

Sexually Transmitted Diseases

2007 Annual Report

prepared by

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Executive Summary

Sexually transmitted diseases (STDs) continue to be a problem in Sonoma County. The diseases covered in this report include chlamydia, gonorrhea and primary and secondary (P&S) syphilis, although AIDS, Chancroid, Non-Gonococcal Urethritis, and Pelvic Inflammatory Disease are also reportable conditions.¹ In addition to complications from the diseases themselves, STDs can increase the risk of HIV transmission and acquisition. Of particular concern in Sonoma County:

Chlamydia

- The 2007 rate of chlamydia in Sonoma County is 158 cases per 100,000 population.²
- Women aged 20-24 years old had the highest incidence rate of chlamydia.
- Hispanics and African Americans are disproportionately affected by chlamydia.

Gonorrhea

- The 2007 rate of gonorrhea, 18.6 cases per 100,000 persons, is at the Healthy People 2010 goal of 19 cases per 100,000 population.³
- Men aged 25-29 and women aged 20-24 highest incidence rates of gonorrhea.
- Men and all Hispanics are disproportionately affected by gonorrhea.

Primary and Secondary Syphilis

- Five cases of P&S syphilis were reported in 2007, all in White males.
- Since 2003, all cases of P&S syphilis have been reported among males.
- The 2005-07 rate of P&S syphilis in Sonoma County is 1.4 cases per 100,000 population, higher than the Healthy People 2010 goal of 0.2 cases per 100,000 population.³

The 2007 rates of disease and the number of cases reported seem to have leveled off since the 2003-05 increase (Table 1).

Table 1 - Cases of Selected STDs by Year, Sonoma County 1996-2007

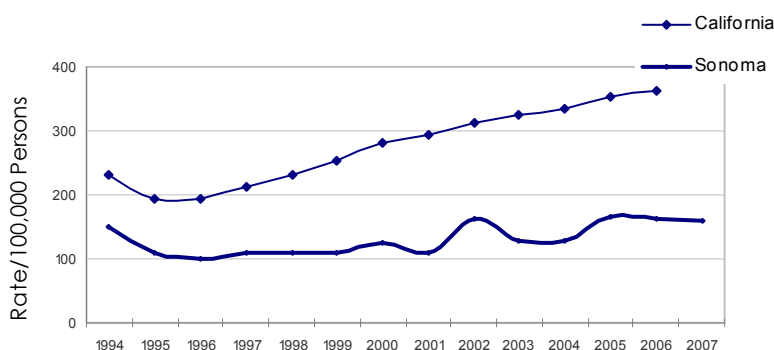
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Chlamydia	484	488	492	578	513	760	613	613	803	802	788
Gonorrhea	42	32	32	63	34	88	117	142	149	126	93
P&S Syphilis	0	3	1	2	1	18	13	6	12	3	5

Chlamydia

Chlamydia is the most commonly reported STD in the United States, California and Sonoma County. In particular, chlamydia is a health problem for women. Up to 40% of women with untreated chlamydia develop pelvic inflammatory disease (PID) which can lead to infertility.⁴ In pregnant women, chlamydia can also cause significant and sometimes permanent damage to the unborn child. Because the majority of chlamydia infections cause no symptoms, this disease is significantly under-diagnosed. Consequently, the facts and figures presented below represent only a fraction of the true burden of disease in Sonoma County.

In 2007, Sonoma's case rate remains level at 158 cases per 100,000, slightly lower than the 2006 rate but still higher than pre-2000 levels. The California rate, consistently higher than the local rate, continues to increase over time (Figure 1). There are several possible factors contributing to the increasing trend starting in 2001 and continuing to 2006, including better testing methodology and improved screening.⁵

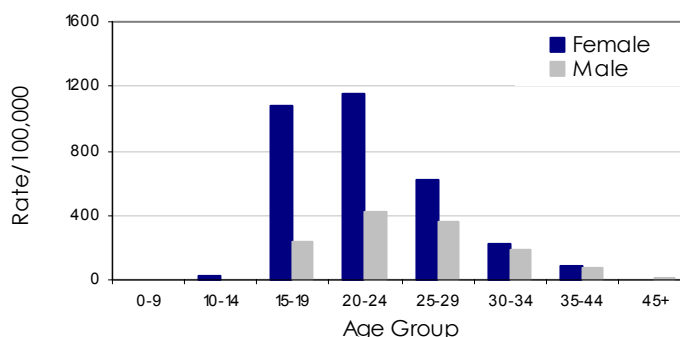
Figure 1 - Chlamydia Case Rate
Sonoma County and California, 1994-2007



Women of childbearing age have significantly higher rates of chlamydia compared to males, although these rates are biased since the majority of screening programs are directed towards women.

In Sonoma County, groups with the highest rates are women aged 20-24 (1,154 cases/100,000) followed by women aged 15-19 (1,078 cases/100,000, Figure 2). In males, the highest rate is also among men aged 20-24 (427 cases/100,000). Similar figures are reported on the state and national level. In 2006, women aged 20-24 had the highest rate in California (2,807 cases/100,000) and women aged 15-19 had the highest rate nationally (2,863 cases/100,000).^{5,6}

Figure 2 - Chlamydia: Age and Gender Specific Rates
Men and Women in Sonoma County, 2007



Comparing the proportion of chlamydia cases reported in 2007 by race and ethnicity to the population distribution of Sonoma County shows that chlamydia affects Hispanic and African American men and women more than other groups (Table 2). Notably, the age-adjusted rate of chlamydia infections in African American women is over three times higher than the rate in White, non-Hispanic women (591 vs. 184 cases/100,000, respectively). This is also seen in males,

with an incidence rate in African American men over three times higher than then the rate in White, non-Hispanic men (281 vs. 74 cases/100,000, respectively).

Table 2 - Chlamydia: Race, Ethnicity and Gender-Specific Rates
Age-Adjusted Rates per 100,000 Population, Sonoma County, 2007

	Chlamydia			Population	
	Rate	Cases	Percent	Number	Percent
County Total*	160.0	788	100	498,868	100
Female Total	231.3	550	69.8	251,160	50.3
White	184.4	285	51.8	182,099	72.5
Hispanic	297.4	165	30.0	45,729	18.2
Asian/Pacific Islander	70.8	8	1.4	10,825	4.3
African American	590.7	25	4.5	3,490	1.4
American Indian/Alaska Native	59.9	<5	<1	3,243	1.4
MultiRace	--	--	--	5,774	2.3
Other/Unknown	--	65	11.8	--	--
Male Total	94.0	237	30.0	247,708	49.7
White	73.6	117	49.3	172,243	69.5
Hispanic	110.0	72	30.4	52,732	21.3
Asian/Pacific Islander	36.4	4	1.7	9,907	4.0
African American	280.6	14	5.9	4,294	1.7
American Indian/Alaska Native	0	0	0.0	3,039	1.3
MultiRace	--	--	--	5,493	2.2
Other/Unknown	--	30	12.6	--	--

*1 case with unknown gender was excluded from the Male/Female strata.

The increased burden of chlamydia on non-Whites is also reflected in the proportion of cases reporting Hispanic ethnicity or African American race. Eighteen percent of females and 21% of males in Sonoma County are Hispanic, yet Hispanic persons accounted for 30% of male and female cases in 2007. Similarly, 1-2% of the County population reports African American race, but both African American men and women account for 4-6% of cases.

Repeat Chlamydia Infections

In 2007, 3.5% of persons diagnosed with chlamydia were re-infected within the 2007 calendar year. On average, persons with repeat chlamydia infections were significantly younger than those with single diagnoses (mean age 21 vs. 24, p=0.0014, Satterthwaite). No other significant demographic differences were seen in those re-infected during 2007.

Gonorrhea

The increasing incidence of gonorrhea cases is not nationwide and appears to be unique to the west coast¹⁰.

In Sonoma County, the incidence steadily increased from 1999 to 2005, and has since decreased to 18.6 cases per 100,000 persons (Figure 3). The 2007 rate of gonorrhea just meets Healthy People 2010 goal of 19 new cases per 100,000 population.³

Gonorrhea affects young adults of both genders and is also prevalent among middle-aged men. The rates of gonorrhea are highest in women 20 to 24 years of age (69 cases/100,000) and men 25 to 29 years of age (77 cases/100,000) (Figure 5). Several factors contribute to the higher proportion of cases seen in men compared to women. First, the symptoms of gonorrheal infection in men are much more pronounced than in women, and most often will prompt a health care visit. Second, this disease and other STDs have been resurging among gay and bisexual men, thereby increasing the proportion of males with gonorrhea.⁵

Similar figures are reported on the state and national level. In 2006, women and men aged 20-24 had the highest age-specific rate in California (394 cases/100,000, 313 cases/100,000) and women aged 15-19 and men aged 20-24 had the highest age-specific rate nationally (647 cases/100,000, 454 cases/100,000).^{6,5}

Figure 3 - Gonorrhea Case Rate
Sonoma County and California, 1994-2007

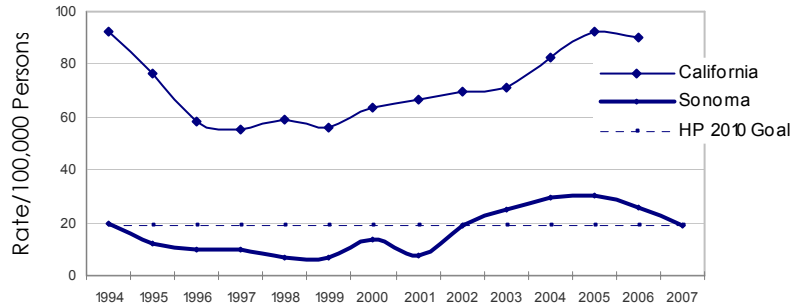
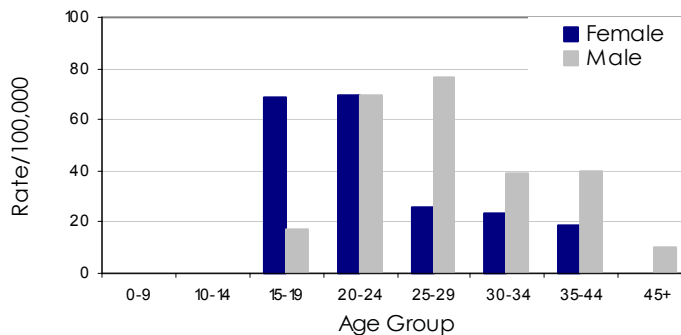


Figure 4. Gonorrhea: Age and Gender Specific Rates
Men and Women in Sonoma County, 2007



When the proportion of gonorrhea cases reported in 2007 is compared to the population distribution of Sonoma County, gonorrhea affects Hispanics more than other groups (Table 3). Eighteen percent of females and 21% of males in Sonoma County are Hispanic, yet Hispanic persons accounted for 49% of female cases and 59% of male cases in 2007.

This trend is also reflected in the disease incidence. The age-adjusted rate of gonorrhea infection among Hispanic females is over twice the rate for White, non-Hispanic females (Table 3).

Table 3 - Gonorrhea: Race, Ethnicity and Gender-Specific Rates
 Age-Adjusted Rates per 100,000 Population, Sonoma County, 2007

	Gonorrhea			Population	
	Rate	Cases	Percent	Number	Percent
County Total	19.4	93	100	498,868	100
Female Total	15.9	37	39.8	251,160	50.3
White	12.0	18	48.6	182,099	72.5
Hispanic	23.3	13	35.1	45,729	18.2
Asian/Pacific Islander	--	<3	<6.0	10,825	4.3
African American	67.5	3	8.1	3,490	1.4
American Indian/Alaska Native	--	<3	<6.0	3,243	1.4
MultiRace	--	--	--	5,774	2.3
Unknown	--	<3	<6.0	--	--
Male Total	22.9	56	60.2	247,708	49.7
White	21.0	33	58.9	172,243	69.5
Hispanic	24.4	15	26.8	52,732	21.3
Asian/Pacific Islander	--	<3	1.8	9,907	4.0
African American	40.0	2	3.6	4,294	1.7
American Indian/Alaska Native	--	<3	0	3,039	1.3
MultiRace	--	--	--	5,493	2.2
Unknown	--	5	8.9	--	--

Co-diagnosis of Chlamydia and Gonorrhea

In 2007, 34% of persons diagnosed with gonorrhea were co-diagnosed with chlamydia. This is comparable to California surveillance data from family planning clinics where 33% of females and 21% of males diagnosed with gonorrhea had a co-diagnosis of chlamydia.⁶ In Sonoma County, persons with a co-diagnosis were equally likely to be male or female, more likely to be non-White, and more likely to be younger than 25 or older than 45 (see Table 4).

Table 4 – Selected Characteristics of Persons Co-Diagnosed with Chlamydia and Gonorrhea
 Sonoma County 2007

	Total GC		GC, non CT		GC and CT	
	N	%	N	%	N	%
Total	93	100	62	67	31	33
Gender						
Male	56	60	37	60	19	61
Female	37	40	25	40	12	39
Race/Ethnicity						
White	51	55	41	66	11	35
Hispanic	28	30	17	27	11	35
African American	5	5	1	2	4	13
Other, non-White	7	8	3	5	3	10
Unknown	2	2	0	0	2	7
Age Group						
<14	0	0	0	0	0	0
15-19	15	16	7	11	8	26
20-24	24	26	16	26	8	26
25-29	16	17	10	16	6	19
30-34	8	9	6	10	2	7
35-44	19	20	17	27	2	7
45+	11	12	6	10	5	16

Syphilis

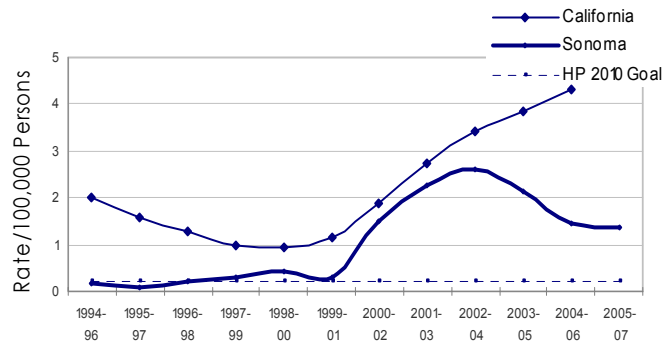
Primary and Secondary Syphilis

From 1996 - 1997, no cases of P&S syphilis were reported in Sonoma County. Unfortunately, the nationwide trend towards increasingly low levels of disease has dramatically reversed. In California, this trend started in 2000 and in Sonoma County started in 2001. (Figure 5). The rates of disease locally have declined since 2005, but have leveled off at a rate of 1.4 cases per 100,000; seven times higher than the HP 2010 goal of 0.2 cases per 100,000 population.³

Since 2003, all cases of P&S syphilis reported in Sonoma County have been male. In 2007, the majority of cases were among males over the age of 30. All 2007 cases reported White race.

This is similar to California overall where the 2006 rate of P&S syphilis in males is 13 times higher than the rate in females.⁶ Among all California males, the age group with the highest case rate is also those aged 35-44.⁶

Figure 5. P&S Syphilis Rate – Three-year Rolling Average
Sonoma County and California, 1994 - 2007



Early Latent Syphilis and Other Latent Disease

If not diagnosed and treated in an early stage, syphilis can persist and cause long-term health problems. In Sonoma County, the demographics of persons diagnosed with late stage syphilis are different than those diagnosed at earlier stages (Table 5). Since 2002, all persons diagnosed with primary, secondary or early latent disease have been males, and the majority was White (77% P&S, 63% Early Latent). Persons diagnosed with later stage disease (Late Syphilis >1 year) include women (39%) and a larger proportion of Hispanics (52%).

Table 5 – Syphilis: Demographic Comparison by Stage of Disease
Sonoma County, 2002 - 2007

	Primary and Secondary		Early Latent (<1 Year)		Late Syphilis (>1 Year)	
	N	%	N	%	N	%
Gender						
Women	0	0	0	0	13	39
Men	57	100	24	100	33	61
Race/Ethnicity						
White/Caucasian	44	77	15	63	17	37
Hispanic	10	18	6	25	24	52
Asian/Pacific Islander	1	2	0	0	1	2
African American	0	0	1	4	1	2
Other/Unknown	2	3	2	8	3	6

Age Group				
15-19	1	2	0	0
20-24	6	12	4	17
25-29	4	8	4	17
30-34	8	14	5	21
35-44	23	40	4	16
45+	15	26	7	29
Total	57		24	46

Syphilis has been targeted nationally for eradication. This disease is relatively easy to diagnose and cure in its early stages. In addition to improving community health overall, the effect of syphilis eradication would significantly reduce two other significant health events, namely the increased risk of transmission of HIV and the devastating effects on the fetus when exposed in utero.

References

1. Title 17, California Code of Regulations (CCR), §2500, §2593, §2641-43, and §2800-2812 Reportable Diseases and Conditions. Revised 2/18/2008.
2. See Chin J, ed. Control of Communicable Diseases Manual 2000 for definitions of the communicable diseases listed in this chapter.
3. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.
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