



**Sexually Transmitted Diseases
Epidemiology Report, 2006**

Public Health – Seattle and King County 2006 STD Epidemiology Report

Data sources

King County morbidity data:

This report describes case numbers and rates of infection for three sexually transmitted infections in the King County population. These three infections (chlamydial infection, gonorrhea, and syphilis) are notifiable diseases in Washington State. Medical providers and laboratories are required by law to report all laboratory confirmed cases of these infections to Public Health – Seattle & King County (PHSKC). The PHSKC STD Control Program forwards these reports to the Washington State Department of Health. For this report, yearly infection totals are based on year of diagnosis, rather than year of report. The numbers contained in the Chlamydial Infection, Gonorrhea, and Syphilis sections of this report are for 1992-2006 cases reported and processed by the Washington State Department of Health through April 23, 2006.

Population data:

Incidence rates were calculated using population estimates provided by the Washington State Office of Financial Management for intercensal years, and U.S. census data for 2000. Population data for the years 2006 are not yet available; population data from 2005 were utilized to calculate incidence figures for 2006.

Population estimates for men who have sex with men (MSM), and well as HIV positive and negative MSM, were provided by the PHSKC HIV/AIDS Epidemiology Unit.

Data limitations: Notifiable disease data are subject to several limitations. In some cases, considerable differences in numbers and rates of infection between subgroups are attributable in large part to screening and testing practices. For example, the rate of chlamydial infection in King County is substantially higher among women than men, reflecting national recommendations that young women be screened for chlamydia annually, and the absence of corresponding recommendations for young men.

While chlamydial infection, gonorrhea, and syphilis are all notifiable diseases in Washington State, these data are subject to underreporting by physicians and laboratories. Additionally, because undiagnosed infections cannot be reported, infections which are frequently experienced with no symptoms, such as chlamydia, may exist at higher levels in the population than notifiable disease data indicate.

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Chlamydial Infection

In 2006, 5319 cases of chlamydial infection were reported among King County residents, representing an overall incidence of 294 per 100,000 people (Table 1). This number is a slight decrease from 2005, when there were 5527 reported cases of chlamydial infection in King County (Table 3). In 2006, 3558 cases were reported among women, for an incidence of 392 per 100,000 women, and 1761 cases were reported among men, for an incidence of 196 per 100,000 men (Table 1).

Similar to patterns observed in previous years, the incidence of reported chlamydial infection varied substantially by race and age in King County in 2006. Among women, incidence was highest among black women (1615 per 100,000 women), followed by Native American (1010 per 100,000), Asian (506 per 100,000), and white (252 per 100,000) women (Table 2). A similar pattern was observed among men, although incidence of chlamydial infection was more similar among Native American (309 per 100,000), Asian (121 per 100,000), and white men (134 per 100,000) than was the case among women (Table 2). Among women, 2006 chlamydial infection incidence was highest among 15-19 year olds (2481 per 100,000) and 20-24 year olds (1996 per 100,000), while among men, incidence was highest among 20-24 and 25-29 year olds (873 per 100,000 and 628 per 100,000, respectively) [Table 2, Figure 4]. Higher rates among women than men both overall and within most age and race groups largely reflects differential screening practices in King County, whereby asymptomatic women are routinely screened for chlamydial infection and men are not.

In 2006, the incidence of reported chlamydial infection among 15-29 year old women in King County continued a downward trend, first observed in 2005, after a period of increasing incidence in this age group from 2001 through 2004 (Figure 1). Similar increases in the incidence of chlamydial infection from 2001 through 2004, followed by a stabilization of rates in recent years, have been noted on a statewide (Washington State excluding King County) and national basis (Figure 1). The increase observed in national chlamydial incidence during this time is likely due at least in part to increased screening among women in states which did not previously have screening programs. Changes in testing technology may also have influenced trends in incidence. Locally, PHSKC began pilot testing nucleic acid amplification tests (NAATs) for chlamydial infection in 1994; this more sensitive test may have resulted in increases in chlamydia diagnoses in the years following 1994. All PHSKC clinics were using NAATs by the end of 1999. Among 15-29 year old male residents of King County, chlamydia incidence decreased somewhat from 2005 (692 per 100,000 men) to 2006 (581 per 100,000 men)[Table 4].

The Infertility Prevention Project (IPP) is a national program that provides routine screening and treatment services for chlamydial infection to patients seen in family planning, sexually transmitted disease, and selected other clinics. All patients meeting selective screening criteria are screened in these clinics, thereby providing an estimate of the prevalence of infection among young women, regardless of symptoms. Figure 2 displays IPP chlamydia prevalence (the number of positive chlamydia tests divided by all chlamydia tests performed) among women ages 15-29 for King County and all other Washington counties for 1998-2006. Chlamydial infection prevalence has been stable among King County women since 2000 (Figure 2). In

contrast, among other women in Washington State, chlamydial prevalence increased rapidly from 2001 to 2004, and has been roughly stable since. The extent to which these divergent trends reflect true differences in chlamydial morbidity vs. changing patterns in the populations tested is not certain. The number of tests for chlamydial infection performed both in King County and other Washington State counties as a part of the IPP fell in 2005 (Figure 3). This decrease in the number of tests may have contributed to the slight decrease in the incidence of chlamydial infection observed among King County women from 2005 to 2006 (Table 3).

Because reporting is likely more complete among women than among men and morbidity associated with chlamydial infection is concentrated in women, age and race trends for chlamydial infection over time are shown for women only (Figures 4 and 5). Presented analysis of trends over time by race are also limited to women ages 15-29, the group in which incidence is highest. While chlamydia incidence increased slightly in all racial groups except whites from 2005 to 2006 (Figure 5), there was a decline in incidence among 15-19 year old women, the age group which has historically experienced the highest incidence of chlamydia among women (Figure 4).

Table 1: Number of Reported Cases and Chlamydia Incidence, King County, WA, 2006

	Cases	Incidence per 100,000 population
Sex		
Women	3558	392
Men	1761	196
Total cases	5319	294

Table 2: Number of Reported Cases and Chlamydia Incidence in Men and Women, by Age and Race King County, WA, 2006

	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
	Women (N=3558)		Men (N=1761)	
Race [†]				
White	1286	234	678	117
Black	713	1672	521	1104
Nat Am	75	1063	16	214
Asian/PI	398	436	128	143
Other	73		30	
Multiple	162		40	
Unknown	851		348	
Age [*]				
0-9 years	3	3	0	0
10-14 years	54	101	8	14
15-19 years	1259	2298	265	468
20-24 years	1225	1879	502	759
25-29 years	532	773	369	506
30-34 years	230	331	238	318
35-44 years	194	136	268	180
45-55 years	38	27	89	63
>=56 years	14	7	15	9
Unknown	9		7	

* Cases with unknown race or age were included in race and age specific rates after being distributed among race/age categories based on the distribution of cases with known race or age. In 2006, among women, 851 case reports were missing race, and 9 missing age, and among men, 348 case reports were missing race, and 7 were missing age.

† Race specific rates exclude cases reported with "multiple" or "other" races.

**Table 3: Number of Reported Chlamydia Cases and Incidence among Men and Women
King County, WA, 1992-2006**

Year	Women		Men		Total	
	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
1992	3030	379	968	124	3998	253
1993	2566	316	813	102	3379	210
1994	2745	335	811	101	3556	219
1995	2414	292	804	99	3218	196
1996	2359	282	880	107	3239	195
1997	2247	266	905	108	3152	188
1998	2454	287	1073	127	3527	207
1999**	2690	311	1336	156	4026	234
2000	3004	344	1441	167	4445	256
2001	2862	324	1390	159	4252	242
2002	3007	337	1468	166	4475	252
2003	3441	385	1748	197	5189	292
2004	3650	406	1782	200	5432	304
2005	3638	401	1889	210	5527	306
2006	3558	392	1761	196	5319	294

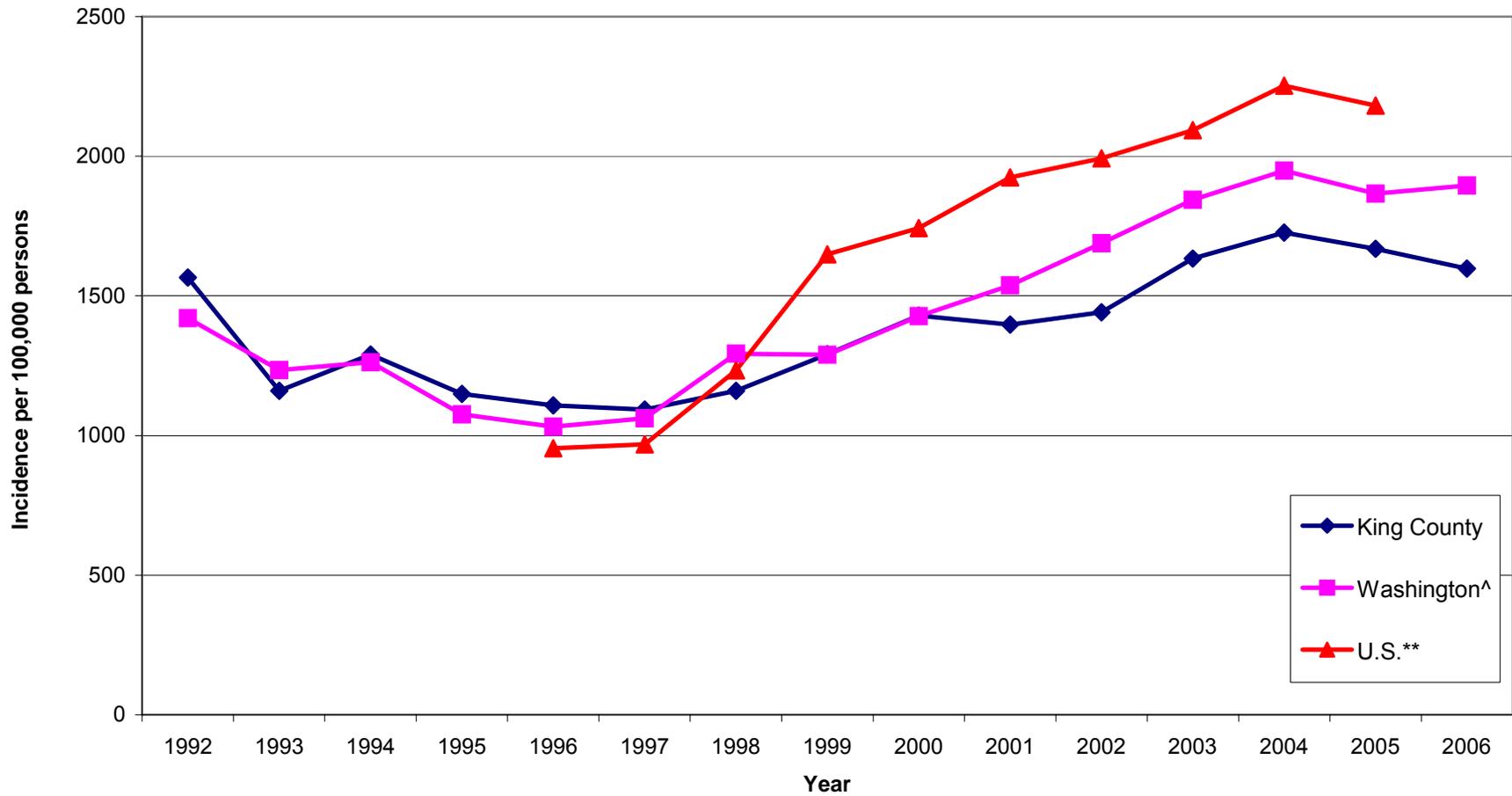
** Some PHSKC clinics began using NAATS testing for chlamydial infection in 1994, and all PHSKC clinics were using NAATs by 1999.

**Table 4: Number of Reported Chlamydia Cases and Incidence among Men and Women
ages 15-29, King County, WA, 1992-2006**

Year	Women, ages 15-29		Men, ages 15-29		Total, ages 15-29	
	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
1992	2718	1392	804	451	3522	1001
1993	2011	1160	688	386	2699	767
1994	2221	1290	632	355	2853	815
1995	1983	1149	629	351	2612	743
1996	1928	1108	658	364	2586	729
1997	1920	1093	636	348	2556	713
1998	2063	1160	773	417	2836	781
1999**	2306	1291	897	482	3203	879
2000	2569	1430	990	530	3559	971
2001	2528	1397	910	484	3438	932
2002	2630	1441	1026	542	3656	983
2003	2998	1634	1188	624	4186	1119
2004	3212	1747	1162	602	4374	1154
2005	3158	1721	1318	692	4476	1160
2006	3024	1598	1141	581	4164	1080

* Cases with unknown age were included age specific counts and rates after being distributed among age categories based on the distribution of cases with known age.

**Figure 1: Chlamydia Incidence among Women ages 15-29*, 1992-2006
King County, Washington State^, and U.S.**

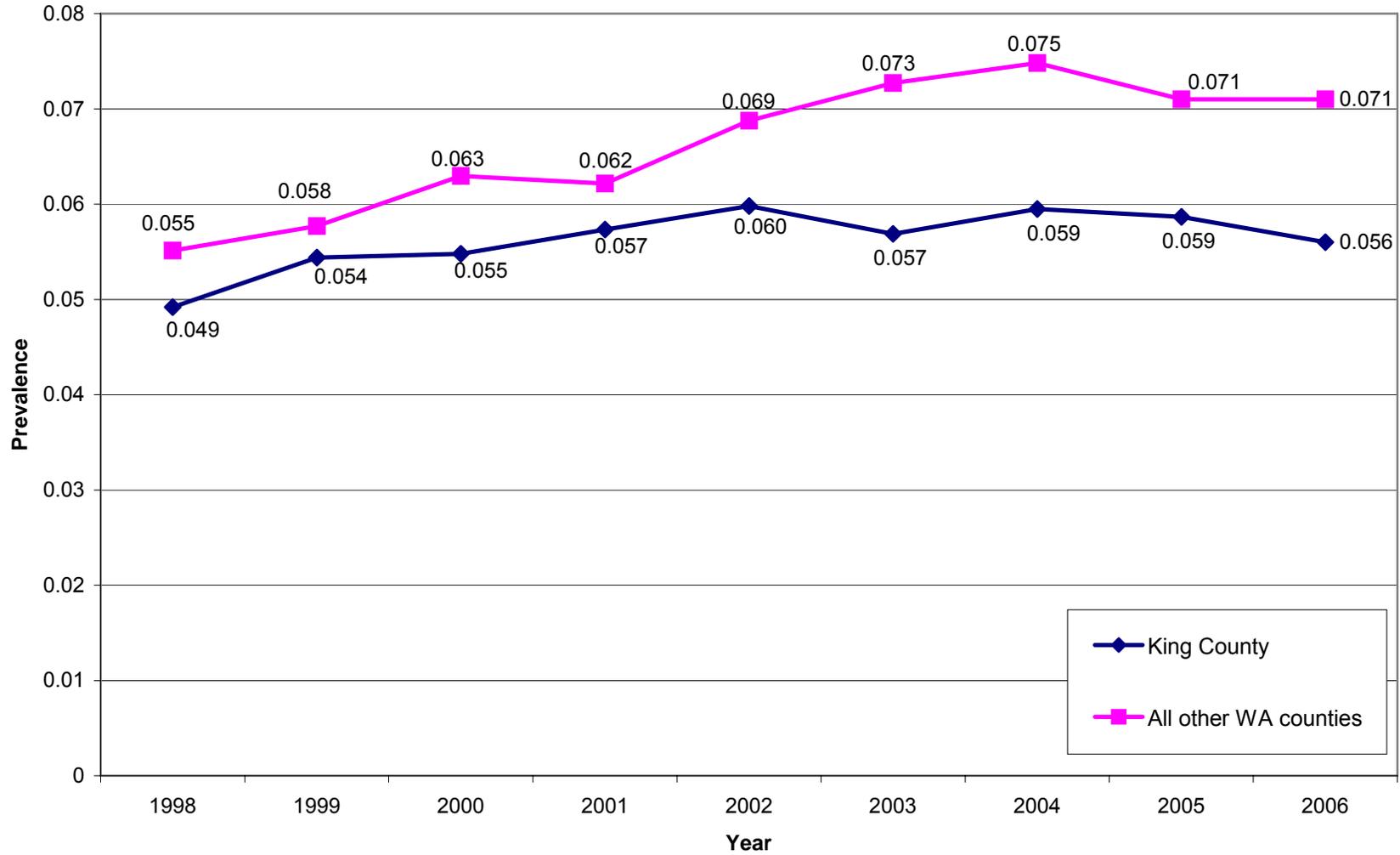


* Cases with unknown age were distributed according to annual age distributions among cases with known age and included in age-specific rates.

** National data for 2006 were not available at the time this report was prepared.

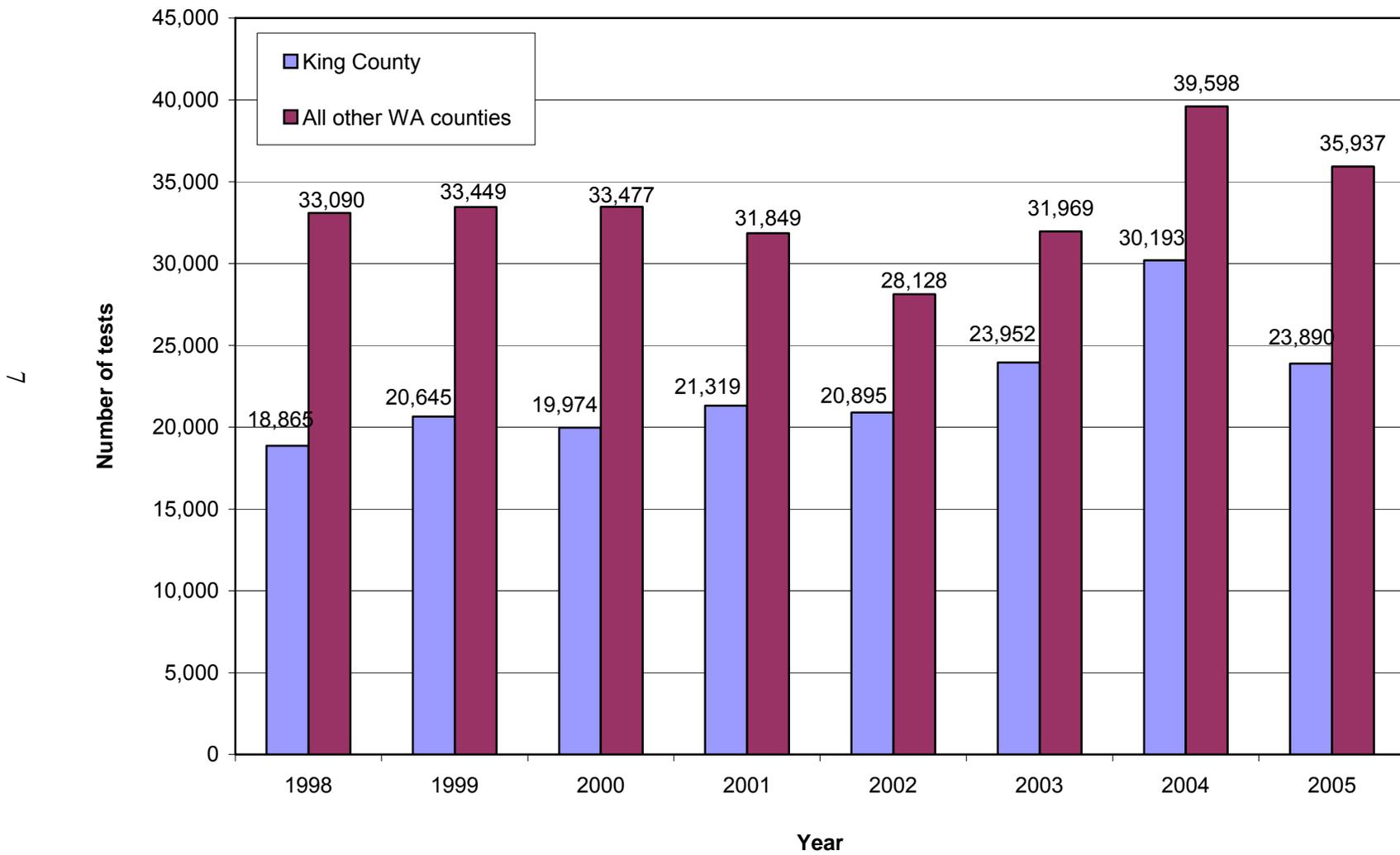
^ Washington State rates exclude King County.

**Figure 2: Chlamydia Prevalence among Women ages 15-29 in King County and All Other Washington Counties*
Infertility Prevention Project, 1998-2006**

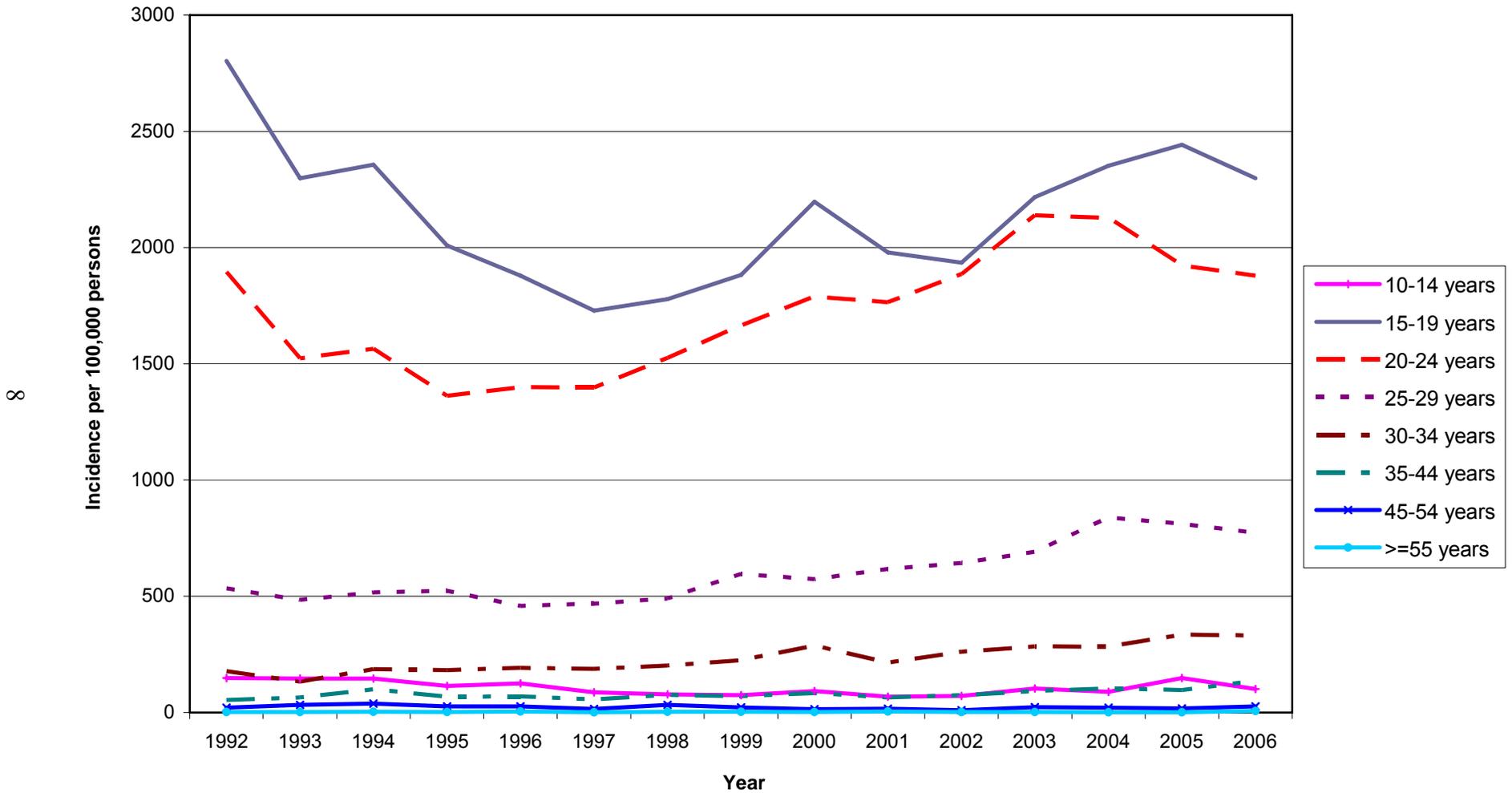


* County is based on the zip code of the reporting clinic

Figure 3: Chlamydia Laboratory Tests Performed in King County and All Other Washington Counties Through the Infertility Prevention Project, 1998-2005

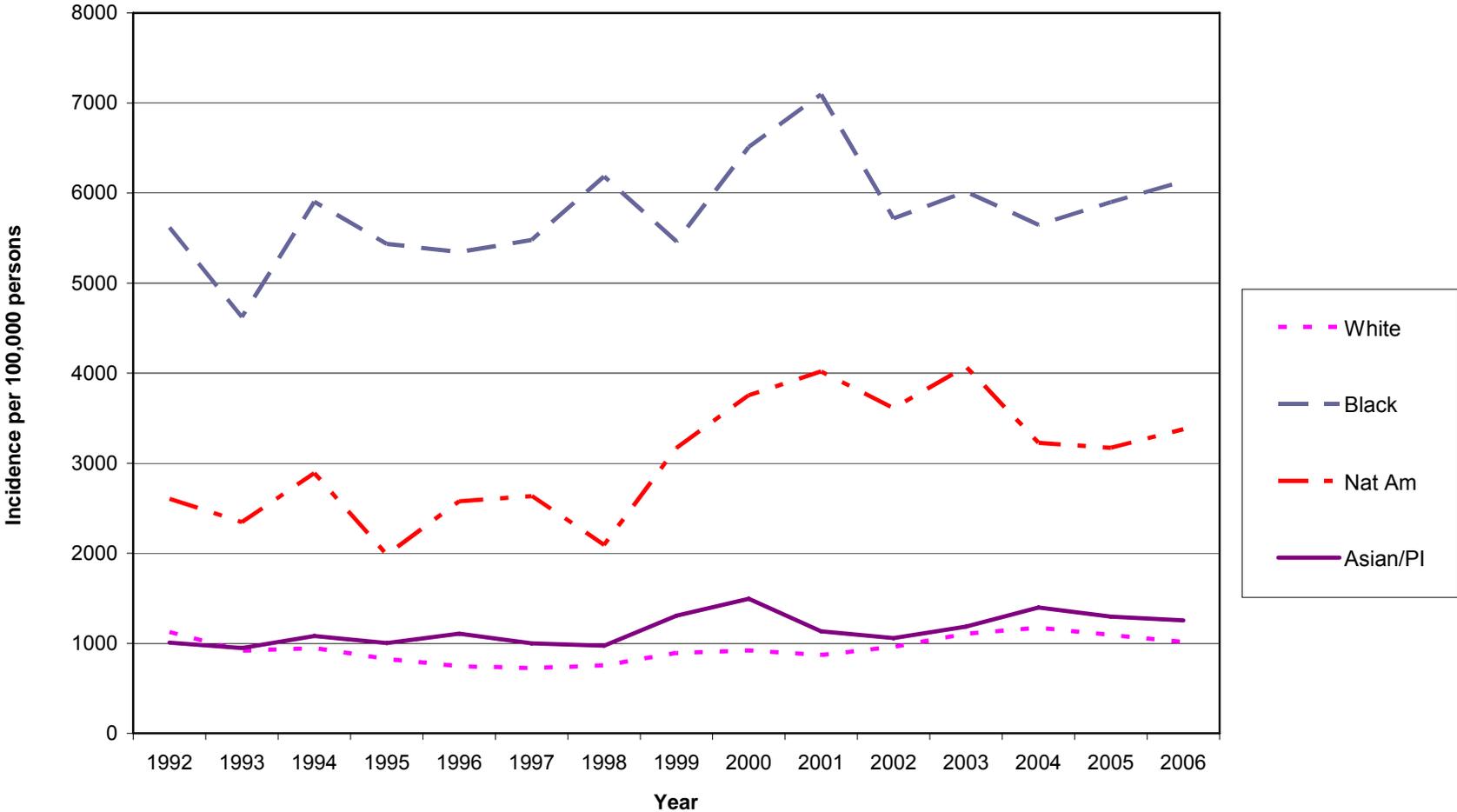


**Figure 4: Reported Chlamydial Infection by Age* Among Women
King County, WA, 1992-2006**



* Cases with unknown age were distributed according to annual age distributions among cases with known age and included in age-specific rates.

**Figure 5: Reported Chlamydial Infection by Race Among Women Ages 15-29*
King County, WA, 1992-2006**



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* Cases with unknown race and age were distributed according to annual race and age distributions among cases with known race and age and included in age-specific rates.

Gonorrhea

In 2006, there were 1987 reported cases of gonorrhea in King County, for an overall incidence of 110 per 100,000 persons (Table 5). Gonorrhea incidence among men (148 per 100,000 men) was almost twice that among women (78 per 100,000), most likely due to the relatively high rate of gonorrhea among men who have sex with men (MSM) compared to heterosexual men and women (Figure 13). Continuing an upward trend in gonorrhea incidence first observed in 2005, the incidence of reported gonorrhea was higher among both women and men in 2006 than in 2005, although increases observed from 2005 to 2006 were not as marked as those observed from 2004 to 2005 (Table 7).

Interpreting King County epidemiologic gonorrhea data is complicated by the fact that there are two ongoing, substantially separate epidemics, one among MSM and another among heterosexuals. Because case report data on sexual orientation are incomplete, PHSKC cannot reliably determine the sexual orientation of all male cases. As a result, the heterosexual epidemic is best monitored by concentrating on the occurrence of gonorrhea in women, while the epidemic among MSM is best monitored using data collected in sentinel populations, like STD clinic patients, among whom sexual orientation data are complete. Among MSM patients of the PHSKC STD Clinic, diagnoses of symptomatic urethral gonorrhea decreased by 21% from 2005 to 2006 (Figure 36).

The incidence of gonorrhea was highest in the 15-19 and 20-24 year age groups among women in 2006, while in men, incidence was highest in the 35-44 year old age group (Table 6). Continuing a longstanding pattern observed both nationally and in King County, large racial disparities in gonorrhea incidence were observed in 2006, with the highest incidence observed among African American men and women, and the lowest incidence occurring in Asian and Pacific Islander men and women (Table 6). Among men, gonorrhea incidence among African American men (864 per 100,000 men, Table 6) was at its highest point since 1994, while incidence decreased slightly among white and Native American men in 2006 (data not shown). Among women of all races and ages, gonorrhea incidence also increased and was at its highest rate since 1993. Incidence among 15-29 year old Washington women continued an upward trend in 2006 (Figure 6). While gonorrhea incidence increased on a national level among women in this age group from 2004 to 2005 (Figure 6), these data were not available at the national level for 2006 at the time this report was prepared.

Figure 8 includes women only to better illustrate trends in gonorrhea among heterosexuals. Historically, gonorrhea incidence in women has been highest among 15-20 and 20-24 year olds (Figure 8). Consistent with other increases observed in 2006, gonorrhea incidence grew among women of all age groups in 2006. While the relative increases in incidence among the 35-44 and 44-54 year old age groups were the largest, 15-24 and 24-29 year old women continued to experience the highest rate of infection.

The Neisseria Reference Laboratory at Harborview Medical Center performs susceptibility tests on gonococcal isolates received from private and public laboratories in Seattle-King County. Prior to 2003, resistance to the fluoroquinolones was detected in <1% of isolates. During 2003, the prevalence of fluoroquinolone resistance increased from ~1% in January-March to 18% in

October-December (Figure 7). During late 2003, Public Health- Seattle & King County recommended that fluoroquinolones no longer be used for the treatment of gonococcal infection. From 2003-2005, >90% of fluoroquinolone resistant isolates were recovered from men who have sex with men (MSM). During 2006, the prevalence of fluoroquinolone resistance increased to >15% in heterosexual men and women. The recommendation that fluoroquinolones not be used for gonorrhea treatment remains in place. [Reported by Olusegun O. Soge and William L. H. Whittington, Department of Medicine, University of Washington]

Table 5: Number of Reported Gonorrhea Cases and Gonorrhea Incidence, King County, WA, 2006

	Cases	Incidence per 100,000 population
Sex		
Women	711	78
Men	1276	142
Total cases	1987	110

Table 6: Number of Reported Gonorrhea Cases and Incidence, in Men and Women, by Age and Race, King County, WA, 2006

		Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
		Women (N=711)		Men (N=1276)	
Race* □					
	White	250	41	525	91
	Black	244	522	409	864
	Nat Am	16	207	6	80
	Asian/PI	29	29	47	52
	Other	7		21	
	Multiple	47		19	
	Unknown	118		249	
Age*	0-9 years	0	0	0	0
	10-14 years	17	32	1	2
	15-19 years	220	401	102	180
	20-24 years	204	313	229	347
	25-29 years	98	142	242	333
	30-34 years	56	81	176	236
	35-44 years	82	57	318	214
	45-55 years	26	18	155	110
	>=56 years	7	3	45	26
	Unknown	1		8	

* Cases with unknown race or age were included in race and age specific rates after being distributed among race/age categories based on the distribution of cases with known race or age. In 2006, among women, 118 case reports were missing race, and 1 missing age, and among men, 249 cases reports were missing race, and 8 were missing age.

□ Race specific rates exclude cases reported with "multiple" or "other" races.

**Table 7: Number of Reported Gonorrhea Cases and Incidence among Men and Women
King County, WA, 1992-2006**

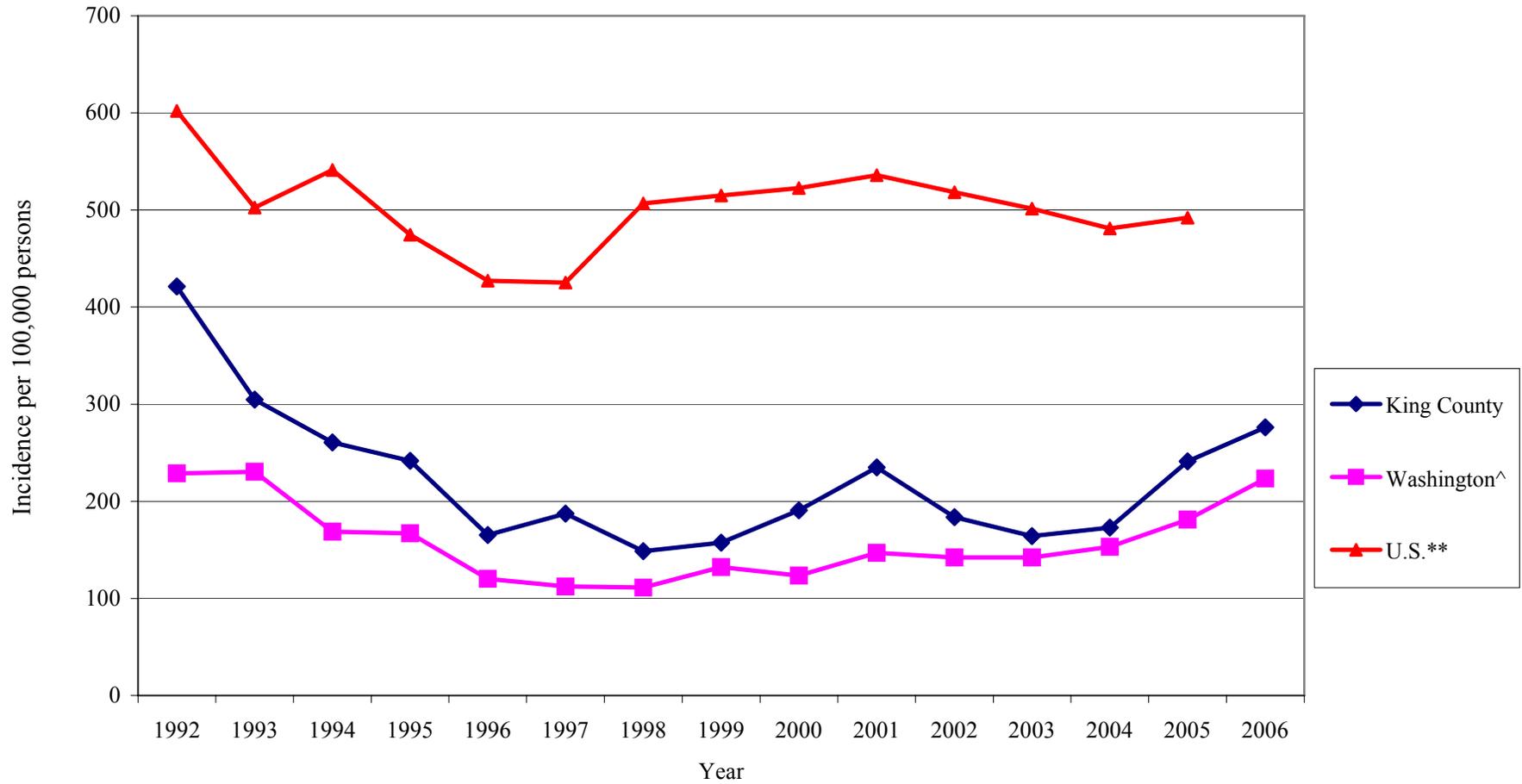
Year	Women		Men		Total	
	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
1992	903	113.0	1052	134.8	1955	123.8
1993	648	79.8	879	110.6	1527	95.1
1994	541	66.0	675	83.9	1216	74.9
1995	517	62.4	763	93.7	1280	77.9
1996	354	42.4	559	67.9	913	55.0
1997	396	46.9	519	62.2	915	54.5
1998	324	37.9	656	77.5	980	57.6
1999	342	39.6	605	70.7	947	55.1
2000	452	51.8	775	89.7	1227	70.6
2001	564	63.9	984	112.4	1548	88.0
2002	428	48.0	1025	116.1	1453	81.9
2003	403	45.1	946	106.8	1349	75.8
2004	414	46.1	872	98.0	1286	72.3
2005	581	64.0	1191	132.3	1772	99.0
2006	711	78.3	1276	141.7	1987	109.9

**Table 8: Number of Reported Gonorrhea Cases and Incidence
Among Men and Women ages 15-29,* King County, WA, 1992-2006**

Year	Women, ages 15-29		Men, ages 15-29		Total, ages 15-29	
	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
1992	731	421.1	691	387.8	1422	404.2
1993	528	304.7	510	285.7	1038	295.0
1994	449	260.8	407	228.9	856	244.6
1995	417	241.7	410	229.5	828	235.5
1996	288	165.5	291	161.2	579	163.3
1997	329	187.3	243	132.9	572	159.6
1998	264	148.6	318	172.0	583	160.6
1999	281	157.5	297	159.5	578	158.6
2000	343	190.7	304	162.6	647	176.4
2001	425	234.9	422	224.6	847	229.7
2002	335	183.6	442	233.5	777	209.0
2003	301	164.3	368	193.2	669	179.0
2004	322	173.0	337	174.5	659	173.8
2005	457	241.2	518	263.5	974	252.6
2006	523	276.2	577	293.6	1099	285.0

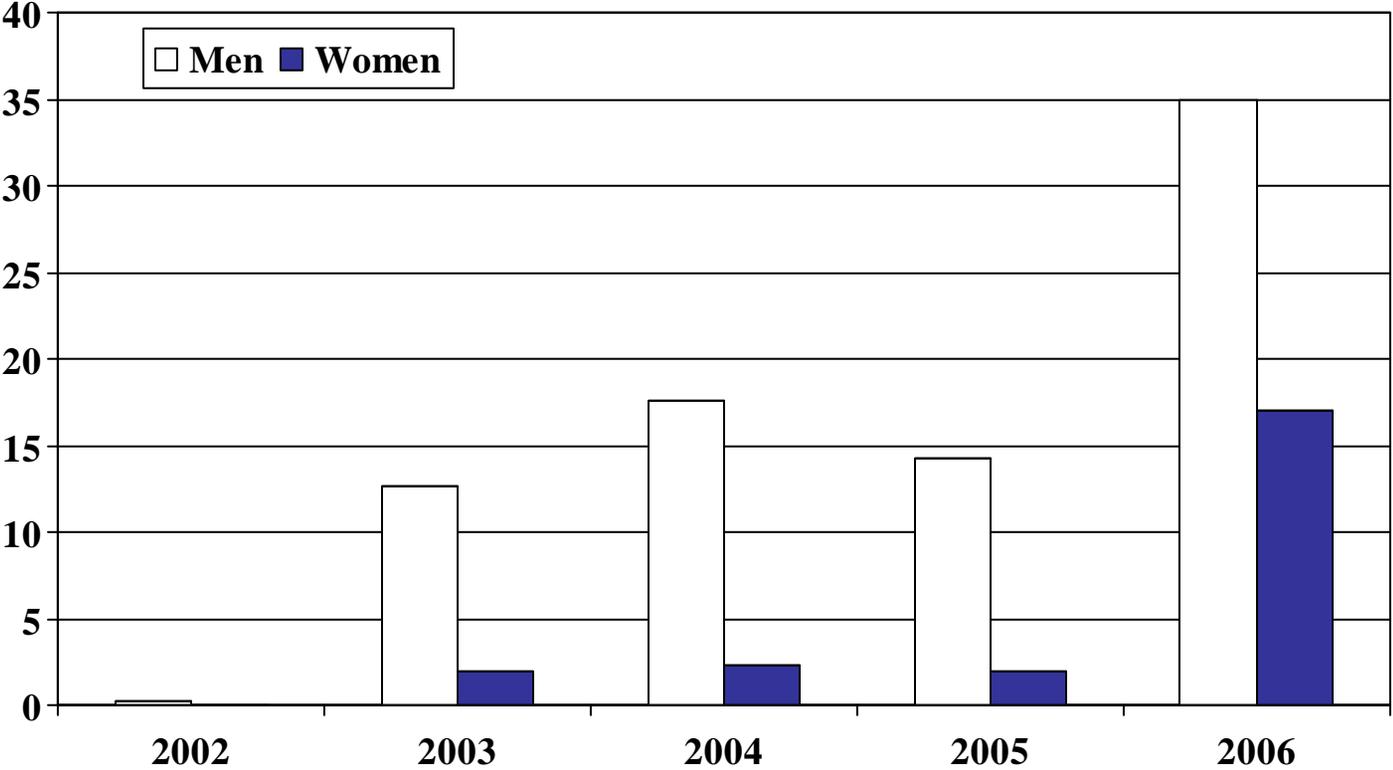
* Cases with unknown age were included age specific counts and rates after being distributed among age categories based on the distribution of cases with known age.

**Figure 6: Gonorrhea Incidence among Women ages 15-29*, 1992-2006
King County, Washington State^, and U.S.**



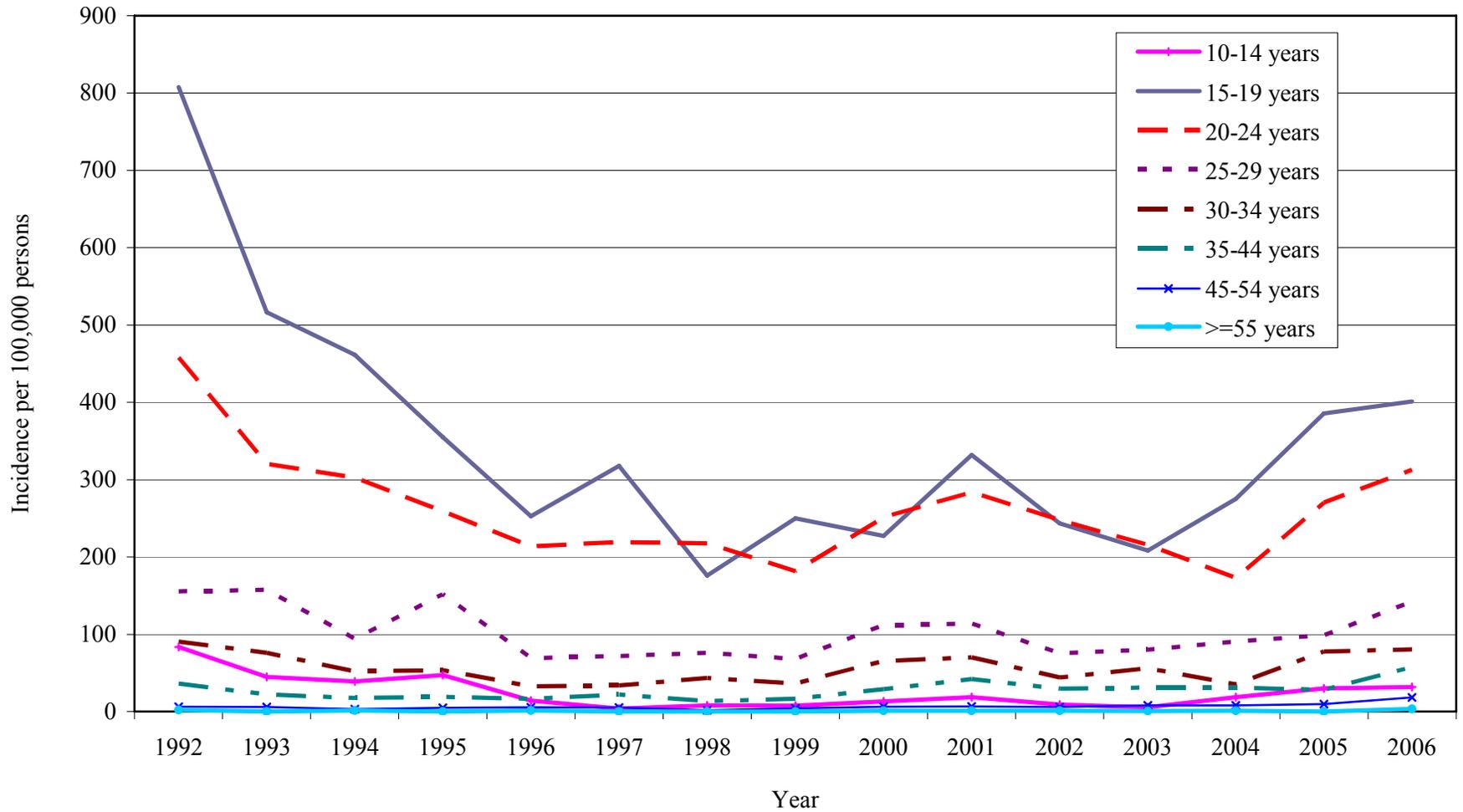
* Cases with unknown age were distributed according to annual age distributions among cases with known age and included in age-specific rates.
 ** National data for 2006 were not available at the time this report was prepared.
 ^ Washington State rates exclude King County.

Figure 7: Proportion of infections caused by fluoroquinolone resistant* gonococci by gender and year, 2002-2006



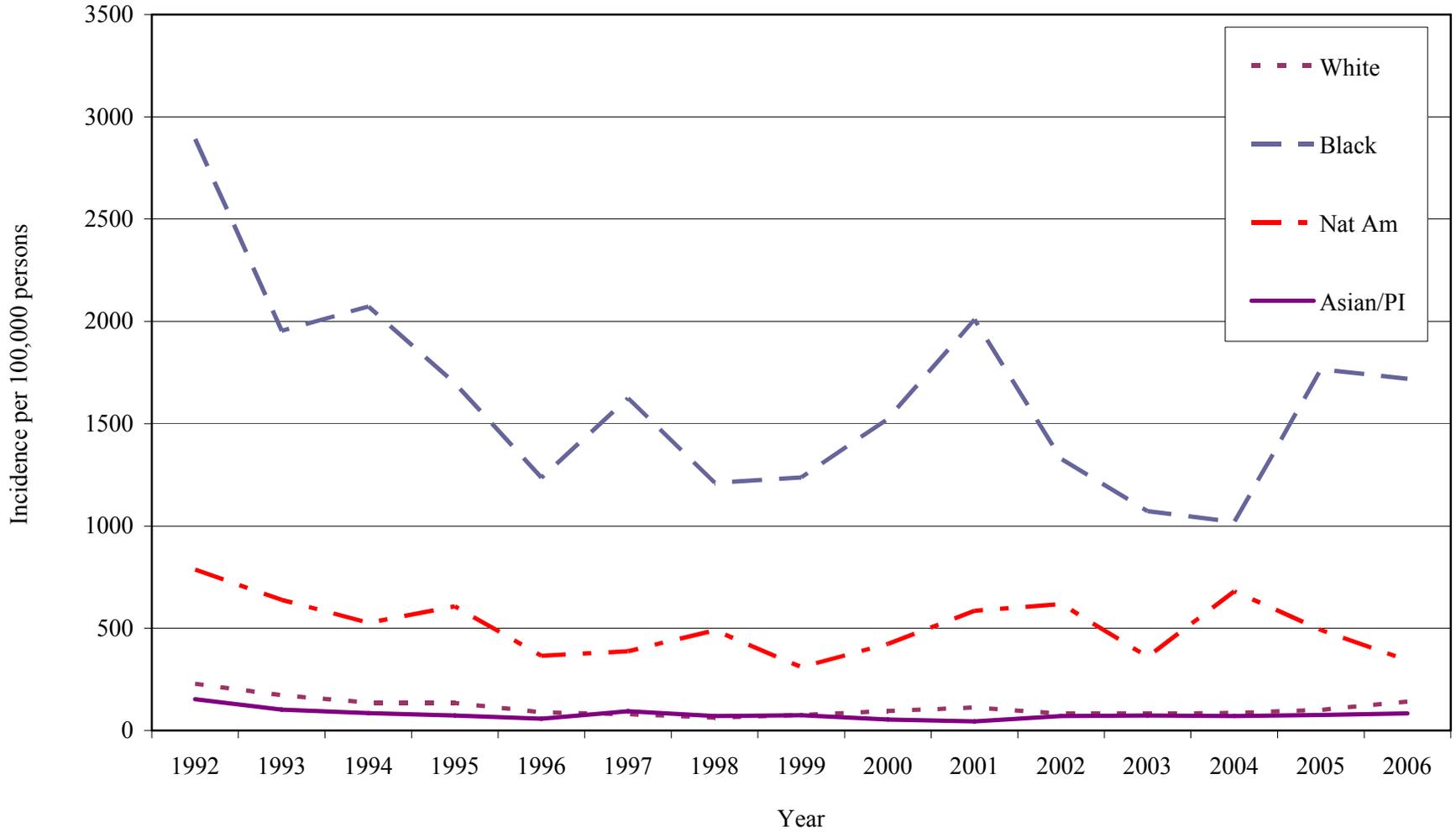
* By criterion of Clinical and Laboratory Standards Institute

**Figure 8: Gonorrhea Incidence by Age* Among Women
King County, WA, 1992-2006**



* Cases with unknown age were distributed according to annual age distributions among cases with known age and included in age-specific rates.

**Figure 9: Gonorrhea Incidence by Race Among Women Ages 15-29*
King County, WA, 1992-2006**



* Cases with unknown race and age were distributed according to annual race and age distributions among cases with known race and age and included in race-specific rates.

Syphilis

King County is experiencing an ongoing epidemic of syphilis among MSM. The total number of early syphilis cases fell slightly in 2006, from 193 in 2005 to 185 cases in 2006 (Tables 9 and 11). Of the 2006 cases, 174 (94%) were among MSM (Table 10, Figure 10). The overall 2006 incidence of early syphilis among King County residents was 10 per 100,000 persons (Table 9). The early syphilis incidence among MSM was 400 times greater (403 per 100,000 MSM) than that among heterosexual men (1 per 100,000 men) [Table 12] in 2006.

HIV positive MSM have been disproportionately affected by the epidemic of syphilis among MSM since it began in 1997. In 2006, the estimated incidence of early syphilis among HIV positive MSM was 2,195 per 100,000 men, compared to 170 per 100,000 among HIV negative MSM (Figure 11). Despite the higher rates among HIV positive MSM, MSM who are HIV negative or have an unknown HIV status have accounted for between 44 and 50% of early syphilis cases diagnosed among MSM since 2002 (Figure 12).

Early syphilis incidence among heterosexuals remained low in 2006, with only 10 of 174 cases occurring among heterosexual men (8 cases) and women (2 cases) [Tables 11 and 12]. Behaviors reported by and characteristics of early syphilis cases varied by sexual preference and gender in 2006 (Table 10). Fifty-six percent of MSM syphilis cases were HIV positive, while no heterosexual cases were HIV positive. MSM cases were also more likely to report use of the Internet to recruit sex partners when compared to heterosexuals. Heterosexual men and women were somewhat more likely to report anonymous sex partners and exchanging sex for money or drugs.

**Table 9: Reported Cases and Incidence of Early Syphilis
King County, WA, 2006**

	Cases	Percent	Incidence per 100,000 population
Sex			
Men	183	98.9	20
Women	2	1.0	0
Total cases	185		10

**Table 10: HIV Status and Risk Behaviors among Syphilis Cases
By Sexual Orientation, King County, WA, 2006**

		MSM* N=174		Heterosexual Men and Women N=10	
		Number	Percent	Number	Percent
Stage	Primary	31	18%	3	30%
	Secondary	90	52%	5	50%
	Early latent	53	30%	2	20%
HIV	Positive	97	56%	0	0%
	Negative	66	38%	8	80%
	Unknown	11	6%	2	20%
Methamphetamine Use					
	Yes	63	36%	3	30%
	No	91	52%	6	60%
	Unknown	20	11%	1	10%
Anonymous sex partners during infectious period					
	Yes	85	49%	6	60%
	No	56	32%	3	30%
	Unknown	33	19%	1	10%
Patient uses bathhouses					
	Yes	40	23%	0	0%
	No	131	75%	10	100%
	Unknown	3	2%	0	0%
Internet use to meet partners					
	Yes	93	53%	0	0%
	No	78	45%	10	100%
	Unknown	3	2%	0	0%
Has traded sex for money or drugs (sex worker)					
	Yes	4	2%	1	10%
	No	137	79%	7	70%
	Unknown	34	20%	2	20%
Sex with a known sex worker					
	Yes	2	1%	2	20%
	No	140	80%	6	60%
	Unknown	32	18%	2	20%
Reason for Visit					
	Routine exam	26	15%	1	10%
	Symptoms	112	64%	7	70%
	Exposed	25	14%	1	10%
	None/other	11	6%	1	10%

*MSM: all men who acknowledged sex with a man. 1 man with unknown MSM status was excluded.

**Table 11: Number of Reported Early Syphilis Cases and Incidence among Men and Women
King County, WA, 1992-2006**

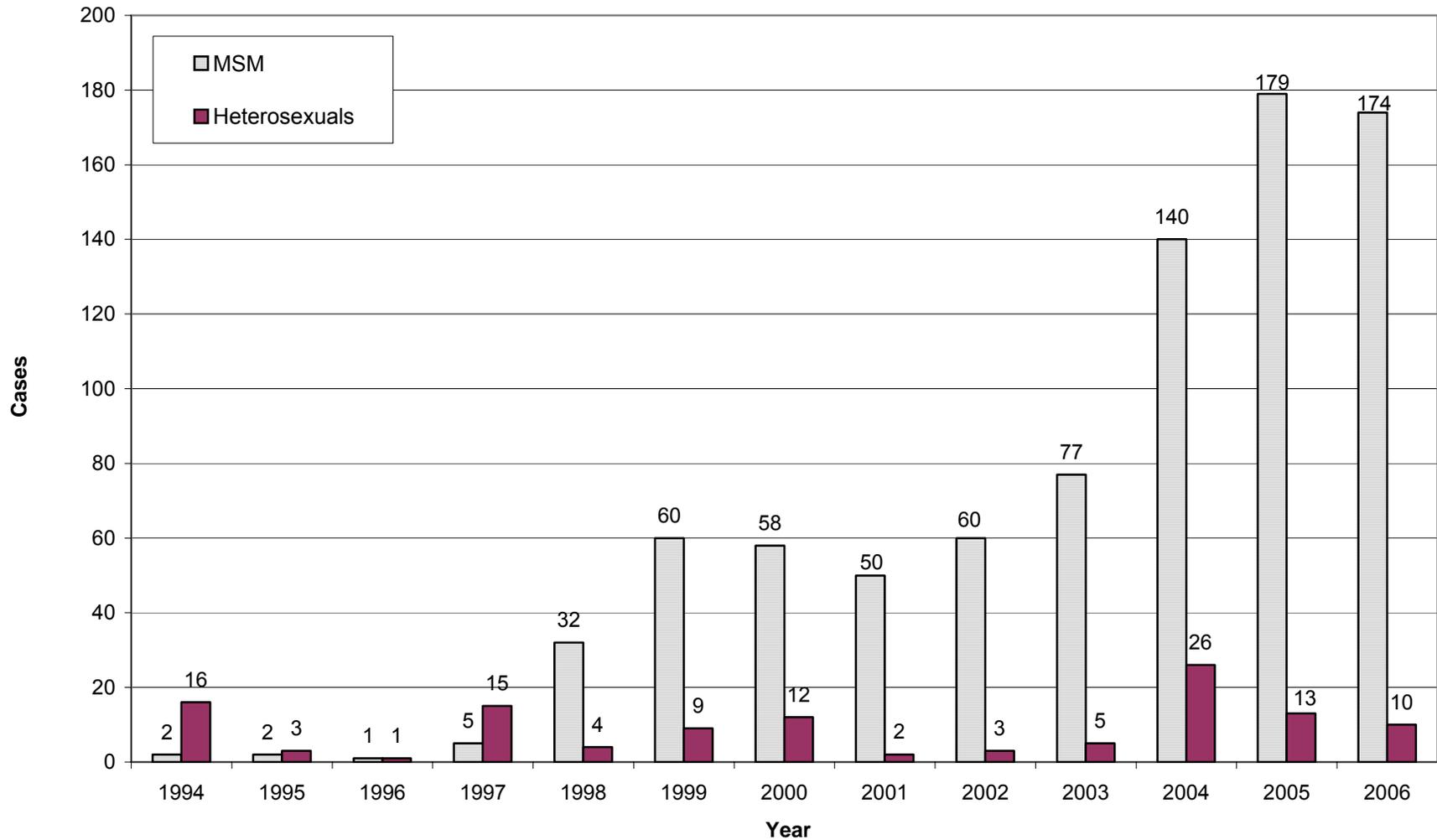
Year	Women		Men		Total	
	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population	Cases	Incidence per 100,000 population
1992	26	3	42	5	68	4
1993	21	3	15	2	36	2
1994	6	1	12	1	18	1
1995	1	0	4	0	5	0
1996	0	0	2	0	2	0
1997	10	1	10	1	20	1
1998	1	0	37	4	38	2
1999	3	0	67	8	70	4
2000	4	0	67	8	71	4
2001	1	0	51	6	52	3
2002	0	0	64	7	64	4
2003	2	0	80	9	82	5
2004	7	1	159	18	166	9
2005	7	1	186	21	193	11
2006	2	0	183	20	185	10

**Table 12: Number of Reported Early Syphilis Cases and Incidence
Among MSM and Heterosexual Men, King County, WA, 1992-2006**

Year	MSM		Heterosexual Men	
	Cases	Incidence per 100,000 population**	Cases	Incidence per 100,000 population
1992*	0	0	0	0.0
1993*	1	2	5	0.6
1994	2	5	10	1.2
1995	2	5	2	0.2
1996	1	2	1	0.1
1997	5	12	5	0.6
1998*	32	74	3	0.4
1999*	60	139	6	0.7
2000*	58	134	8	1.0
2001	50	116	1	0.1
2002*	60	139	3	0.4
2003	77	178	3	0.4
2004	140	324	19	2.3
2005	179	415	6	0.7
2006	174	403	8	1.0

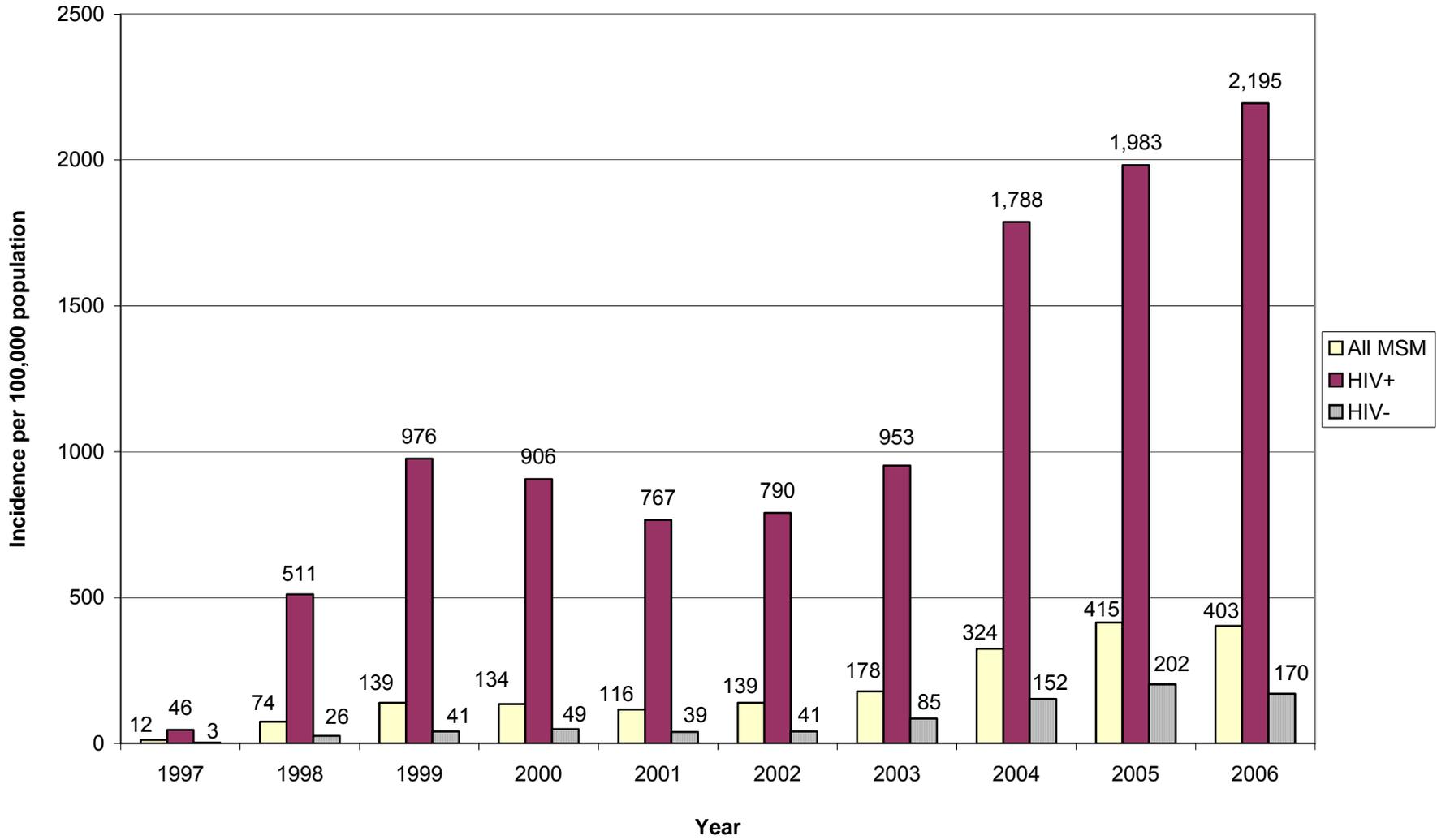
* Men were missing sexual orientation data in the following years (numbers missing are included in

**Figure 10: Reported Cases of Early Syphilis by Sexual Orientation*,
King County, WA, 2006**

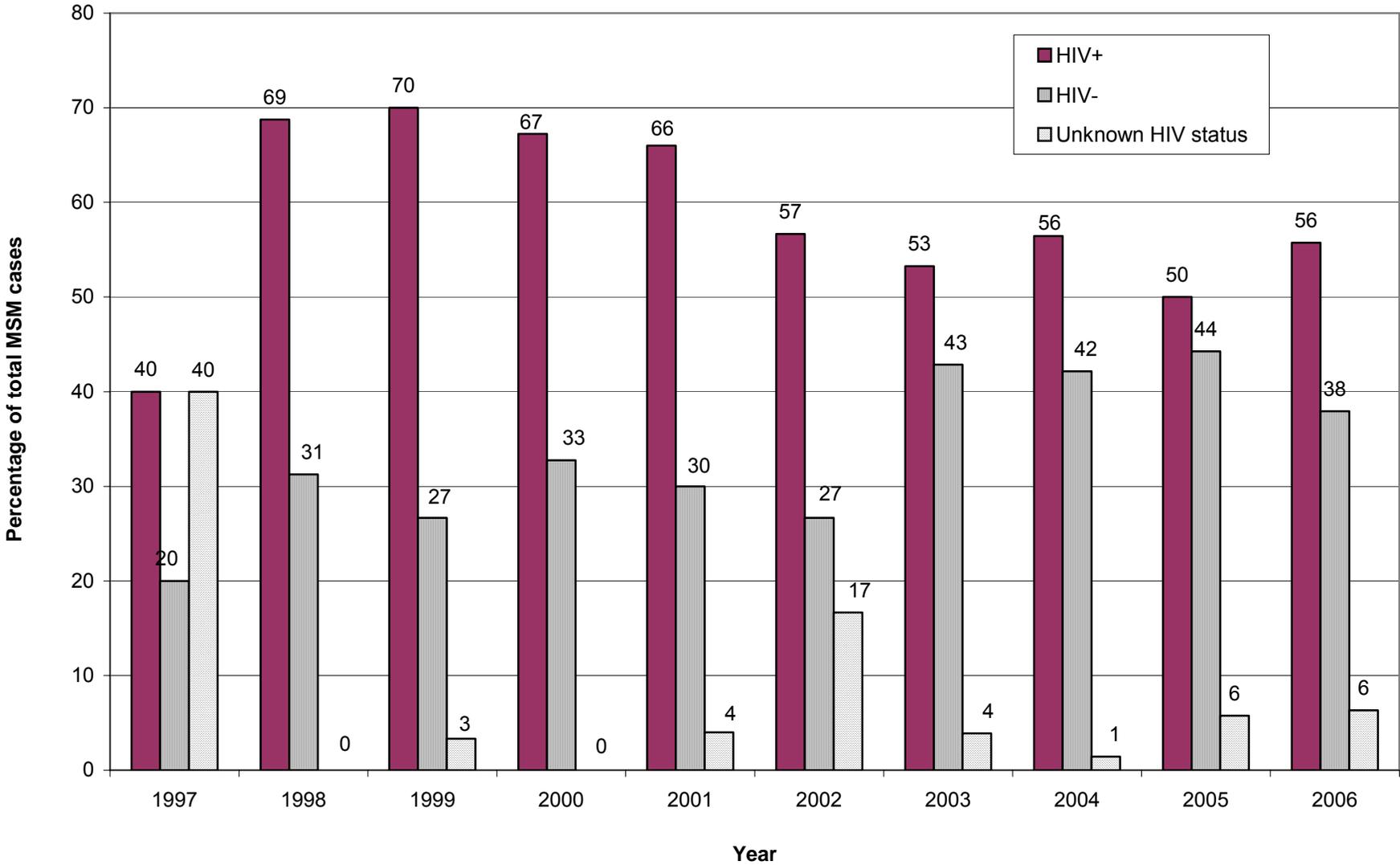


*Data on sexual orientation were missing for men in the following years: 2 men in 1998, and 1 man in 1999, 2000, 2002, 2005, and 2006.

**Figure 11: Early Syphilis Incidence Among MSM by HIV Status
King County, WA, 1997-2006**



**Figure 12: Percent of Reported Early Syphilis Cases Among MSM by HIV Status
King County, WA, 1997-2006**

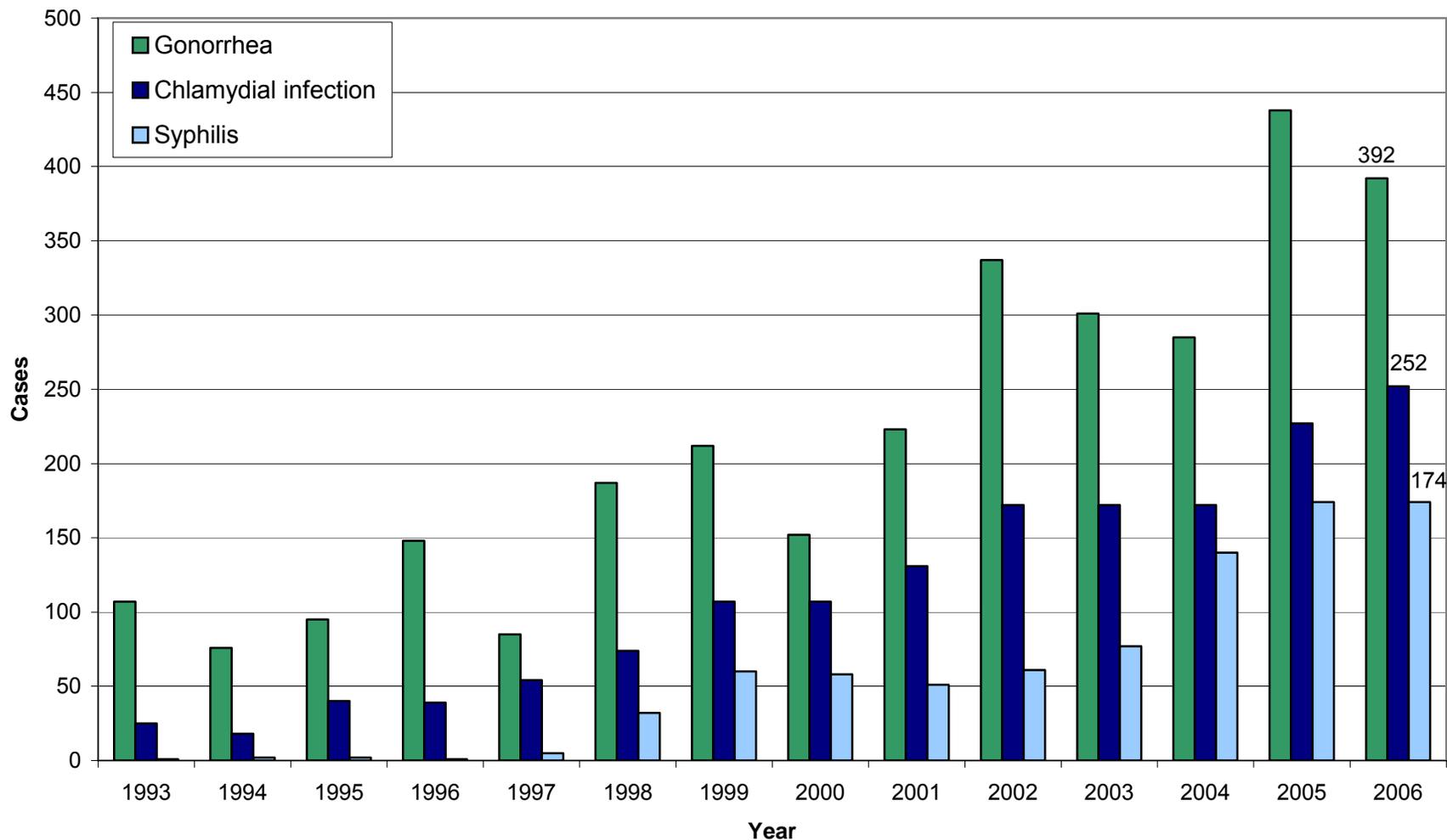


Men Who Have Sex with Men (MSM)

Data on sexual orientation were not routinely collected as part of STD case reports before 2004, and in 2006 these data were not reported for approximately 31% of male cases of gonorrhea or chlamydial infection. Here we estimate the number of King County MSM diagnosed with gonorrhea or chlamydial infection by adding the numbers of each infection diagnosed among PHSKC STD Clinic MSM patients to the number of rectal gonorrhea and chlamydia infections reported by non-PHSKC STD Clinic providers. These estimates are an underestimate of MSM cases for these two infections since they exclude non-rectal infections among MSM diagnosed by non-PHSKC STD Clinic providers. However, such estimates do provide information about trends in gonorrhea and chlamydia over time among MSM.

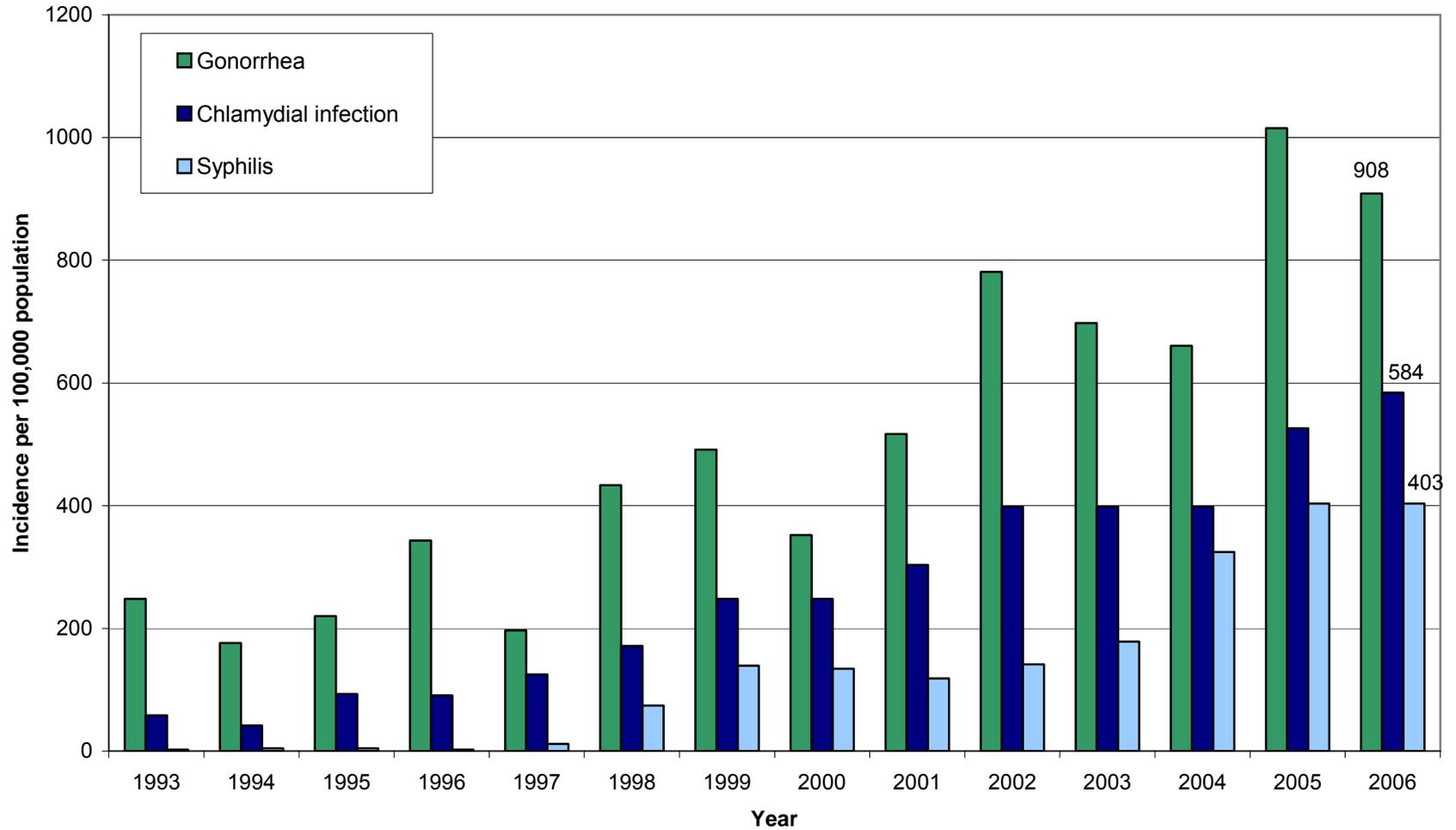
Overall, STD morbidity among MSM was stable between 2005 and 2006. As shown in Figure 13, the number of gonorrhea, chlamydia, and early syphilis cases diagnosed among King County MSM increased substantially between 1993 and 2005. Chlamydial diagnoses have increased steadily among MSM, while trends in gonorrhea have been less consistent; gonorrhea diagnoses stabilized from 2002 to 2004, and fell somewhat from 2005 (438 cases) to 2006 (392 cases). The extent to which these divergent trends may reflect changing testing practices is uncertain. Monitoring the occurrence of symptomatic urethral gonorrhea among MSM STD clinic patients provides a measure of gonococcal morbidity that is relatively unaffected by changing STD testing practices over time. (This measure could be affected by changing patterns of where MSM seek medical care.) After increasing substantially between 2004 and 2005, the number of symptomatic urethral gonorrhea cases treated in the PHSKC STD Clinic declined from 2005 to 2006 (Figure 15). The epidemic of early syphilis among MSM that began in 1998 continued at a stable rate in 2006 (Figure 13).

**Figure 13: Gonorrhea*, Chlamydia*, and Early Syphilis among MSM
King County, WA, 1993-2006**



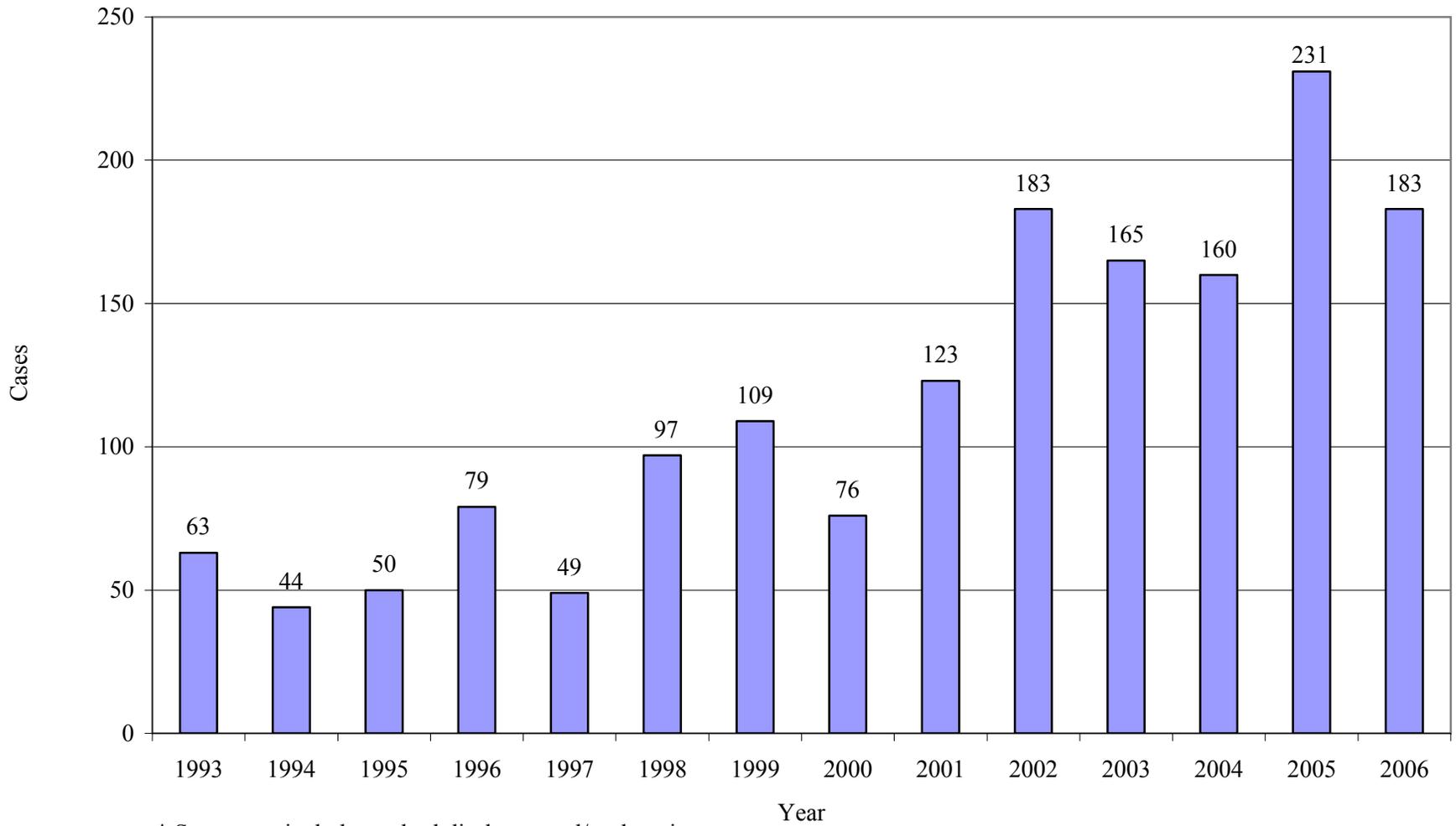
*MSM cases are calculated by summing all PHSKC STD Clinic diagnoses among MSM with all rectal infections reported to PHSKC by other providers.

**Figure 14: Incidence of Gonorrhea*, Chlamydial Infection*, and Early Syphilis Among MSM
King County, WA 1993-2006**



*MSM cases are calculated by summing all PHSKC STD Clinic diagnoses among MSM with all rectal infections reported to PHSKC by other providers.

Figure 15: Symptomatic* Gonococcal Urethritis among MSM
PHSKC STD Clinic, 1993-2006**



* Symptoms include urethral discharge and/or dysuria

** These data exclude 49 cases of symptomatic urethral gonorrhea among men who were missing sexual orientation

