important use of HIV surveillance data has been to improve our understanding of HIV transmission. Because individuals may have had several sexual, needle-sharing, or other exposures that could have been the source of HIV infection, the specific route of transmission is often uncertain. Since the early 1980's the data on the CDC HIV/AIDS case report forms describing HIV transmission have remained virtually unchanged. A se-

ries of yes / no questions are asked about individual risk factors. Then, partly based on the epidemiologic investigations of person-to-person transmission, mutually exclusive HIV transmission categories are constructed in a hierarchy from the reported risk factors for each case. Cases are put into the 'No Reported Risk' (NRR) category when none of the other category requirements are met. The CDC standard risk factor questions and the hierarchical transmission categories are shown in Tables 1 and 2 below.

Table 1: Risk factor questions on CDC case report form

After 1977 and preceding the first positive HIV Antibody Test or AIDS diagnosis, this patient had (check all that apply):

Sex with male
Sex with female
Injected non-prescription drugs
Received clotting factor for hemophilia coagulation disorder (factor 8, 9, other)
HETEROSEXUAL relations with any of the following
 Intravenous / injecting drug user
 Bisexual male
 Person with hemophilia / coagulation disorder
 Transfusion recipient with documented HIV infection
 Transplant recipient with documented HIV infection
 Person with AIDS or documented HIV infection, risk not specified
Received transfusion of blood / blood components (excluding clotting factor)
Received transplant of tissue / organs or artificial insemination
Worked in a health-care or clinical laboratory setting

Table 2: CDC transmission category hierarchy for adults/adolescents

Men who have sex with men (MSM) and inject drugs (IDU)
Men who have sex with men but do not inject drugs
Injection drug users excluding men who have sex with men
Hemophiliac
Heterosexual partner is injection drug user
Heterosexual partner is hemophiliac
Heterosexual partner is HIV-infected blood transfusion recipient
Heterosexual partner is known to be HIV-infected with an unspecified risk factor
Transfusion or Transplant Recipient (accepted if the transfusion occurred before 1985 or other investigation confirms this as the most likely source of infection)
Adult Confirmed other risk (used only for some 40 cases nationally with exposure to HIV + blood, body fluids, or concentrated virus in health care, laboratory, or household settings, supported by epidemiologic and laboratory evidence).
Cannot be classified into the above categories (no reported risk or NRR)

Since the CDC transmission categories are hierarchical, there is a chance of misclassification. When a case has more than one risk factor, it is counted only in the first category. However the percentage of cases reported with more than one risk factor is relatively low.

Cases with no reported risk (NRR) do not meet the criteria for any of the transmission categories. In an extreme example, a woman with one lifetime sexual partner and no other risk, who does not know the HIV status of her partner, is considered NRR.

One long-recognized bias of the transmission categories is that heterosexual transmission is counted only when an opposite gender sexual partner is known to be MSM, IDU, or HIV-infected. In an extreme example, a woman with one lifetime sexual partner and no other risk, who does not know that partners' HIV status, is considered NRR. Because of the growing number and proportion of cases such as this, in 2007 the Council of State and Territorial Epidemiologists (CSTE) adopted a position statement on presumed heterosexual transmission. Any women currently classified as NRR is presumed heterosexual transmission if she has the following risk factors

- Has had sex with a man
- Has not injected drugs

Cases that already have a transmission category, or who are missing the risk factor information above, or are men, are not reclassified.

Implementing the presumed heterosexual transmission category in King County

Starting with the First Half 2007 Epidemiology Report Annual Review of HIV Epidemiology of King County, we adopted the use of the presumed heterosexual transmission category in our calculations (See Table 3, below). In our original calculations, there were 461 cases with heterosexual transmission according to the CDC hierarchy, and 518 cases with NRR. After we identified 127 women who had sex with men, and who denied injecting drugs, there were 588 cases of presumed heterosexual transmission, and 391 cases with NRR. Only 2% of total cases were affected. Thus the impact of this CSTE position statement is relatively low in King County.

- *Submitted by Jim Kent and Amy Bauer*

Additional detailed explanation of the HIV exposure category hierarchy can be found in these locations:

1. Council of State and Territorial Epidemiologists Position Paper 2007-ID-09 "Heterosexual HIV Transmission Classification," accessed online 1/4/2008 at www.cste.org/PS/2007ps/2007psfinal/ID/07-ID-09.pdf
2. CDC HIV Epidemiology Report 2005, Technical Notes, accessed online 1/4/2008 at www.cdc.gov/hiv/topics/surveillance/resources/reports/2005report/technicalnotes.htm
3. Lee LM, et al. Classification of transmission risk in the national HIV/AIDS surveillance system. Public Health Rep. 2003;118:400-7

Table 3: King County residents living with HIV/AIDS as of 6/30/2007

Transmission category	Without Presumed Heterosexual		With Presumed Heterosexual	
	Number	Percent	Number	Percent
Men who have sex w/men (MSM)	4,381	69%	4,381	69%
Injection drug user (IDU)	355	6%	355	8%
Heterosexual contact	461	7%	588	9%
Blood product exposure	36	1%	36	1%
MSM-IDU	550	9%	550	9%
Perinatal exposure	19	<1%	19	<1%
Undetermined / other / no reported risk	518	8%	391	6%
TOTAL	6,320		6,320	

HIV prevalence, incidence and risk behaviors among Seattle-King County STD Clinic clients, 1988-2004

Public Health- Seattle & King County (PHSKC) conducted annual HIV seroprevalence surveys in the PHSKC Sexually Transmitted Diseases (STD) Clinic in the second half of the year from 1988 to 2004. These surveys were initially part of the Centers for Disease Control and Prevention (CDC) National HIV Serosurveillance System (1988- 1999).^{1,2} Leftover blood specimens collected for clinical purposes were tested for HIV antibodies after removal of personal identifiers and linked via an anonymous code to data collected from client clinic records. Due to the anonymous design, the results of these HIV tests on leftover serum can not be provided to clients. Only data from the first visit of each eligible patient in each survey period were included. However, data from the same client may be included in different years. Data from STD Clinic clients seen exclusively for HIV testing were excluded. The less sensitive HIV-1 EIA (Serological Testing Algorithm for Recent HIV Seroconversion, STARHS) methodology described by Janssen et al. was used to estimate HIV incidence in the years 1990 – 2003.³ The unlinked nature of the survey avoids participation bias and helps assure a representative sample of the survey population while preserving the anonymity of STD Clinic clients. The survey is approved by the Washington state Institutional Review Board.

Our findings among eligible STD clinic clients from the 17 years of the survey are summarized below. Results are combined for all women and men who have sex with women only (MSW) because of the similar HIV seroprevalence and presented separately for men who have sex with men (MSM). The acronyms MSW and MSM are used because men are classified, for the purpose of this report, according to the gender of their sex partners.

Results

Women and men who have sex with women only - HIV prevalence and trends (Table 1)

Data from 23,547 visits by women and MSW were included in the survey between 1988 and 2004. A little over one-third (38%) were women. Over half (58%) were white, 26% African American, 6% Hispanic, 5% Asian/Pacific Islander, 2% American Indian/Alaska Native, and 4% of another race or ethnicity. Sixty percent were younger than age 30. The gender distribution remained stable over the years of the survey. The proportion of White, Hispanic and Asian/Pacific Islander clients

increased while the proportion of African American clients decreased from 32% to 21% from 1988-90 to 2003-04. Seven percent had injected drugs at some time in their life and 3.0% had injected in the 12 months prior to their visit.

Samples from 88 (0.6%) men and 27 (0.3%) women tested positive for HIV. HIV prevalence declined from 0.8% in 1988-90 to 0.2% in 1997-98 and increased again to 0.7% in 2003-04. The recent increases were seen predominantly among 30-39 year old men. In 2003-04, HIV prevalence was very high in American Indian/Alaska Native men, but the numbers were small. HIV prevalence fluctuated in several of the racial/ethnic groups over the years, however, with the exception of 2003-04, Hispanic and African American clients had consistently higher seroprevalence than White and Asian/Pacific Islander clients in almost every time period. There were no HIV infections detected among clients younger than 20 and HIV prevalence declined among 20-29 year olds. HIV prevalence increased in recent years among 30-39 year olds and remained unchanged among clients 40 years and older. HIV prevalence was higher among clients who reported ever having injected drugs in most survey years, including 2003-04. None of the female/MSW STD clients who injected drugs in the past year have been HIV positive since this information was first collected in 1993. The proportion of clients diagnosed with gonorrhea at the visit declined from 9% in 1989-90 to 2% in 2003-04. However, the proportion who were HIV-positive among those diagnosed with gonorrhea increased significantly from 0.7% 1989-90 to 7% in 2003-04 due to increases in HIV prevalence in men.

Men who have sex with men - HIV prevalence and trends (Table 2)

A total of 3,758 visits included in the survey were visits by male STD clients who reported sex with other men (including MSM who also were injection drug users [IDU]). They comprised 20% of male STD Clinic clients, increasing from 10% in 1988-90 to 34% in 2003-04. The demographic and risk exposure characteristics were very different from those of the female and MSW STD Clinic population. Over three-quarters (77%) were White, 7% African American, 7% Hispanic, 4% Asian/Pacific Islander, 2% American Indian/Alaska Native, and 3% of another race/ethnicity. The proportion of White MSM declined from 83% in 1988-90 to 74% in 2003-04 while the proportion of Hispanic and Asian/Pacific Is-

lander MSM increased. Forty-five percent were younger than 30 years of age. A history of drug injection was reported by 8%; 4% had injected in the year prior to their visit.

A total of 490 (13%) MSM were infected with HIV. During the 17 annual survey periods, only two of the 83 MSM younger than 20 years tested HIV positive. HIV prevalence in African American MSM was higher than in White MSM, particularly in recent years when African American MSM had 2.5 times the HIV prevalence of White MSM.

HIV prevalence declined from 32% in 1988-90 to 5% in 1997-98 reaching a low of 4% in 1997 when the trend reversed and increased to 6% in 1998 and 11% in 1999, 7% in 2000, 12% in 2001, 15% in 2002, 12% in 2003, and 14% in 2004. In addition to the overall increasing trend among MSM since 1997, statistically significant increases were seen in several sub-categories. HIV prevalence tripled in White MSM and more than tripled in black MSM between 1997-98 and 2003-04. The increase was most pronounced among MSM 30 years and older. There were no HIV-positive cases among MSM who injected drugs in the past year from 1997 to 2001, but in 2001-02, 5 of the HIV-positive MSM reported injecting in the past year. Throughout the survey years MSM who were diagnosed with gonorrhea were more likely to be HIV-positive. By 2001-02 the HIV prevalence among MSM with gonorrhea had increased to 1989-90 levels of 37%. In 2003-04 HIV prevalence among MSM diagnosed with gonorrhea was 31%. The vast majority (88%) of those diagnosed with gonorrhea were known HIV-positives (see section on HIV testing for additional information about knowledge of HIV status).

Recent sexual behaviors 2003-2004 (Table 3)

Among STD Clinic clients surveyed in 2003-04, 16% of the females and MSW reported five or more sex partners in the last year compared to just over half (51%) of the MSM. HIV prevalence among MSM who reported 5 or more sex partners in the last year was 15%. By reverse analysis, 59% of HIV-positive MSM had 5 or more sex partners in the last year. Almost three times as many MSM (35%) reported two or more new sex partners in the past two months compared to women and MSW (11% and 13%, respectively). Very few clients reported sex with an IDU in the past year. Among those who did, 33% of the MSW and 50% of the MSM were themselves current IDU; none of the women who reported sex with an IDU were themselves IDU. Very few females and MSW reported sex with HIV-infected

persons in the past year and none of those who did were themselves HIV-positive. Thirteen percent of the MSM clients reported sex with an HIV-infected person in the past year and 26% of these men were themselves HIV-positive; all but 1 person already knew that he was HIV-positive at the time of the visit. Five percent of women reported sex with a bisexual man and 21% of MSM reported sex with women in the past year--5% of these MSM were HIV-positive compared to 15% of the MSM who did not report sex with women.

HIV testing and knowledge of serostatus 2003-2004 (Table 4)

Among female/MSW STD clients surveyed (had blood drawn) in 2003 and 2004, 67% of women and 70% of the men had a history of a previous HIV test (not necessarily at the STD Clinic) and 91% of the men and 92% of the women had an HIV test at their current visit. Of the 870 women, only 1 (0.1%) tested HIV-positive and she had been previously diagnosed with HIV infection. Among the 1,594 MSW, 17 (1%) tested HIV-positive. Of these, 11 (65%) had previously tested HIV-positive, an additional two (12%) were tested at the clinic visit. There was no evidence that the remaining four men (24%) knew their positive HIV status.

Among the 806 MSM clients surveyed (had blood drawn) in 2003 and 2004, 91% had previously been tested for HIV. Seventy-five percent had an HIV test at the current visit and an additional 10% were known to be HIV-positive. Of the 103 (13%) MSM who were HIV-positive, 78 (76%) already knew their serostatus at the time of the visit, an additional 10 (10%) tested positive at the visit. Fifteen (15%) of the HIV-positive MSM may not have known their status because they did not have a history of a prior HIV-positive test and did not get tested at the current visit. Ninety percent of the HIV-negative MSM correctly reported their status at the time they attended the STD Clinic. The percent of HIV-positive MSM who were aware of their status after the visit increased from 59% in 1999 to 85% in 2003-04.

HIV incidence 1990 – 2003 (Table 5)

The less sensitive HIV-1 EIA (LS-EIA) was performed on 442 HIV-positive specimens from 1990-2003, including samples from 76 females/MSW and 366 MSM. There were too few recent HIV infections among females/MSW to allow valid calculation of HIV incidence. Twenty-eight of the 366 HIV-positive samples from MSM tested non-reactive on the LS-EIA indicating recent HIV infection. Specimens from clients with a history of a previous HIV-positive test date more than 6 months before the current blood draw, or at an unknown date,

Table 1: HIV Prevalence and Trends Among Female and Men who have Sex with Women Only (MSW) STD Clinic Clients, King County 1988-2004

Characteristics	Total ¹	1988-90	1991-92	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04
	N (column %)	N (HIV%)							
Total	23,547 (100.0)	4,683 (0.8)	2,875 (0.5)	2,973 (0.3)	2,736 (0.3)	2,711 (0.2)	2,487 (0.3)	2,618 (0.6)	2,464 (0.7) ⁴
Sex									
Male	14,621 (62.1)	2,950 (0.9)	1,769 (0.6)	1,886 (0.4)	1,667 (0.4)	1,567 (0.2)	1,562 (0.3)	1,626 (0.7)	1,594 (1.1) ⁴
Female	8,926 (37.9)	1,733 (0.5)	1,106 (0.4)	1,087 (0.3)	1,069 (0.3)	1,144 (0.3)	925 (0.2)	992 (0.3)	870 (0.1)
Race/ethnicity⁵									
White	13,557 (57.9)	2,259 (0.4)	1,542 (0.4)	1,734 (0.2)	1,592 (0.3)	1,600 (0.2)	1,432 (0.1)	1,617 (0.4)	1,481 (0.7) ^{3,4}
African American	6,025 (25.7)	1,489 (1.1)	878 (0.8)	787 (0.6)	630 (0.5)	584 (0.5)	604 (0.5)	545 (1.1)	508 (0.6)
Hispanic	1,282 (5.5)	213 (0.9)	172 (0.6)	147 (1.4)	126 (1.6)	160 (0)	159 (1.3)	126 (2.4)	179 (0.6)
Asian/PI	1,088 (4.7)	148 (0.7)	89 (0)	108 (0)	142 (0)	120 (0)	152 (0)	174 (0)	155 (0)
AI/AK Native	440 (1.9)	103 (3.9)	47 (2.1)	57 (0)	58 (0)	54 (0)	47 (0)	37 (0)	37 (8.1) ⁴
Other	1,027 (4.4)	142 (0.7)	136 (0)	138 (0)	175 (0)	181 (0)	83 (0)	86 (0)	86 (1.2)
Age (years)									
<20	2,432 (10.9)	699 (0)	378 (0)	353 (0)	267 (0)	244 (0)	196 (0)	166 (0)	129 (0)
20-29	10,959 (49.3)	2,298 (0.8)	1,420 (0.5)	1,391 (0.3)	1,288 (0.1)	1,214 (0)	1,034 (0.2)	1,191 (0.3)	1,123 (0.1) ²
30-39	6,187 (27.8)	1,177 (1.3)	711 (0.8)	787 (0.6)	700 (0.7)	729 (0.4)	702 (0.3)	711 (1.4)	670 (1.5) ⁴
40+	2,676 (12.0)	496 (0.4)	327 (0.6)	441 (0.2)	448 (0.7)	263 (0.8)	251 (0.8)	243 (0.8)	207 (0.5)
IDU ever									
No	21,954 (93.2)	4,382 (0.6)	2,656 (0.4)	2,758 (0.3)	2,534 (0.3)	2,549 (0.2)	2,303 (0.3)	2,451 (0.6)	2,321 (0.7) ⁴
Yes	1,593 (6.8)	301 (3.7)	219 (2.3)	215 (1.4)	202 (0.5)	162 (0)	184 (0.5)	167 (0)	143 (2.1) ^{2,4}
IDU last year⁶									
No	15,448 (96.6)	NA	NA	2,857 (0.4)	2,596 (0.4)	2,626 (0.2)	2,391 (0.3)	2,541 (0.6)	2,437 (0.7) ^{3,4}
Yes	541 (3.4)	NA	NA	116 (0)	140 (0)	85 (0)	96 (0)	77 (0)	27 (0)
Sex w/IDU ever									
No	21,599 (91.7)	4,444 (0.7)	2,563 (0.4)	2,719 (0.3)	2,454 (0.3)	2,467 (0.2)	2,250 (0.2)	2,429 (0.6)	2,273 (0.7) ^{3,4}
Yes	1,948 (8.3)	239 (1.7)	312 (1.6)	254 (0.4)	282 (0.4)	244 (0.4)	237 (0.8)	189 (0)	191 (1.6)
Gonorrhea⁷									
No	21,240 (96.4)	2,890 (0.5)	2,680 (0.5)	2,892 (0.3)	2,692 (0.3)	2,669 (0.2)	2,437 (0.2)	2,562 (0.5)	2,418 (0.6) ⁴
Yes	787 (3.6)	273 (0.7)	195 (1.5)	81 (0)	44 (2.3)	42 (0)	50 (2.0)	56 (5.4)	46 (6.5) ^{3,4}

¹ Individual categories may not add up to total because of missing data. Age was missing for 1,293 records and race/ethnicity was missing for 128 records.

² Indicates statistically significant decreasing trend between 1988-90 and 2003-04 at p<0.05.

³ Indicates statistically significant increasing trend between 1989-90 and 2003-04 at p<0.05.

⁴ Indicates statistically significant increasing trend between 1997 and 2004 at p<0.05.

⁵ PI = Pacific Islander; AI = American Indian; AK = Alaskan.

⁶ IDU in the last year; collected 1993-2004.

⁷ Gonorrhea diagnosis; at this visit collected 1989-2004.

NA = Data not available.

Table 2: HIV Prevalence and Trends Among Men who have Sex with Men (MSM) STD Clinic Clients, King County 1988-2004

Characteristics	Total ¹	1988-90	1991-92	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04
	N (column %)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)	N (HIV%)
Total	3,758 (100.0)	311 (32.2)	298 (19.1)	323 (12.4)	319 (7.8)	411 (4.9)	572 (8.9)	718 (13.1)	806 (12.8) ^{2,4}
Race/ethnicity⁵									
White	2,863 (76.7)	258 (32.6)	243 (19.8)	252 (12.3)	222 (7.2)	306 (3.9)	435 (9.2)	552 (12.0)	595 (11.9) ^{2,4}
African American	273 (7.3)	21 (28.6)	28 (25.0)	22 (9.1)	28 (10.7)	34 (8.8)	35 (22.9)	47 (31.9)	58 (29.3) ⁴
Hispanic	262 (7.0)	--	--	24 (4.2)	24 (12.3)	21 (0)	51 (5.9)	39 (12.8)	73 (9.6)
Asian/PI	152 (4.1)	--	--	--	--	--	22 (0)	42 (9.5)	52 (9.6)
AI/AK Native	60 (1.6)	--	--	--	--	--	--	--	--
Other	121 (3.2)	--	--	--	23 (4.4)	28 (7.1)	--	--	--
Age (years)									
<20	81 (2.4)	--	--	--	--	--	--	--	--
20-29	1,451 (42.7)	139 (28.1)	123 (13.0)	138 (13.0)	136 (7.4)	178 (5.1)	197 (1.5)	274 (8.8)	266 (5.6) ²
30-39	1,341 (39.4)	118 (34.7)	116 (22.4)	109 (13.8)	96 (8.3)	136 (5.9)	217 (14.3)	274 (16.4)	275 (17.5) ^{2,4}
40+	509 (15.0)	44 (38.6)	47 (29.8)	64 (10.9)	72 (6.9)	35 (2.9)	56 (10.7)	77 (11.7)	114 (21.1) ^{2,4}
IDU ever									
No	3,447 (91.7)	290 (31.4)	249 (18.1)	292 (12.7)	287 (7.7)	387 (4.7)	518 (9.1)	669 (12.7)	755 (11.8) ^{2,4}
Yes	311 (8.3)	21 (42.9)	49 (24.5)	31 (9.7)	32 (9.4)	24 (8.3)	54 (7.4)	49 (18.4)	51 (27.5) ⁴
IDU last year⁶									
No	3,035 (95.6)	NA	NA	303 (12.2)	299 (8.0)	398 (5.0)	550 (9.3)	691 (12.9)	794 (12.6) ^{3,4}
Yes	114 (3.6)	NA	NA	20 (15.0)	20 (5.0)	--	22 (0)	27 (18.5)	--
Sex w/IDU ever									
No	3,412 (90.8)	287 (32.8)	256 (18.8)	288 (12.2)	282 (7.8)	381 (4.5)	507 (8.9)	661 (13.0)	750 (11.5) ^{2,4}
Yes	346 (9.2)	24 (25.0)	42 (21.4)	35 (14.3)	37 (8.1)	30 (10.0)	65 (9.2)	57 (14.0)	56 (30.4) ⁴
Gonorrhea⁷									
No	3,415 (92.8)	203 (27.1)	263 (13.7)	309 (11.3)	307 (7.2)	385 (4.4)	539 (8.7)	655 (10.8)	754 (11.5) ^{2,4}
Yes	265 (7.2)	30 (36.7)	35 (60.0)	--	--	26 (11.5)	33 (12.1)	63 (36.5)	52 (30.8) ^{2,4}

¹ Individual categories may not add up to total because of missing data. Age was missing for 361 records and race/ethnicity was missing for 27 records.

² Indicates statistically significant decreasing trend between 1988-90 and 2003-04 at p<0.05.

³ Indicates statistically significant increasing trend between 1989-90 and 2003-04 at p<0.05.

⁴ Indicates statistically significant increasing trend between 1997 and 2004 at p<0.05.

⁵ PI = Pacific Islander; AI = American Indian; AK = Alaskan.

⁶ IDU in the last year; collected 1993-2004.

⁷ Gonorrhea diagnosis at this visit; collected 1989-2004.

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

NA = Data not available.

were excluded because antiretroviral treatment or a compromised immune system in an HIV-infected person may cause a non-reactive LS-EIA results that could be falsely interpreted as recent HIV infection. The estimated annual HIV incidence ranged from 0.9% in 1994-1995 to 4.5% and 3.2% in 1990-91 and 2002-2003, respectively (Table 5). HIV prevalence rates and their 95% confidence intervals are also given for comparison. Although there was a suggestion of an increasing trend in HIV incidence between 1994-95 and 2002-03 the differences were not statistically significant.

Comments

Over the 17 survey years, HIV prevalence remained low among women and MSW STD Clinic clients. HIV prevalence, however, did increase between 1997-98 and 2003-04, particularly among 30-39 year old MSW, and since 1989-90, also increased among those diagnosed with gonorrhea. HIV prevalence was higher among Afri-

can American and Hispanic female/MSW clients during many of the survey years, but not in the two most recent years. HIV prevalence among MSM clients declined sharply from 1988-90 to 1997-98 but rose thereafter through 2003-04. HIV prevalence was 12 times higher among MSM compared to MSW. There was a much greater racial discrepancy in HIV prevalence among MSM than among non-MSM, with 2.5 times higher HIV prevalence among African American MSM compared to White MSM. None of the women and MSW clients who reported injecting illicit drugs in the last year were HIV positive and there were too few MSM IDU in recent years to assess HIV prevalence in this group.

The increasing trends in HIV prevalence among MSW and MSM STD Clinic clients parallel the increasing trends in the number of persons known to be living with HIV in King County, which is thought to be due in large measure to increased survival rates resulting from introduction of more effective treatments in 1996 (See Figure 1 under Summary Tables and Figures, Page 6). The in-

Table 3: HIV prevalence and recent sexual behaviors among STD Clinic clients, King County 2003-04

Recent sexual behaviors	Women ¹	Men who have sex with women only		Men who have sex with men	
	N (%)	N (%)	% HIV+	N (%)	% HIV+
Total	870	1,594	1.1	806	12.8
No. of sex partners last year					
0 sex partners	64 (7.4)	198 (12.5)	4.6	45 (5.6)	22.2
1 sex partner	221 (25.4)	331 (20.8)	0.6	57 (7.1)	12.3
2 – 4 sex partners	442 (50.9)	809 (50.9)	0.1	288 (36.1)	8.3
5 or more sex partners	142 (16.3)	252 (15.9)	2.0	408 (51.1)	15.0
No. of partners last 2 months					
0 sex partners	174 (20.0)	330 (20.7)	1.5	69 (8.6)	8.7
1 sex partner	471 (54.1)	758 (47.6)	0.5	247 (30.7)	10.9
2 or more sex partners	225 (25.9)	506 (31.7)	1.6	490 (60.8)	14.3
No. of new partners last 2 months					
0 new sex partners	552 (63.5)	950 (59.6)	1.2	339 (42.1)	13.9
1 new sex partner	222 (25.5)	439 (27.5)	0.2	189 (23.5)	9.0
2 or more new sex partners	96 (11.0)	205 (12.9)	2.4	278 (34.5)	14.0
Sex with IDU last year					
Yes	30 (3.5)	39 (2.5)	0	27 (3.4)	25.9
Sex with HIV+ last year					
Yes	--	--	--	105 (13.0)	25.7
Exch. \$ or drugs for sex last year					
Yes	36 (4.1)	97 (6.1)	0	27 (3.4)	3.7
Sex with MSM last year (women)					
Yes	43 (4.9)	NA	NA	NA	NA
Sex with women last year (MSM)					
Yes	NA	NA	NA	167 (20.7)	4.8

¹ Because there was only 1 HIV positive women in the 2003-04 surveys, HIV prevalence is not included for women.

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

NA = Data not available.

crease in the proportion of MSM who were aware of their HIV-positive status and the increase in HIV prevalence in older age groups, but not in younger age groups, indicate that the rise in prevalence does not necessarily reflect a rise in new infections. On the other hand, the doubling in HIV incidence (although not statistically significant) in MSM between 1996-97 and 2002-03 is worrisome, especially in view of the continuing increases in gonorrhea and syphilis cases in MSM in King County, and does raise concern about increased rates of HIV infection among MSM.⁴ While it is very encouraging that such a high percent of MSM were aware of their HIV-positive status in recent years, still about 15% may not have known their HIV status, even after a visit to the STD clinic. Further it is very concerning that such a high percent of MSM diagnosed with HIV reported multiple sex partners and were in need of STD Clinic services.

There are some limitations to this survey. First, not all STD clinic clients have blood drawn, which may bias the observed HIV prevalence rates if blood draw is related

to HIV status. We therefore obtained data on basic demographic characteristics, male-male sex, and self-reported HIV status among clients seen during the survey periods who did not have blood samples drawn. If self-reported HIV status among MSM clients with no blood draws are taken into account then the "true" HIV prevalence among MSM STD Clinic clients would have been slightly higher prior to 2000 and similar from 2001-2004. HIV prevalence among women and MSW clients with and without blood draws did not differ markedly in any of the survey years. Second, because the annual surveys are cross-sectional, differences in client characteristics in different survey years may make comparisons across years less valid. Finally, the accuracy of the information depends on the accuracy of the STD Clinic records. However, data needed for the survey are rarely missing.

Because STD clinics serve large numbers of persons at increased risk for HIV due to unprotected sex and multiple sexual partners, these clinics continue to be important sites for monitoring emerging patterns and trends

Table 4: Knowledge of HIV status in relation to the STD Clinic visit, 2003-2004

Correct knowledge of HIV serostatus	MSW HIV Status		MSM HIV Status	
	HIV+ N=17 N (%)	HIV- N=1,577 N (%)	HIV+ N=103 N (%)	HIV- N=703 N (%)
Knew at time of visit	11 (64.7)	1,105 (70.1)	78 (75.7)	633 (90.0)
Knew after visit*	2 (11.8)	428 (26.9)	10 (9.7)	58 (8.3)
May <u>not</u> have known after visit	4 (23.5)	44 (2.8)	15 (14.6)	12 (1.7)

* If HIV results were given

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

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

* The 95% confidence interval (CI) is the interval within which the point estimate (prevalence or incidence) is expected to fall 95% of the time.

in local HIV epidemiology. The findings from this survey warrant continued close monitoring of HIV, other STDs and associated risk behaviors as well as a heightened emphasis on prevention among local MSM.

We greatly appreciate the collaboration of the PHSKC STD Clinic and Laboratory which made this survey possible.

For additional information about the survey, please call Hanne Thiede at 206-296-4318 or hanne.thiede@kingcounty.gov.

- *Contributed by Hanne Thiede*

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Public Health—Seattle & King County adopts strategic plan for HIV prevention

At its September 2007 meeting, the King County Board of Health endorsed a new Public Health HIV/AIDS Program initiative, the [Strategic and Operational Plan for HIV Prevention in King County](#). (To see a copy of the Strategic Plan, please visit our webpage at www.metrokc.gov/health/apu/#new). Importantly, this Plan establishes a new, community-wide goal for reducing the number of new HIV infections in King County by 25% by 2015 and sets several strategies for how we can achieve it. The HIV/AIDS Program has routinely adjusted resource allocations toward more effective prevention services, but meeting this significant but achievable goal will require further reprioritization and refocusing of programs. This Strategic Plan will also require a greater role for governmental and community-based partners in HIV testing, HIV education and other HIV-related health issues.

The plan incorporates the work of both an internal Public Health planning group and Seattle HIV/AIDS Planning Council, the local community planning group. In addition to relying on these processes, the HIV/AIDS Program collaborated closely with the King County Board of Health's HIV/AIDS Committee in developing a strategic vision for HIV prevention in our county.

Goals and objectives

The ultimate goal of the HIV/AIDS Program's prevention programming has always been to prevent the transmission and acquisition of HIV. Over the last decade, the number of newly diagnosed infections in King County has generally remained between 350 and 400 cases. In the face of declining state and federal resources, and an increasing population of HIV-infected people who are living longer with the disease and able to transmit it to those who are uninfected, this represents a success for our current HIV prevention efforts. However, we undertook the strategic planning process to more efficiently allocate our resources in order to reduce new infections. To reach the community-wide goal of a 25% reduction in new HIV infections, the HIV/AIDS Program has developed specific goals and measurable outcome objectives that form the basis of the Strategic Plan. These represent the changes that we believe must occur in order to reduce the spread of HIV infection in King County. They will provide a lens through which program staff will make funding decisions, both for internal Public Health

programs and for the community-based organizations that are our partners in HIV prevention. The goals focus on identification of new HIV cases and reducing the sexual and drug-using risk behaviors in high-risk populations that lead to the spread of HIV.

Goal 1: To identify new HIV cases, especially among men who have sex with men (MSM), injection drug users (IDU) and foreign-born blacks.

Investing in HIV testing services makes sense. It is estimated that over half of new infections result unsafe sexual and drug use behaviors by individuals unaware of their infection.^{1,2} Once people learn of their HIV infection, they reduce their risk behaviors an average of 60% in the 12 months following their diagnosis.³⁻⁷ Additionally, testing services link newly diagnosed HIV-infected individuals to life-saving monitoring and treatment. Medical treatment that reduces viral load also decreases the probability of HIV transmission, at least at a population level, further enhancing the prevention benefit of case finding.⁸ Thus, we are confident that our prior and continued efforts at increasing investments in HIV testing will help us make progress toward our community-wide goal of reducing new infections.

Goal One requires a mix of testing efforts geared to the populations we know are at highest risk (MSM, MSM/IDU, and IDU), those that are emerging populations (foreign-born blacks), and the moderate-risk and general populations in which HIV-infected people may remain unaware of their infections for many years. Every effort will be made to link people diagnosed with HIV through these testing efforts to HIV care services. Under Goal One, the HIV/AIDS Program seeks to accomplish the following objectives by 2015:

- Increase the proportion of individuals newly diagnosed with HIV who are interviewed for partner notification services from 50% to 75%.
- Decrease the percentage of people who receive an AIDS diagnosis within 12 months of being diagnosed with HIV from 33% to 25%, with an emphasis on eliminating the disparities among racial and ethnic groups.
- Decrease the proportion of MSM newly diagnosed with HIV who have never tested from 12% to 6%.
- Decrease the median test interval from last test among previously HIV-tested MSM with newly diagnosed HIV from 12 months to 6 months.
- Increase the number of foreign-born blacks (FBB)

who have tested since moving to the United States (baseline and targets to be determined).

- Increase the percentage of health care settings with threshold HIV prevalence of 0.1% that routinely provide HIV testing from the current 0% to 30%.

Paradoxically, success in achieving Goal One may actually result in an increase in newly diagnosed infections that are reported through the surveillance system in the first few years, while the reductions won't be seen until later. We are confident that we can make strong progress toward the outcome objectives in Goal One.

Goal 2: To reduce sexual and drug risk behaviors among HIV-negative and HIV-infected men who have sex with men, injection drug users and foreign born black heterosexuals.

HIV testing is not a comprehensive solution to the epidemic. Behavioral interventions attempt to educate people about their risk and help them reduce their risk behaviors. Goal Two focuses specifically on behavior change among those most at risk, rather than moderate-risk or low-risk populations, because a reduction of risk behaviors in the high-risk populations will have a greater impact on HIV incidence. Behavioral interventions are especially critical for HIV-infected individuals. As HIV-infected individuals live longer and feel healthier, some are more sexually active and are at greater risk for transmitting HIV and/or acquiring other STD. Under Goal Two, the HIV/AIDS Program seeks to accomplish the following objectives by 2015:

- Decrease the proportion of HIV-infected individuals who engage in unprotected anal or vaginal intercourse with non-concordant partners from 25% to 20%.
- Decrease the proportion of HIV-negative MSM who engage in unprotected anal intercourse with unknown and non-concordant serostatus partners from 14% to 10%.
- Decrease the proportion of HIV-infected MSM who report methamphetamine use in the last 12 months from 22% to 18%.
- Decrease the proportion of HIV-negative MSM who report methamphetamine use in the last 12 months from 9% to 7%.
- Increase the proportion of IDU who obtain at least 75% of their syringes from pharmacies or syringe exchange (baseline and targets to be determined).
- Increase the proportion of IDU who report not sharing with more than 1 partner in the last three months (baseline and targets to be determined).

Implications for funding

The HIV/AIDS Program will continue prioritizing use of HIV prevention funds for case finding and behavioral interventions focused on the highest risk populations, with special efforts directed toward those initiatives that most directly address the outcome objectives. Public Health currently funds the following services that have a direct bearing on achieving the outcome objectives of Goals One and Two:

- Case finding among MSM, MSM/IDU, foreign-born blacks, and IDU;
- Early identification of new infections through nucleic acid amplification testing on all blood specimens taken from men who have sex with men seeking HIV testing at the STD Clinic and Gay City;
- Increased attention to and funding for partner counseling and referral services;
- Promotion of single use of sterile syringes through syringe exchange and pharmacy sales;
- Community-based behavioral interventions for each of the priority populations in King County;
- Initial work to implement routine HIV testing in response to CDC guidance promoting routine testing to find previously undiagnosed cases of HIV.

The Strategic Plan will guide future activities in the following ways:

- In 2008, Public Health has set aside funds to promote HIV awareness and testing messages for high-risk MSM.
- In order to identify more early cases of HIV infection, we will seek to expand NAAT testing to other venues where MSM receive health services.
- Foreign-born blacks are an emerging population in which case numbers continue to increase, and late diagnoses are common. This plan requires shifting more resources into testing for this population.
- The greatest change proposed is a reduction in testing resources for moderate-risk populations. These services currently take up almost a quarter of our internal HIV/AIDS Program spending; reductions will free up resources to better target higher risk populations.
- Because MSM continue to be the most impacted population, this plan dictates a shift of resources toward more services for MSM.
- To reduce crystal methamphetamine use among MSM, we will look for ways to increase support of drug treatment and /or contingency management activities.
- Because we have a growing population of HIV-

infected individuals who are feeling healthier and may be more sexually active, we must assure that services are in place to help them maintain safer behaviors.

- In September 2006, the CDC recommended that every person, age 13-64 be tested at least once for HIV in the process of routine care. It will take several years to successfully implement routine HIV testing in most clinics, hospitals, and emergency rooms. CDC's goal in making its recommendation was to ask the help of the larger medical community and of the health insurance industry to find people unaware of their HIV infection. Public Health will need to model this routine testing, and do extra work with the private health care sector, so some resources are being devoted to this new initiative. However, we want to reserve the bulk of HIV prevention funding for efforts targeting populations at greatest risk.
- The HIV/AIDS Program will continue to work with the Washington state Department of Health, the AIDSNET Council, and the Washington state Association of Local Public Health Officers to promote changes to the Washington Administrative Code that will enable many of these new testing initiatives, especially those around routine testing and PCRS.

Many challenges lay ahead in the implementation of the Strategic Plan and we have already seen positive outcomes associated with its development. Local community service providers are aware of the goals and objectives and have begun to align their program's outcome with plan objectives. The HIV/AIDS Program has started the process of revising our competitive Request-For-Proposal process to more effectively solicit program proposals that work toward our goals and objectives. We have shifted our funding priorities for programs funded within Public Health. Additionally, through the efforts of members of the King County Board of Health, we have received \$300,000 in extra funding from the City of Seattle and King County to implement the plan's recommendations. Significant shifting of funding priorities does not happen quickly within any large governmental agency, however, the Strategic Plan has provided the focus to make the changes that will realize a 25% reduction in new HIV infections by 2015.

- *Submitted by Barb Gamble and Karen Hartfield*

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Variant, Atypical, and Resistant HIV Surveillance (VARHS): News and Updates

NEWS: Drug resistance testing is now STRONGLY recommended at the time of HIV diagnosis: As of the December 1 2007 "Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents", developed by the DHHS Panel on Antiretroviral Guidelines for Adults and Adolescents (www.aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf), the DHHS panel gives an unequivocal, strong recommendation for early antiretroviral drug resistance testing. The exact wording is below:

The Panel recommends performing genotypic drug resistance testing for all treatment-naïve patients entering into clinical care, regardless of whether antiretroviral therapy is to be initiated (AIII). This recommendation is based on the fact that transmitted resistance mutation may be detected at a time point more proximal to the time of infection than later. Repeat testing may be considered at the time when therapy is to be initiated (CIII).

Previous versions had moderately strong recommendations to test before commencing antiretroviral therapy. AIII indicates a strong recommendation based on expert opinion and CIII is an optional recommendation based on expert opinion.

NEWS: VARHS to go Statewide! Starting in January of 2008, the VARHS project is expanding beyond the confines of King County. As was done in King County, the Washington state project will begin with public health laboratories and gradually expand to the private sector.

VARHS overview: Since July 2003, Public Health-Seattle and King County (PHSKC) has conducted surveillance for resistance to anti-retroviral (ARV) drugs among treatment-naïve persons newly diagnosed with HIV infection. VARHS objectives are to:

- monitor the prevalence of circulating resistant strains among recently infected individuals who test positive for HIV infection confidentially
- monitor the prevalence of non-B subtypes
- identify characteristics of those with and without drug resistant strains of HIV
- follow the outcomes of individuals with and without drug resistant strains of HIV.

We estimate that approximately 50% of newly diag-

nosed cases in King County are currently eligible for VARHS and we are preparing to routinely receive genotype test results (obtained from genotypic testing in routine clinical practice) from a second large regional laboratory. Check out the King County VARHS web site for additional information: www.metrokc.gov/health/apu/epi/varhs/.

VARHS results: Standard ARV genotypic assays test for resistance in three ARV drug classes: protease inhibitors (PI), nucleoside reverse transcriptase inhibitors (NRTI), and non-nucleoside reverse transcriptase inhibitors (NNRTI). Among the 593 VARHS eligible specimens that have been successfully genotyped to date, approximately 12% show evidence of high-level resistance to drugs in at least one ARV class. NNRTI drug class resistance remains the most common (10%), while both NRTI and PI class resistance are less prevalent (4% and 3%, respectively). Multi-class drug resistance (MDR), defined as high-level resistance to one or more ARV in each of at least 2 drug classes, exists in 19 (3%) specimens. Of these 19 MDR cases, 8 (42%) have resistance to all three drug classes.

MDR cluster: VARHS staff initially identified two cases of HIV-1 infection with similar drug resistance profiles in the spring of 2006. Five additional antiretroviral naïve individuals and two treatment-experienced patients (9 total cases) with similar HIV-1 strains have now come to our attention by reports from medical providers or laboratories. Eight cluster members have had a second genotypic resistance test performed on blood drawn on a different day that confirmed the initial results, and somewhat consistent phenotype results have been received for three cluster members. Phylogenetic tree analysis showed that the viruses from all nine individuals were very similar strains of HIV-1. All nine cluster members reported methamphetamine use and sex with multiple anonymous male partners.

- *Contributed by Susan Buskin, Libby C Page, and Christina Thibault*

Table 1: Demographic characteristics of patients with genotype results, VARHS 2003-2007, Seattle, Washington, USA

	% of genotyped N=593	% of MDR N=19
Registration type		
Confidential	73	84
Anonymous	27	16
Gender		
Male	87	95
Female	10	5
Unknown	3	0
Age in years		
<25	15	11
25-44	65	68
45+	18	21
Unknown	2	0
HIV risk category		
MSM	62	79
IDU	4	0
MSM/IDU	11	11
Other, including no risk identified	24	10
Race/ethnicity		
White	57	79
Black	19	11
Latino/Hispanic	12	0
Asian/Pacific Islander	5	0
Other, including Native American & Mixed	1	0
Unknown	6	11
County of origin		
	Excluding 191 (32%) with missing data	Excluding 5 (26%) with missing data
US	75	93
Other	25	7
Viral load		
	Excluding 258 (43%) with missing data	Excluding 6 (32%) with missing data
<20,000	33	62
>=20,000	67	38
Genotype results		
Any high level resistance	12	100
PI	3	74
NRTI	4	89
NNRTI	10	79
Multi-class resistance	3	100
HIV-1 subtype		
B	88	79
Non-B	9	11
Unknown	4	11

Research update from the University of Washington AIDS Clinical Trials Unit

The approval of 3 new antiretrovirals (ARVs), two in new drug classes, in the last year has led to exciting new treatment options for people with drug-resistant HIV. A first-in-class CCR5 entry inhibitor (maraviroc), a first-in-class integrase inhibitor (raltegravir), and a new second generation non-nucleoside reverse transcriptase inhibitor (NNRTI) (etravirine) have greatly expanded HIV treatment options for treatment-experienced people.

Maraviroc was approved by the U.S. Food and Drug Administration (FDA) on August 6, 2007 for use in combination with other antiretroviral drugs for the treatment of adults with CCR5-tropic HIV-1, who have been treated with other HIV medications. Rather than fighting HIV inside white blood cells, maraviroc prevents the virus from entering uninfected cells by blocking the predominant route of entry, the CCR5 co-receptor. The CCR5 receptor is a protein on the surface of some immune cells, which in complex with binding to the CD4 receptor, allows HIV to enter the cell. About half of people with drug-resistant HIV have HIV which uses the CCR5 receptor to enter and infect new CD4+ or T helper cells. A special test is necessary to determine if the HIV virus uses the CCR5 receptor, called the Trofile™ assay. Maraviroc is marketed under the trade name Selzentry™.

Integrase is an HIV viral enzyme which facilitates transfer of HIV's genetic code into a person's own cells. The FDA approved raltegravir for the treatment of HIV infection in combination with other antiretroviral agents in treatment-experienced adult patients who have evidence of resistant to multiple antiretroviral agents. Raltegravir is the first agent of the pharmacological class known as HIV integrase strand transfer inhibitors, designed to interfere with the enzyme that HIV-1 needs to multiply. Raltegravir, marketed under the trade name Isentress™, received FDA approval on October 16, 2007.

The FDA approved etravirine for the treatment of HIV infection in adults who have failed treatment with other ARVs on January 18, 2008. Etravirine is an NNRTI that helps to block an enzyme which HIV needs to multiply. Etravirine is marketed under the trade name Intelence™. Development of etravirine was based on the observation of anti-HIV activity of etravirine against NNRTI-resistant HIV strains. This drug may also be useful for people who become infected with NNRTI-resistant HIV, not an uncommon event. [Editor's note: local prevalence of primary NNRTI resistance is about 10%, see the VARHS News and Updates article, earlier

in this report.]

These drugs all seem to be well-tolerated by most people. The challenge to the HIV specialist is how to best use these new drugs. The critical decisions include the timing of the use of these new agents and combining these new agents. A new study at the UW ACTU will address these challenges. However, the goal of achieving durable HIV viral suppression is now in reach for many more treatment-experienced patients.

Study A5241, known as the OPTIONS trial, is a trial for treatment-experienced people, asking the question of whether it is necessary to include nucleoside analog reverse transcriptase inhibitors (NRTIs) when using various combinations of these new agents. The study will provide the following ARVs, including the new ARVs discussed above:

- maraviroc (CCR5 entry inhibitor)
- raltegravir (integrase inhibitor)
- etravirine (2nd generation NNRTI)
- darunavir (newest protease inhibitor)
- tipranavir (protease inhibitor)
- enfuvirtide (fusion inhibitor).

Based on resistance testing and the Trofile™ assay conducted by the study, an optimal regimen using combinations of these newest ARVs will be constructed and then subjects enrolled in the trial will be randomized to include or not include NRTIs in their new treatment regimen. (Neither the NRTIs nor ritonavir will not be provided by the study nor will ritonavir.) For many people with drug-resistant HIV, it is now possible to offer 3 new drugs to which their HIV is sensitive and potentially achieve durable viral suppression. Eliminating the NRTIs in their regimen might reduce side effects; however there is some evidence that there may be some benefit to including the NRTIs in the regimen, thus the justification and importance of this study. It is expected that almost 600 people will have to be screened to obtain the 354 people needed to conduct this study. The UW AIDS Clinical Trials Unit continues to conduct other studies as well to evaluate treatment strategies both for the initial therapy of HIV and rescue studies and seeks referrals for these and other studies. The UW ACTU is also conducting studies in HIV-infected people of two of the newest vaccines to prevent herpes zoster (shingles) and human papilloma virus (HPV) infection which is associated with cervical and anal cancer. For more information, visit our web site at www.uwactu.org or call us at 206-744-3184.

- *Submitted by Jeffrey Schouten, MD, AAHIVS, JD*

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The following is a list of studies open for enrollment. Screening, lab tests and clinical monitoring that are part of a study are provided free of charge for participants. Enrollment in a study at the ACTU does not replace the role of a primary care provider. The ACTU coordinates efforts with each participant's primary care provider. **Providers and potential enrollees can call the ACTU at 206.744.3184 and ask for Eric Helgeson for appointments or additional information.**

Antiretroviral Studies		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV infected people at least 16 years of age • HIV viral load (HIV level) currently 1000 copies/mL or higher • Currently on an HIV drug regimen that includes a protease inhibitor (PI) • Have resistance to multiple types of HIV medications • Had exposure to multiple types of HIV medications 	<p style="text-align: center;">(Study 5241)</p> <p>To determine if adding nucleoside analogue reverse transcriptase inhibitors (NRTIs) to a novel antiretroviral regimen for volunteers who are triple-class antiretroviral-experienced or resistant is beneficial</p> <p>Two strategies will be evaluated: 1) including or not including NRTIs in a new regimen and 2) the use of continuous phenotype susceptibility (cPSS) score to help choose study regimens. The treatment response will then be observed.</p> <p>The study will make available several new drugs, including raltegravir, darunavir, tipranavir, etravirine, enfuvirtide and, if a subject has R5-tropic HIV, maraviroc</p>	<p><u>Part 1 – Continue current medications</u></p> <ul style="list-style-type: none"> • Genotype/phenotype/ tropism assays performed – these tests determine what HIV medications would be effective • A regimen is identified with a sum of at least 2 active medications • Study clinician, primary health care provider, and volunteer select study regimen and NRTIs from among options identified <p><u>Part 2 - New Study Regimen</u></p> <ul style="list-style-type: none"> • Randomization if cPSS >2.0 (greater than 2 active HIV medications) <ul style="list-style-type: none"> • Arm A: Study Regimen plus NRTIs for 48 weeks • Arm B: Study Regimen without NRTIs for 48 weeks • Registration if cPSS ≤2.0 (Observational Arm) <ul style="list-style-type: none"> • Arm C: Study Regimen plus NRTIs for 48 weeks • Up to 100 subjects may be enrolled <p>Screening, Part 2 pre-entry, Part 2 entry and then at weeks 1, 4, 8, 12, 16, 24, 36 and 48. Visits include physical exams and blood draws.</p>
<ul style="list-style-type: none"> • Acquired HIV-1 infection within the past 6 months • HIV viral load at least 500 copies/ml • CD4 T cells at least 350 cells/mm³ • No prior HIV treatment • No HIV progression to CDC category B or C disease • No history of pancreatitis 	<p style="text-align: center;">(Study 5217)</p> <p>To compare the safety and effectiveness of 36 weeks of treatment versus no treatment.</p>	<p>Screening, pre-entry, entry and weeks 1, 2, 4, and then every 4 weeks. Up to 96 weeks. Visits include physical exams, blood draws, and questionnaires</p> <p>Randomized (like flipping a coin) to either:</p> <p>Group A: Treatment with Emtricitabine/Tenofovir DF and lopinavir/ritonavir for 36 weeks (provided by study). After 36 weeks, participants will stop taking study medications.</p> <p style="text-align: center;">or</p> <p>Group B: No treatment (observation)</p> <p>At any time during the study, participants who are not on anti-HIV drugs may be encouraged to begin or restart based on symptoms or lab test results.</p>

Rescue Studies		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV positive men and women 18-65 years of age • Previously treated with HIV medications but have been off HIV meds at least 16 weeks • HIV viral load over 2,500 • Stable CD4 (T cell count) 250 or over • Detectable HIV viral load on HIV treatment in past that included the following classes: <ul style="list-style-type: none"> -- 1 or more Nucleoside Reverse Transcriptase Inhibitor (NRTI) and 1 or more Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI) 2 or more Protease Inhibitors (PIs) or 1 PI plus 2 mutations to PIs OR -- Resistance to 1 or more NRTI and 1 or more NNRTI and resistance to one or more PIs 	<p>(Study #201)</p> <p>To evaluate the safety and tolerability of KP-1461 for 3 months in HIV infected subjects.</p>	<p>Screening, pre-entry, entry, weeks 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 22, and 26</p> <p>Visits involve a physical exam, EKG (screening, entry, wks 8 & 13) and blood draws.</p>

Complications of HIV and Other Conditions		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV-positive men and women 18 to 65 years old with memory or thinking problems • Worsening mental function • On stable HIV regimen for at least 16 weeks that doesn't include atazanavir. • Not pregnant or breast feeding • Able to sit or stand for at least 2 hours • Willing to have two spinal taps 	<p>(Study #5235)</p> <p>Study will evaluate if minocycline is safe and effective for treatment of thinking problems in people infected with HIV.</p>	<p>Subjects are randomized at entry to minocycline or placebo. At the end of 24 weeks, may receive open-label minocycline for an additional 24 weeks.</p> <p>Minocycline provided by study. Anti-HIV treatment not provided.</p> <p>Length of Study: Step 1 – 24 weeks. Step 2 – 24 weeks (Optional Open Label).</p>

Other Studies		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • No active or chronic heart or lung disease • No cigarette smoking in last 90 days • Not pregnant • No use of inhaled nasal or lung medication • No respiratory infection or bronchitis within 3 weeks 	<p>(Study #080)</p> <p>To see if alveolar macrophages is a reservoir for HIV</p>	<p>No study drug or treatment</p> <p>The macrophage cells will be collected by a bronchoalveolar lavage procedure (BAL) in the pulmonary lab</p>
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV-positive men and women 18 years or older • Currently on HIV drugs for at least 6 months • CD4 T cell count less than 200 • HIV viral load less than 200 copies/mL for at least 6 months • Not pregnant or breast feeding • No use of androgens (corticosteroids, growth factors or investigational agents) • No evidence of pancreatitis 	<p>(Study #5212)</p> <p>To see if palifermin can increase CD4+ T cell counts in HIV-infected individuals.</p>	<p>Arm A: palifermin placebo (no active medication) daily for 3 days</p> <p>Arm B: palifermin 20 mcg/kg IV daily for 3 days</p> <p>Arm C: palifermin 40 mcg/kg IV daily for 3 days</p> <p>Arm D: palifermin 60 mcg/kg IV daily for 3 days</p>

Neuropathy
Currently None Available

HIV & Women Studies
Currently None Available

Studies for HIV 'Negative' participants		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV negative • Age 18-65 years • No active heart or lung disease • No hypertension • Not pregnant • No blood draws or donations within 6 weeks of screening 	<p>(Study #084)</p> <p>To study factors that control HIV infection in the test tube in a type of white blood cells called macrophages. This study may also help us learn more about how HIV infects cells.</p>	<p>Up to 5 study visits</p> <p>Screening</p> <p>3 on-study visits at ACTU for 100cc blood draw</p> <p>Two thirds of participants will undergo a leukapheresis procedure at the Clinical Research Center at UWMC</p>
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV negative • Male or non-pregnant female, age 18-50 • No history of heart, liver, or kidney disease • No history of cardiac disease, abnormal EKG, or low heart rate • No smoking for at least one month before and throughout the study 	<p>(Study #170)</p> <p>To determine if cytochrome P450 (CYP) enzymes and the multidrug resistant transporter (P-gp) are significantly induced after chronic administration of nelfinavir, ritonavir or rifampin.</p>	<p>Part One</p> <p>Visit Set One :</p> <p>Day 1: Bupropion</p> <p>Day 2: Mini-cocktail (digoxin & midazolam).</p> <p>Day 3-16: Randomized (like flipping a coin) to receive nelfinavir, ritonavir or rifampin for 12-21 days.</p> <p>Visit Set Two:</p> <p>Day 16: Bupropion</p> <p>Day 17: Mini-cocktail (digoxin & midazolam).</p> <p>Day 18-24: No drugs administered</p> <p>Day 25-38: Randomized to receive one of the two drugs not chosen on day 3 for 12-16 days.</p> <p>Visit Set Three:</p> <p>Day 38: Bupropion</p> <p>Day 39: Mini-cocktail (digoxin & midazolam).</p> <p>Day 40-46: No drugs administered</p> <p>Day 47-60: for 12-16 days.</p> <p>Visit Set Three:</p> <p>Day 60: Bupropion</p> <p>Day 61: Mini-cocktail (digoxin & midazolam).</p> <p>ALL ON-STUDY VISITS WILL BE AT THE CLINICAL RESEARCH CENTER AT UWMC</p>

Visit our new website at www.uwactu.org and find out about our latest studies, meet our staff, and find out about our outreach programs.

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