

Summary

This report describes the sexually transmitted disease burden in King County. Primary emphasis is placed on chlamydia and gonorrhea since they are the most frequently reported STDs in Washington State. The 2003 incidence rates by age and sex for gonorrhea and chlamydia are presented.

The report concludes with a presentation of which providers in your county reported STDs.

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King County STD Disease Trends

Table 1: Washington State Reportable Sexually Transmitted Diseases, King County, 2003.

Disease	2002 King County Cases	2003 King County Cases	2003 King County Rate ^λ (per 100,000)	2003 Washington State Rate ^λ (per 100,000)
Chlamydia	4,471	5,168	291	275
Gonorrhea	1,462	1,351	76	45
Early Syphilis	60	84	4.7	1.9
Congenital Syphilis	0	0	-	0.0 (live births)
Late/Late Latent Syphilis	36	50	2.8	2.0
Herpes (initial infection)	650	688	39	34
GI/LGV/Chancroid**	0	0	-	0.0
HIV cases**	391	327		
AIDS cases**	276	329		
TOTAL (excluding HIV/AIDS cases)	6,679	7,341	413	359

^λ Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, February 2004.

* Rates cannot be calculated for years with fewer than five cases

** See Appendix A for explanation of disease acronyms.

In 2003, King County experienced an increase from 2002 in its combined STD morbidity rate. With 7,341 new cases of STDs (excluding HIV/AIDS cases ¹) in 2003, the incidence rate for all STDs was 413 per 100,000 persons. This is 15% greater than the 359 per 100,000 combined STD rate for Washington State. King County reported no cases of congenital syphilis or GI/LGV/ Chancroid in 2003.

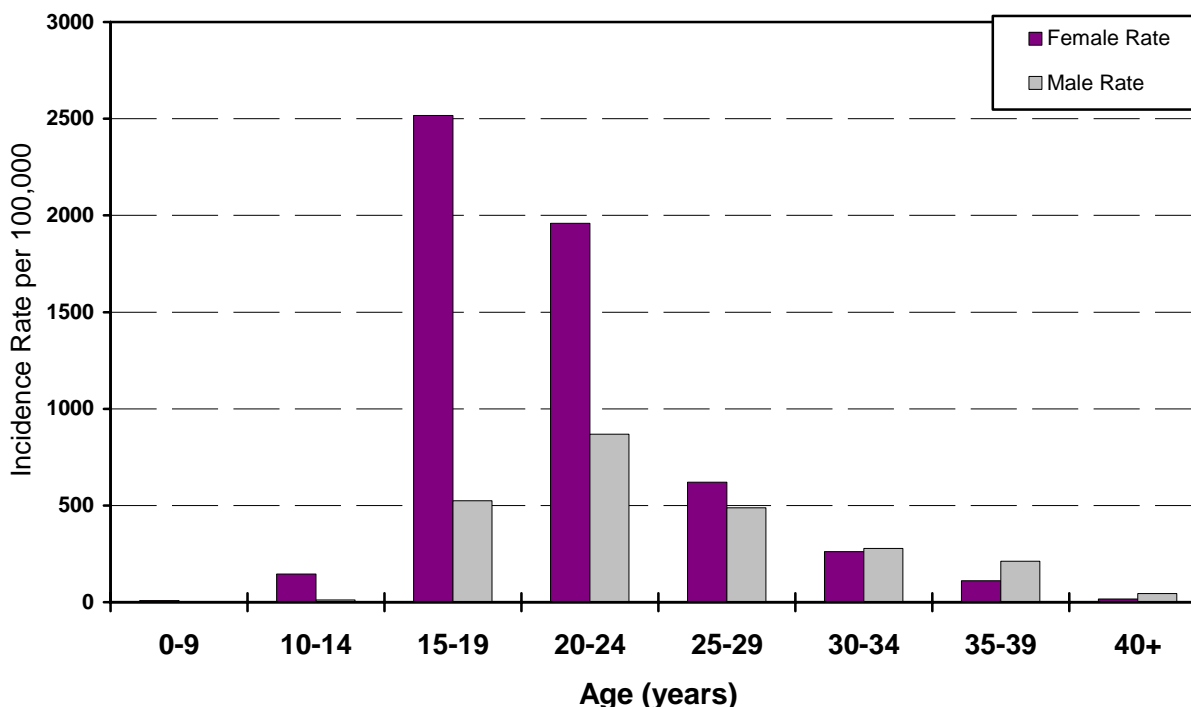
2003 compared to 2002:

- Chlamydia had a 16% increase in reported cases (5,168 vs. 4,471).
- Gonorrhea had a 8% decrease in reported cases (1,351 vs. 1,462).
- Early syphilis had a 40% increase in reported cases (84 vs. 60).
- Late/late latent syphilis had a 39% increase in reported cases (50 vs. 36).
- Initial infection herpes had a 9% increase in reported cases (688 vs. 650).

¹ Complete information on the HIV/AIDS epidemic in Washington can be found in [Washington State HIV/AIDS Surveillance Report](#), Washington State Department of Health, IDRH, Assessment Unit.

Chlamydia

FIGURE 1: Chlamydia Incidence Rates by Age and Gender, King County, 2003^λ



Female Rate	9	145	2,516	1,960	620	262	111	17
Male Rate	*	12	524	868	488	278	212	45
Female Cases	5	79	1,360	1,234	412	192	78	70
Male Cases	1	7	294	556	343	221	156	171

^λ Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, February 2004. Incidence rates rounded to the nearest whole number.

* Rates cannot be calculated for ages with fewer than five cases.

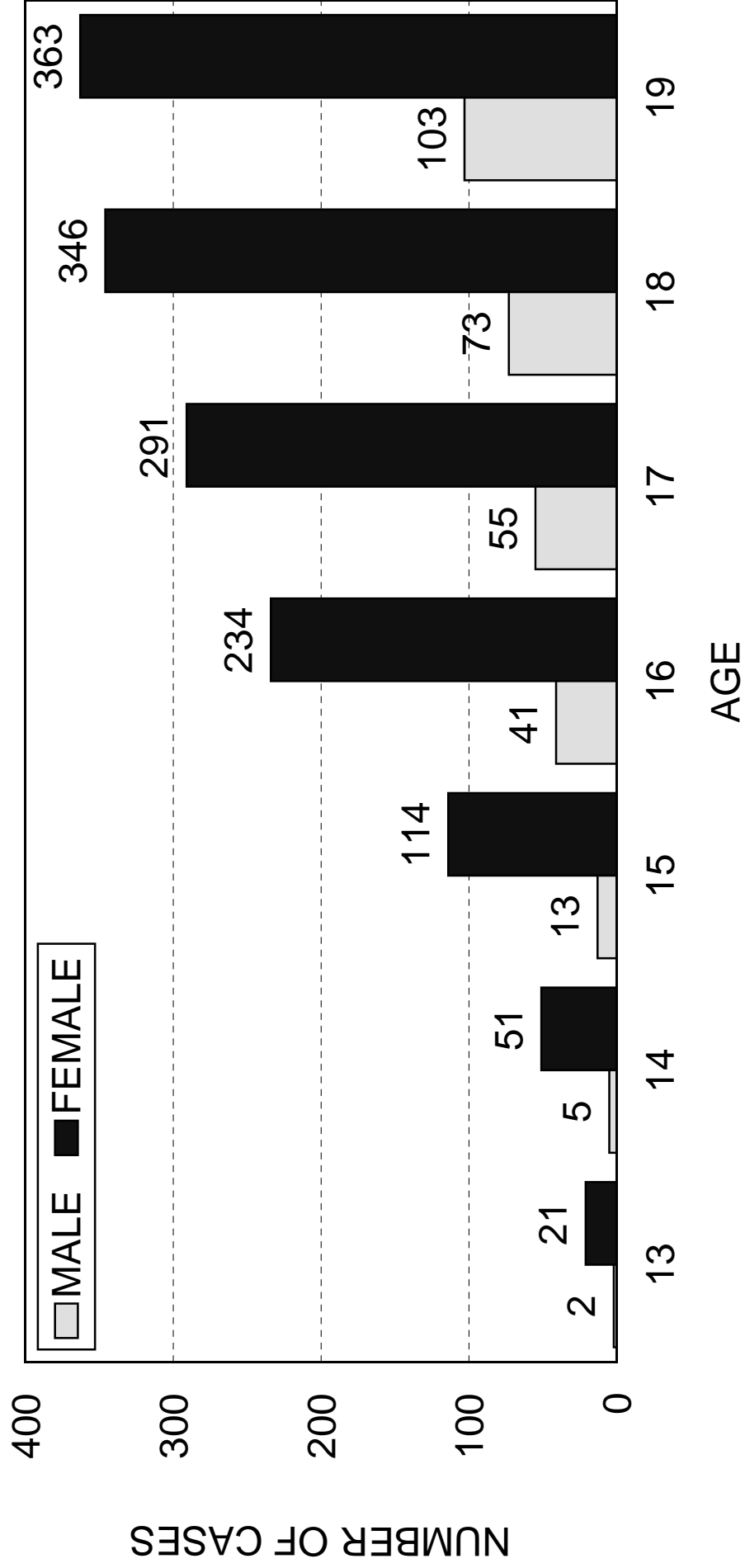
In 2003, the female chlamydia incidence rate peaked among the 15-19 year old age group, at 2,516 cases per 100,000. After this peak, chlamydia incidence among females progressively declined with increasing age. Among men, the 2003 chlamydia incidence rate peaked among 20-24 year olds at 868 cases per 100,000, then declined with increasing age.

Only women are routinely screened for chlamydia. Because active case-finding is preferentially limited to women, the incidence of chlamydia in men may be under-reported by comparison. Caution should be used in interpreting comparisons of chlamydia rates between genders.

The 2002 STD Treatment Guidelines from CDC recommends that all women diagnosed with chlamydia be re-screened three to four months after treatment. This was suggested because of the high prevalence of chlamydia found in women diagnosed with the disease in the preceding months, presumably as a result of re-infection.

KING COUNTY

TEEN (13-19) CHLAMYDIA CASES - 2003



Repeater Infection (Person having more than one infection in a 12-month period prior to being treated.)

Recurrent infection is common and associated with increased risk of PID and other serious outcomes. Data suggest that young age and incomplete therapy increases the risk for a persistent/recurrent infection. Studies also suggest that women’s current male sex partners are not receiving treatment for chlamydia and that women are being re-infected by resuming sex with preexisting (and infected) sex partners. Careful interviewing and prompt, concurrent treatment of all partners is important. People should be coached to ask health care providers for re-screening if risk behavior occurs.

Table 2: **Chlamydia** Repeater Infections, King County, 2003.

	MALE	FEMALE	TOTAL
Reported Cases	1,734	3,434	5,168
Repeaters Identified	138	492	630
% Repeaters	8%	14%	12%
Age			
0-9			
10-14		13	13
15-19	20	249	269
20-24	41	165	206
25-29	36	32	68
30-34	20	25	45
35-39	8	4	12
40+	13	4	17
Unknown			

Asymptomatic Infection

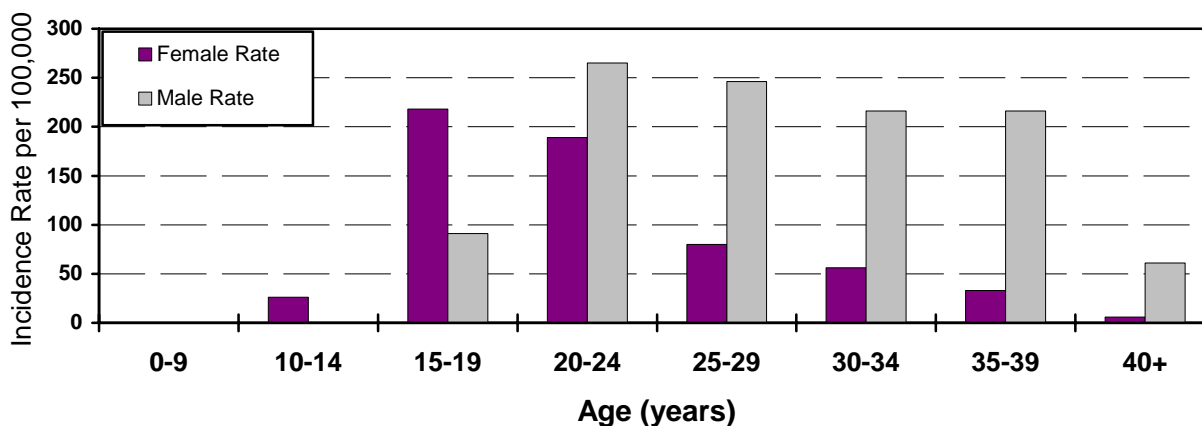
STD infections often lack any signs and symptoms. Routine screening and treatment is essential to prevent serious complications that may not appear until long after infection. Screening all sexually active adolescents (19 years and younger) during sports physicals and routine office visits should be done even if symptoms are not present. Screening women and men aged 20-25 is also suggested, particularly those who have new or multiple sex partners. Women who are pregnant, have sex partners infected with chlamydia, have mucopurulent cervicitis or planning an IUD insertion should also be screened. Careful interviewing and treatment of all partners is important.

Table 3: Reported Cases of **Chlamydia** by Diagnostic Category, King County, 2003.

Diagnosis	Private		Public		Total		Total Cases
	Male	Female	Male	Female	Male	Female	
Asymptomatic	259	1,508	768	744	1,027	2,252	3,279
Symptomatic-Uncomplicated	510	739	165	295	675	1,034	1,709
Pelvic Inflammatory Disease		71		14		85	85
85	2	4			2	4	6
Unknown	12	45	18	14	30	59	89
TOTAL	783	2,367	951	1,067	1,734	3,434	5,168

Gonorrhea

FIGURE 3: Gonorrhea Incidence Rates by Age and Sex, King County, 2003[^]



Female Rate	*	26	218	189	80	56	33	6
Male Rate	0	*	91	265	246	216	216	61
Female Cases	1	14	118	119	53	41	23	24
Male Cases	0	0	51	170	173	172	159	231

[^] Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, February 2004. Incidence rates rounded to the nearest whole number.

* Rates cannot be calculated for years with fewer than five cases.

In 2003, the female gonorrhea incidence rate peaked among the 15-19 year old age group at 218 cases per 100,000. After this peak, gonorrhea incidence among females progressively declined with increasing age. Among men, the 2003 gonorrhea incidence rate peaked among 20-24 year olds at 265 cases per 100,000. These cases and rates declined at different rates than the female rates because of an outbreak of gonorrhea in gay men.

In Washington State the reported rate in 2003 was 45/100,000, a decrease of 6.6% from 2002 rates and the second annual decrease in rates since 2001. Statewide, the greatest incidence of disease among females, 62% of total female morbidity in 2003, was among 15-24 year olds, while for males the burden of disease is distributed more evenly among those 25 and older. Males had a higher gonorrhea rate (52/100,000) than females (38/100,000). A major factor contributing to the distribution of gonorrhea incidence in different age groups among men or women is the documented outbreak among MSM (men who have sex with men) whose median reported age was 30.

Findings from the Gonococcal Isolate Surveillance Project (GISP) in Seattle have indicated that Washington State is now an area with increased prevalence of quinolone-resistant *Neisseria gonorrhoeae* (QRNG). Based on these findings, the Washington State Department of Health recommends that health care providers in the state should no longer use fluoroquinolones (ciprofloxacin, levofloxacin and ofloxacin) as first line therapy for gonorrhea. The antibiotics of choice are ceftriaxone (Rocephin™) or cefpodoxime (Vantin™) followed with either azithromycin or doxycycline to treat possible coexisting chlamydial infection.

KING COUNTY

TEEN (13-19) GONORRHEA CASES - 2003

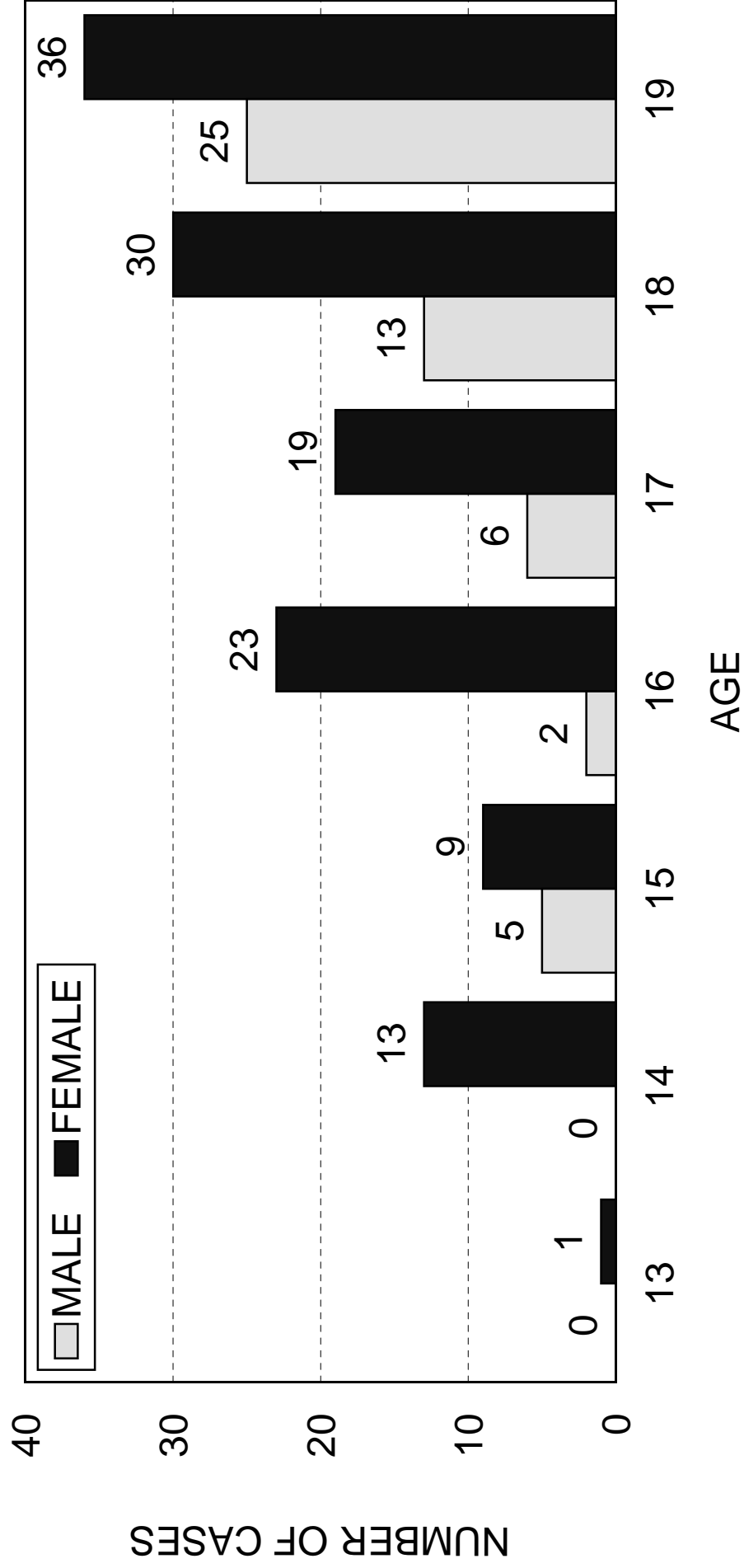


Table 4: **Gonorrhea** Repeater Infections, King County, 2003.

	MALE	FEMALE	TOTAL
Reported Cases	957	394	1,351
Repeaters Identified	125	40	165
% Repeaters	13%	10%	12%
Age			
0-9			
10-14		2	2
15-19	5	18	23
20-24	18	16	34
25-29	29	2	31
30-34	26		26
35-39	17	1	18
40+	30	1	31
Unknown			

Because most gonorrhea cases are symptomatic and seek medical care, reported cases are considered to be an accurate reflection of true disease incidence in the overall population. Providers in Washington State who reported gonorrhea cases in 2003 indicated that 83% of the men were symptomatic for gonorrhea; 47% of the women were symptomatic.

Table 5: Reported Cases of **Gonorrhea** by Diagnostic Category, King County, 2003.

Diagnosis	Private		Public		Total		Total
	Male	Female	Male	Female	Male	Female	Cases
Asymptomatic	32	105	116	67	148	172	320
Symptomatic-Uncomplicated	385	127	380	56	765	183	948
Pelvic Inflammatory Disease		14		11		25	25
Other	1				1		1
Unknown	5	7	38	7	43	14	57
TOTAL	423	253	534	141	957	394	1,351

Conclusion

Table 6: Reported Cases of Chlamydia and Gonorrhea by Provider Type, King County, 2003.

Provider Type	Chlamydia			Gonorrhea		
	No. of Providers	No. of Cases	Percent of Total Cases	No. of Providers	No. of Cases	Percent of Total Cases
Alcohol/Substance Abuse						
Blood Bank/Plasma Center						
Community Health Center	13	166	3%	11	63	5%
Emergency Care (excl. hosp.)	17	98	2%	14	69	5%
Family Planning	23	577	11%	6	37	3%
Health Plan/HMOs	21	228	4%	16	55	4%
HIV/AIDS				1	1	0%
Hospitals	32	332	6%	20	118	9%
Indian Health	3	39	1%	1	7	0.5%
Jail/Correction/Detention	10	363	7%	6	81	6%
Job Corps						
Migrant Health	3	47	1%	1	7	0.5%
Military	3	8	0%	2	2	0%
Neighborhood Health	8	65	1%	6	15	1%
OB/GYN	36	220	4%	15	19	1%
Other	196	1,080	21%	91	229	17%
Private Physicians	31	52	1%	10	48	4%
Reproductive Health	10	735	14%	9	62	5%
STD Clinics	4	685	13%	4	490	36%
Student Health	15	473	9%	10	48	4%
TOTAL	425	5,168	100%	223	1,351	100%

In King County, the Other providers reported the highest number of chlamydia cases. These providers reported 21% of the total. STD Clinics reported the second highest number of chlamydia cases (13%). Gonorrhea cases (36% of the total) were most frequently reported by STD Clinics.

The Healthy People 2010 national objectives for chlamydia incidence are:

Females aged 15-24 attending family planning clinics: 3%. There are 8 Region X Infertility Prevention Project* Family Planning clinics in King County. The 2003 positivity rate for females was:

Site	<u>Male</u>			<u>Female</u>		
	# Tests	# Pos	% Pos	# Tests	# Pos	% Pos
International District	35	1	2.9	532	22	4.1
International District - Holly Park	4	1	25.0	219	7	3.2
PP of Western WA - Bellevue	1	0	0.0	1,334	53	4.0
PP of Western WA - Kenmore	8	1	12.5	1,098	63	5.7
PP of Western WA - Kent Valley	1	0	0.0	122	13	10.7
PP of Western WA - Federal Way	0	0	0.0	989	73	5.5
PP of Western WA - Central	5	0	0.0	2,377	110	4.6
PP of Western WA - University	3	2	66.7	1,997	89	4.5

Females aged 15-24 attending STD clinics: 3%.

Males aged 15-24 attending STD clinics: 3%.

There are 11 Region X Infertility Prevention Project* STD/Reproductive Health clinics in King County. The 2003 positivity rate was:

Site	<u>Male</u>			<u>Female</u>		
	# Tests	# Pos	% Pos	# Tests	# Pos	% Pos
Public Hlth-Seattle & King Co - Auburn	222	48	21.6	1,172	76	6.5
Public Hlth-Seattle & King Co - Downtown	111	16	14.4	760	28	3.7
Public Hlth-Seattle & King Co - Eastgate	127	28	22.0	718	27	3.8
Public Hlth-Seattle & King Co - Federal Way	181	56	30.9	1,473	86	5.8
Public Hlth-Seattle & King Co - North	109	16	14.7	899	52	5.8
Public Hlth-Seattle & King Co - North Shore	168	35	20.8	943	60	6.4
Public Hlth-Seattle & King Co - Southeast Renton	134	44	32.8	607	35	5.8
Public Hlth-Seattle & King Co - Southeast Kent	259	66	25.5	3,624	217	6.0
Public Hlth-Seattle & King Co - Southwest	222	65	29.3	1,646	134	8.1
Public Hlth-Seattle & King Co - Columbia Hlth Ctr	122	44	36.1	1,419	134	9.4
Public Hlth-Seattle & King Co - Harborview STD	7,220	527	7.3	2,722	176	6.5

Other Region X Infertility Prevention Project Sites in King County include:

Site	<u>Male</u>			<u>Female</u>		
	# Tests	# Pos	% Pos	# Tests	# Pos	% Pos
Echo Glen Detention (Snoqualmie)	260	5	1.9	113	14	12.4
Cleveland HS Teen Clinic	4	2	50.0	136	6	4.4
Franklin Teen Hlth Ctr	34	2	5.9	377	17	4.5
Garfield/Nova Teen Ctr	26	0	0.0	202	20	9.9
Nathan Hale Teen Hlth Ctr	17	5	29.4	148	11	7.4
Rainier Beach Teen Hlth Ctr	19	4	21.1	222	9	4.1
Roosevelt/Marshall Teen Hlth Ctr	24	2	8.3	192	5	2.6
Sealth/Denny Teen Hlth Ctr	16	4	25.0	108	13	12.0
West Seattle/Madison Teen Hlth Ctr	58	0	0.0	150	7	4.7
Seattle University	0	0	0.0	52	3	5.8
Cedar River Clinic-Renton	7	3	42.9	3,059	159	5.2

The Healthy People 2010 national objective for gonorrhea incidence is 19 cases per 100,000. King County is working toward met this goal with the 2003 rate of 76 cases per 100,000.

The Aptima test used to diagnose chlamydia is a combined test that will also diagnose gonorrhea. Gonorrhea positives from the Region X Infertility Prevention Project (IPP) sites include:

Site	<u>Male</u>			<u>Female</u>		
	# Tests	# Pos	% Pos	# Tests	# Pos	% Pos
International District	35	1	2.9	532	1	0.2
International District - Holly Park	4	0	0.0	219	3	1.4
PP of Western WA - Bellevue	1	0	0.0	1,327	4	0.3
PP of Western WA - Kenmore	8	0	0.0	1,094	3	0.3
PP of Western WA - Kent Valley	1	0	0.0	120	0	0.0
PP of Western WA - Federal Way	0	0	0.0	989	7	0.7
PP of Western WA - Central	5	0	0.0	2,363	5	0.2
PP of Western WA - University	3	0	0.0	1,992	2	0.1

Site	<u>Male</u>			<u>Female</u>		
	# Tests	# Pos	% Pos	# Tests	# Pos	% Pos
Echo Glen Detention (Snoqualmie)	260	1	0.4	113	1	0.9
Seattle University	0	0	0.0	52	0	0.0
Cedar River Clinic-Renton	7	0	0.0	3,059	12	0.4

*For Region X Infertility Prevention Project Screening Criteria see page 12.

Appendix A: Data Sources, Analyses and Limitations

Cases: The number of cases identified and submitted by providers to local health jurisdictions and forwarded to the Washington State Department of Health, Office of Infectious Disease and Reproductive Health, STD/TB Services.

Population: Denominator population estimates for incidence rates are from Washington State Adjusted Population Estimates, Office of Financial Management (OFM), February 2004.

Incidence Rates: Incidence rates are calculated as the number of new episodes of a disease (not persons) in a given year divided by the total population (age and sex appropriate) for that year, expressed as a rate per 100,000. Incidence rates allow comparisons between two or more populations by standardizing the denominator and are the most appropriate statistic to use when investigating differences between groups. Rates should not be calculated for incident case totals fewer than five because the rates are unstable.

Data Reporting: Gonorrhea, chlamydia, syphilis, and herpes (initial infection) are reportable diseases to the local health jurisdictions and forwarded to the Department of Health. To be reported and included in surveillance data, disease definition must be met.

Disease Definitions:

- Gonorrhea - isolation of *Neisseria gonorrhoea* from a clinical specimen or observation of gram-negative intracellular diplococci in urethral or endocervical smears, culture or non-culture methods.
- Chlamydia- isolation of *Chlamydia trachomatis* from a clinical specimen by culture or non-culture methods that detect chlamydia antigen or genetic material.
- Syphilis - a complex sexual transmitted disease with a highly variable clinical course. See CDC guidelines for surveillance definition.
- Herpes Simplex (initial infection only) - diagnostic criteria for reporting can be made through clinical observation of typical lesions and/or laboratory confirmation.
- Chancroid - an STD characterized by painful genital ulceration and inflammatory inguinal adenopathy.
- Granuloma Inguinale (GI) - a slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area.
- Lymphogranuloma Venereum (LGV) - characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis.
- HIV – Human Immunodeficiency Virus is a retrovirus causing HIV disease and AIDS (Acquired Immunodeficiency Syndrome) in humans. This pathogen is transmitted from person to person through unprotected sexual contact, sharing of injection equipment and transfusion/transplantation with infected blood or tissue.
- AIDS – Acquired Immunodeficiency Syndrome is the advanced stage of HIV-disease in humans and is characterized by severe suppression of immune response. Persons with AIDS are at risk for increased susceptibility to opportunistic infections, degradation of major organ systems and eventual death.

The diagnosing practitioner is responsible for providing the case information which includes patient demographics, source of diagnosis, limited clinical information including site of infection and treatment, and date of diagnosis.

Data Strengths: Sexually transmitted disease data may provide more timely information on behavioral trends in the community than diseases with similar modes of transmission particularly HIV/AIDS. There is a high level of participation in the STD surveillance system by private providers of STD services.

Data Limitations: Clinically diagnosed cases of STDs (without laboratory confirmation) may be missed through this surveillance system. Depending upon diagnosing practices, completeness of reporting may vary by source of health care.

Data Biases: Biases could exist in the data due to under-reporting, inability of certain populations to access medical services, error in laboratory reporting, or differential reporting or screening by disease and source of care. However, it is assumed that the number of cases that would fall into these categories is small and normally distributed, thus not significantly impacting the calculated STD rates.

Assumptions: It is assumed that the cases reported from year to year are independent of each other. One violation of this assumption could be if a person who has an STD one year is more likely to have an STD the following year. Also, repeat episodes of the same STD by the same person are not excluded from the numerator count; it is felt that these numbers are not large enough to significantly impact the calculated incidence rates. Finally, we have assumed that all rates follow a chi-square distribution.

Female Selective Screening Criteria in Family Planning and Expansion Sites:

1. Women 24 and should be tested at least annually when undergoing a pelvic exam.
2. All women 25 and older who meet one of the following criteria should be screened:
 - a. Cervical findings of mucopurulent cervicitis, friable cervix, ectopy with inflammation or edema,
 - b. PID (Pelvic Inflammatory Disease),
 - c. Exposed to CT in past 60 days,
 - d. Symptomatic sex partner during past 60 days,
 - e. Pregnant,
 - f. Seeking an IUD insertion,
 - g. Prior chlamydial infection within the past 12 months.