



2007 Minnesota Sexually Transmitted Disease Statistics

Minnesota Department of Health, STD and HIV Section

For more information, contact: (651) 201-5414

Overall Summary

The 2007 Sexually Transmitted Disease (STD) Statistics includes summary of surveillance data for Minnesota's reportable STDs: chlamydia, gonorrhea, syphilis, and chancroid. In Minnesota, STDs are the most commonly reported communicable diseases and account for over 60% of all notifiable diseases reported to the Minnesota Department of Health (MDH). In 2007 the number of reported bacterial STDs reached their highest level ever with 17,057 cases reported. This represents an overall increase of 4% from the previous year and is part of a continued trend observed over the past ten years. The change in incidence rates varied by disease, with chlamydia, gonorrhea, and primary/secondary syphilis rates increasing by 4, 5 and 26 percent, respectively.

This report provides a comprehensive review of STD trends and current morbidity in Minnesota; data are also available in a slide presentation at: <http://www.health.state.mn.us/divs/idepc/dtopics/stds/stdstatistics.html>

Tables included in this report:

Table 1. Number of Cases and Rates (per 100,000 persons) of Chlamydia, Gonorrhea, Syphilis (All Stages) and Chancroid— Minnesota, 2003-2007

Table 2a. Chlamydia: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2007

Table 2b. Gonorrhea: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2007

Table 2c. Primary/Secondary Syphilis: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2007

Table 3. Number of Chlamydia and Gonorrhea Cases and Rates (per 100,000 persons) by County— Minnesota, 2007

Sources of Data

STD Case Reporting

Under state law (Minnesota Rule 4605.7040), both physicians and laboratories must report laboratory-confirmed infections of chlamydia, gonorrhea, syphilis, and chancroid to the MDH within one working day. Other common sexually transmitted conditions such as herpes simplex virus (HSV) and human papillomavirus (HPV) are not reported to the MDH.

Partner Services Program

All early syphilis cases reported to the MDH are referred to the Partner Services Program to ensure treatment of patients and their sexual partners. Additional surveillance data is collected through this process including information on sexual behavior and drug use.

Gonococcal Isolate Surveillance Project (GISP)

As part of the national Gonococcal Isolate Surveillance Project (GISP) funded by the Centers for Disease Control and Prevention (CDC), the MDH monitors antimicrobial susceptibilities of *Neisseria gonorrhoeae*. A Minneapolis STD clinic submits isolates on a monthly basis to the MDH, who performs the susceptibility testing. Sociodemographic and behavioral data for each case are also submitted. The MDH also conducts testing on additional isolates collected outside of the GISP project from a St. Paul STD clinic.

Minnesota Infertility Prevention Project (MIPP)

Minnesota participates in the national Infertility Prevention Project funded by the CDC. Through MIPP, the MDH funds clinics across the state – including STD, family planning, adolescent, and community clinics – to provide testing and treatment for chlamydia and gonorrhea to men and women ages 15-24. Participating clinics submit to MDH demographic and clinical data on every test performed. With information on positive as well as negative tests, prevalence (or positivity) rates for chlamydia and gonorrhea can be calculated and monitored.

Limitations of Data

Several factors impact the completeness and accuracy of the MDH's STD surveillance data, including compliance with and completeness of case reporting among healthcare providers and laboratories. Clinically diagnosed cases, presumptively treated cases, and asymptomatic cases with no STD-related illnesses may be under-reported through the STD surveillance system. Furthermore, STD cases reported by laboratories lacking subsequent provider reporting may be excluded from the STD surveillance database. The majority of laboratory reports originate from facilities that do not routinely collect demographic and clinical information required for STD surveillance. In 2002, the MDH implemented an active surveillance process whereby providers are reminded to submit demographic and clinical information missing from cases reported solely through laboratories. Additional factors affecting validity of the STD surveillance data include STD screening coverage, individual test-seeking behavior, and accuracy of diagnostic tests. Thus, changes in STD rates may be due to one or more of these factors or due to actual changes in the incidence of STDs in the population.

Population counts used to calculate incidence rates by residence (i.e., state, counties, Minneapolis, and Saint Paul), by age, by gender, and by race/ethnicity were obtained from the U.S. Census Bureau. Incident rates (number of reported cases per 100,000 persons) were calculated using yearly case data and population counts from the decennial census. Population counts for 1991 to 1999 were estimated by interpolation between the 1990 and 2000 census data. Subsequent (2000-2007) rates were calculated using population counts from the 2000 Census, the most recent year for which counts by race, age, gender, and residence were available. Essentially, the denominator in rate calculations for 2000-2007 has remained stable while cases have increased. As a result, rates for these years – especially the most recent ones – may be inflated. Furthermore, the 2000 Census data on race include the number of persons by race alone, or in combination with one or more races. Thus, persons who identified themselves by more than one race are overrepresented in the denominators.

Chlamydia

Chlamydia is the most commonly reported communicable disease in Minnesota. From an all-time low of 115 cases per 100,000 in 1996, the incidence of chlamydia has more than doubled to 273 per 100,000 in 2007. Over these years, increases were seen across all gender, age, race and geographical groups. The rates almost tripled among men (54 to 153 per 100,000) and more than doubled among females (175 to 390 per 100,000). Among 25-39 year-olds, the incidence rate more than tripled. Rates doubled among Whites, Hispanics and Asian/Pacific Islanders and increased by 69% and 65% among Blacks and American Indians, respectively. In addition to an increase of disease in the population, other factors may have contributed to the increases seen during these years including increased reporting by providers, use of improved STD diagnostic tools, improved screening practices by clinicians and the addition of an active surveillance component to the MDH's STD surveillance system.

In 2007, the chlamydia rate increased by 4% overall and was highest among women (390 per 100,000), Blacks (1,871 per 100,000), and 20-24 year-olds (1,592 per 100,000). The rates increased by 1% among males and 5% among females. Although adolescents (15-19 year-olds) and young adults (20-24 year-olds) have the highest rates and comprise the majority of cases, rates increased the most among 30-34 year-olds (14%) and 35-39 year-olds (17%). Across geographic areas, the City of Minneapolis had the highest incidence rate (769 per 100,000), but the greatest increase in 2007 was seen in Greater Minnesota (8%). Blacks had the largest increase (5%); rates also increased among Whites and Asian/Pacific Islanders. There was a 7% drop in the rate among Hispanics and a small (1%) decrease among American Indians. Racial disparities in chlamydia continue to persist in Minnesota with the incidence among Blacks being 15 times that among Whites. Other racial/ethnic

groups are disproportionately affected by chlamydia; incidence rates among American Indians, Asian/Pacific Islanders and Hispanics were 4, 2.5, and 5 times higher than the rate among Whites, respectively.

Gonorrhea

From 1997 to 2007, the incidence of gonorrhea in Minnesota increased steadily from 51 to 70 per 100,000 persons. As with chlamydia, the incidence of infection was higher among some segments of the population compared to others. The rates increased by 31% among males and 42% among females. Across age groups, the rates increased by 56% among 20 to 24 year-olds and 68% among 25 to 29 year-olds. The rates increased among all racial/ethnic groups with a particularly large increase among Hispanics (49%). During this period, Blacks continued to have gonorrhea incidence rates far higher than other race groups.

In 2007 the incidence rate of gonorrhea increased by 5% from 67 to 70 per 100,000 persons. As with chlamydia, gonorrhea rates were highest among females (78 per 100,000), Blacks (851 per 100,000), and 20-24 year-olds (333 per 100,000). The rates increased by 6% among females and 3% among males. Among adolescents and young adults (ages 15-24), the rates increased by 4%. Although the Cities of Minneapolis and Saint Paul accounted for the highest rates of infection, incidence rates increased dramatically in Greater Minnesota (34% overall; 10% among men and 46% among women). Additionally, Saint Paul saw a 9% increase (13% in men, 6% in women). Compared to chlamydia, greater racial disparities in gonorrhea infections continue to persist in Minnesota with an incidence rate among Blacks being 41 times that among Whites. These racial disparities are also evident among American Indians and Hispanics, whose rates are 4.8 times those of Whites.

The emergence of *quinolone-resistant Neisseria Gonorrhea* (QRNG) in recent years has become a particular concern. The first QRNG isolates were identified in 2002 when 4 of the 268 isolates tested the MDH were resistant to ciprofloxacin (a quinolone). Subsequently, the overall prevalence of QRNG increased from 1.5% in 2002 to 8.6% in 2007. In 2007, 29 QRNG cases were male and 2 were female; 61% were White and 10% were Asian; and the cases were 31 years old on average. A lower percentage (58%) of the cases were among men who have sex with men (MSM) compared to 2006 (89%) due to an increase in the number of heterosexual cases. QRNG prevalence remains lower among heterosexuals (4.5%) compared with MSM (28%), but is on the rise.

Syphilis

Incidence rates of primary/secondary syphilis in Minnesota remained stable from 1997 until 2002 when an outbreak was observed among men who have sex with men (MSM) and the overall rate increased from 0.7 to 1.2 per 100,000 persons. Since 2002, primary/secondary syphilis rates have fluctuated but remained elevated. In addition, the number of early syphilis cases (primary, secondary, and early latent stages) increased from 83 in 2002 to 114 in 2007, with MSM accounting for 93% of all cases among males. Meanwhile, early syphilis among women has been declining; there were only 2 female cases in 2007. Therefore, the disparity in early syphilis rates between males and females has grown larger and reflects the increasing burden within the MSM community.

In 2007, the overall incidence rate of primary/secondary syphilis increased from 1.0 to 1.2 per 100,000. The number of cases among males increased from 43 in 2006 to 58 in 2007 while among females, the number decreased from 4 to 1. Primary/secondary syphilis cases among MSM, who comprised 95% of male cases in 2007, increased by 38%. Increases in cases were observed across all geographic areas; however the City of Minneapolis remains to account for majority of cases (59%). The incidence of primary/secondary syphilis infection remained stable or decreased among persons younger than 30, but increased in every age group over 30. Whites comprised the majority (70%) of cases in 2007.

The number of early syphilis cases also increased in 2007, to 114 (versus 105 in 2006). The number of cases among women fell dramatically (from 14 to 2), while cases among men increased from 90 to 111 (23%). Of all cases reported, 97% were among males and 93% of these were MSM. Most (74%) of the MSM cases were White, but a disproportionate number (15%) were Black. Additionally, 59% were residents of Minneapolis. Among all early syphilis cases, the largest increase in a single age group was among persons older than 45 (9 cases in 2006; 23 cases in 2007). This was driven by an increase in older, White, MSM cases.

Chancroid

Chancroid remains extremely rare in Minnesota, with only one case being reported in the last decade (in 1999).

Summary Points

- From 1997-2007, Minnesota's chlamydia rate doubled while the gonorrhea rate increased slowly but steadily.
- Minnesota has seen a resurgence in syphilis since 2002, with men who have sex with men being especially impacted.
- STD racial disparities continue to persist in Minnesota with communities of color having the highest rates
- Between 2006 and 2007, incidence rates of chlamydia and gonorrhea increased by 4% and 5%, respectively. Primary/secondary syphilis increased by 35% among males (95% of whom were men who have sex with men), while cases among women remained low.
- In 2007, incidence rates of chlamydia increased by 1% among males and 5% among females; gonorrhea increased 3% among males and 6% among females.
- Although STD rates continue to be highest in the City of Minneapolis, the greatest increase in 2007 was in Greater Minnesota (8% for chlamydia, 34% for gonorrhea).
- Adolescents and young adults accounted for 68% of chlamydia and 56% of gonorrhea cases reported in 2007.
- In 2007, primary/secondary syphilis cases increased by 38% among men who have sex with men, who comprised 93% of all cases.
- The prevalence of quinolone-resistant *Neisseria gonorrhoeae* continues to be high (28%) among men who have sex with men, but the prevalence is rising in heterosexuals – 4.5% in 2007 compared to 0.8% in 2006.

**Table 1. Number of Cases and Rates (per 100,000 persons) of
Chlamydia, Gonorrhea, Syphilis, and Chancroid -- Minnesota, 2003 - 2007**

Disease	2003		2004		2005		2006		2007	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chlamydia	10,802	220	11,647	237	12,359	251	12,977	264	13,412	273
Gonorrhea	3,235	66	2,974	60	3,505	71	3,317	67	3,459	70
All Stages of Syphilis	198	4.0	148	3.0	210	4.3	188	3.8	186	3.8
Primary/Secondary Syphilis	49	1.0	27	0.5	71	1.4	47	1.0	59	1.2
Early Latent Syphilis	45	0.9	22	0.4	48	1.0	58	1.2	55	1.1
Late Latent Syphilis	103	2.1	97	2.0	88	1.8	81	1.6	72	1.5
Other Syphilis ^I	1	0.0	1	0.0	1	0.0	0	0.0	0	0.0
Congenital Syphilis ^{II}	0	0.0	1	1.4	2	2.8	2	2.8	0	0.0
Chancroid	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Note: Data exclude cases diagnosed in federal or private correctional facilities.

U.S. Census 2000 data is used to calculate rates.

^IIncludes unstaged neurosyphilis, latent syphilis of unknown duration, and late syphilis with clinical manifestations.

^{II} Congenital syphilis rate per 100,000 live births

Table 2a. Number of Cases and Rates (per 100,000 persons) of Chlamydia by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2007

Group	Chlamydia						
	Males		Females		Total ^I		
	Cases	%	Cases	%	Cases	%	Rate
Residence^{II}							
Minneapolis	949	25%	1,994	21%	2,943	22%	769
St. Paul	540	14%	1,351	14%	1,893	14%	659
Suburban ^{III}	1,172	31%	3,020	31%	4,192	31%	213
Greater Minnesota	912	24%	2,970	31%	3,882	29%	170
Age							
< 15 yrs	11	0%	130	1%	141	1%	13
15-19 yrs	661	18%	3,347	35%	4,010	30%	1,071
20-24 yrs	1,385	37%	3,748	39%	5,134	38%	1,592
25-29 yrs	792	21%	1,497	15%	2,289	17%	716
30-34 yrs	434	12%	551	6%	985	7%	279
35-39 yrs	211	6%	232	2%	443	3%	107
40-44 yrs	116	3%	90	1%	206	2%	50
45-49 yrs	62	2%	46	0%	108	1%	30
50-54 yrs	35	1%	26	0%	61	0%	20
55+ yrs	23	1%	12	0%	35	0%	4
Race/Ethnicity							
White	1,293	35%	4,306	44%	5,600	42%	130
Black	1,394	37%	2,401	25%	3,797	28%	1,871
American Indian	60	2%	349	4%	409	3%	504
Asian/PI	112	3%	412	4%	524	4%	311
Other ^{IV, V}	143	4%	424	4%	567	4%	x
Unknown ^V	728	20%	1,787	18%	2,515	19%	x
Hispanic ^{VI}	290	8%	636	7%	926	7%	646
Total	3,730	100%	9,679	100%	13,412	100%	273

Note: Data exclude cases diagnosed in federal or private correctional facilities.

U.S. Census 2000 data is used to calculate rates.

^I Total includes 3 cases of chlamydia diagnosed in transgendered persons.

^{II} Residence missing for 502 cases of chlamydia.

^{III} Suburban is defined as the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington Counties, excluding the cities of Minneapolis and St. Paul).

^{IV} Includes persons reported with more than one race.

^V No comparable population data available to calculate rates.

^{VI} Persons of Hispanic origin may be of any race.

Table 2b. Number of Cases and Rates (per 100,000 persons) of Gonorrhea by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2007

Group	Gonorrhea						
	Males		Females		Total ^I		
	Cases	%	Cases	%	Cases	%	Rate
Residence^{II}							
Minneapolis	672	44%	573	30%	1,245	36%	325
St. Paul	314	21%	386	20%	700	20%	244
Suburban ^{III}	331	22%	496	26%	827	24%	42
Greater Minnesota	153	10%	410	21%	564	16%	25
Age							
< 15 yrs	4	0%	30	2%	34	1%	3
15-19 yrs	227	15%	632	33%	859	25%	229
20-24 yrs	420	27%	653	34%	1,073	31%	333
25-29 yrs	331	22%	326	17%	657	19%	205
30-34 yrs	212	14%	151	8%	363	10%	103
35-39 yrs	120	8%	72	4%	192	6%	47
40-44 yrs	95	6%	32	2%	128	4%	31
45-49 yrs	65	4%	23	1%	88	3%	24
50-54 yrs	29	2%	6	0%	35	1%	12
55+ yrs	25	2%	5	0%	30	1%	3
Race/Ethnicity							
White	319	21%	636	33%	955	28%	22
Black	891	58%	837	43%	1,728	50%	851
American Indian	13	1%	68	4%	81	2%	100
Asian/PI	13	1%	21	1%	34	1%	20
Other ^{IV,V}	41	3%	60	3%	101	3%	x
Unknown ^V	251	16%	308	16%	560	16%	x
Hispanic ^{VI}	87	6%	58	3%	145	4%	101
Total	1,528	100%	1,930	100%	3,459	100%	70

Note: Data exclude cases diagnosed in federal or private correctional facilities.

U.S. Census 2000 data is used to calculate rates.

^I Total includes 1 case of gonorrhea diagnosed in transgendered persons.

^{II} Residence missing for 123 cases of gonorrhea.

^{III} Suburban is defined as the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington Counties, excluding the cities of Minneapolis and St.

^{IV} Includes persons reported with more than one race.

^V No comparable population data available to calculate rates.

^{VI} Persons of Hispanic origin may be of any race.

Table 2c. Number of Cases and Rates (per 100,000 persons) of Primary/Secondary Syphilis by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2007

Group	Primary & Secondary Syphilis						
	Males		Females		Total		
	Cases	%	Cases	%	Cases	%	Rate
Residence^I							
Minneapolis	35	60%	0	0%	35	59%	9.1
St. Paul	4	7%	1	100%	5	8%	1.7
Suburban ^{II}	15	26%	0	0%	15	25%	0.8
Greater Minnesota	3	5%	0	0%	3	5%	0.1
Age							
< 15 yrs	0	0%	0	0%	0	0%	0.0
15-19 yrs	2	3%	0	0%	2	3%	0.5
20-24 yrs	5	9%	0	0%	5	8%	1.6
25-29 yrs	8	14%	1	100%	9	15%	2.8
30-34 yrs	13	22%	0	0%	13	22%	3.7
35-39 yrs	9	16%	0	0%	9	15%	2.2
40-44 yrs	10	17%	0	0%	10	17%	2.4
45-49 yrs	6	10%	0	0%	6	10%	1.6
50-54 yrs	4	7%	0	0%	4	7%	1.3
55+ yrs	1	2%	0	0%	1	2%	0.1
Race/Ethnicity							
White	40	69%	1	100%	41	69%	0.9
Black	11	19%	0	0%	11	19%	5.4
American Indian	0	0%	0	0%	0	0%	0.0
Asian/PI	1	2%	0	0%	1	2%	0.6
Other ^{III, IV}	1	2%	0	0%	1	2%	x
Unknown ^{IV}	5	9%	0	0%	5	8%	x
Hispanic ^V	1	2%	0	0%	1	2%	0.7
Total	58	100%	1	100%	59	100%	1.2

Note: Data exclude cases diagnosed in federal or private correctional facilities.

U.S. Census 2000 data is used to calculate rates.

^I Residence missing for 1 case of P&S syphilis.

^{II} Suburban is defined as the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington Counties, excluding the cities of Minneapolis and St. Paul).

^{III} Includes persons reported with more than one race.

^{IV} No comparable population data available to calculate rates.

^V Persons of Hispanic origin may be of any race.

**Table 3. Number of Cases and Rates¹ (per 100,000 persons) of Chlamydia and Gonorrhea
by County of Residence -- Minnesota, 2007**

County	Chlamydia		Gonorrhea		County	Chlamydia		Gonorrhea	
	Cases	Rate	Cases	Rate		Cases	Rate	Cases	Rate
Aitkin	10	65	1	-	Marshall	6	59	0	-
Anoka	685	230	132	44	Martin	21	96	0	-
Becker	23	77	3	-	Meeker	18	79	5	22
Beltrami	147	371	16	40	Mille Lacs	57	255	2	-
Benton	46	134	5	15	Morrison	31	98	1	-
Big Stone	5	86	0	-	Mower	89	231	13	34
Blue Earth	239	427	20	36	Murray	12	131	0	-
Brown	23	85	1	-	Nicollet	33	111	4	-
Carlton	53	167	8	25	Nobles	45	216	3	-
Carver	73	104	6	9	Norman	3	-	0	-
Cass	69	254	7	26	Olmsted	308	248	87	70
Chippewa	27	206	1	-	Otter Tail	25	44	6	10
Chisago	88	214	9	22	Pennington	13	96	3	-
Clay	87	170	7	14	Pine	48	181	2	-
Clearwater	5	59	2	-	Pipestone	2	-	1	-
Cook	2	-	0	-	Polk	25	80	2	-
Cottonwood	12	99	3	-	Pope	4	-	0	-
Crow Wing	91	165	16	29	Ramsey	2249	440	775	152
Dakota	794	223	124	35	Red Lake	1	-	0	-
Dodge	24	135	7	39	Redwood	15	89	2	-
Douglas	18	55	0	-	Renville	25	146	2	-
Faribault	19	117	0	-	Rice	106	187	8	14
Fillmore	13	62	1	-	Rock	1	-	0	-
Freeborn	57	175	2	-	Roseau	10	61	2	-
Goodhue	89	202	5	11	St. Louis	526	262	124	62
Grant	1	-	0	-	Scott	186	208	26	29
Hennepin	4742	425	1651	148	Sherburne	85	132	16	25
Houston	17	86	4	-	Sibley	7	46	1	-
Hubbard	13	71	0	-	Stearns	377	283	70	53
Isanti	51	163	3	-	Steele	74	220	7	21
Itasca	76	173	10	23	Stevens	3	-	0	-
Jackson	4	-	1	-	Swift	11	92	3	-
Kanabec	11	73	0	-	Todd	17	70	2	-
Kandiyohi	109	265	12	29	Traverse	0	-	0	-
Kittson	0	-	0	-	Wabasha	15	69	3	-
Koochiching	36	251	0	-	Wadena	6	44	0	-
Lac qui Parle	5	62	0	-	Waseca	31	159	4	-
Lake	12	109	2	-	Washington	299	149	58	29
Lake of the Woods	1	-	1	-	Watsonwan	9	76	0	-
Le Sueur	36	142	3	-	Wilkin	1	-	0	-
Lincoln	3	-	0	-	Winona	53	106	6	12
Lyon	43	169	4	-	Wright	125	139	25	28
McLeod	55	158	4	-	Yellow Medicine	18	162	2	-
Mahnomen	6	116	0	-					

Note: Data exclude cases diagnosed in federal or private correctional facilities.

County data missing for 502 chlamydia cases and 123 gonorrhea cases.

¹ Rates not calculated for counties with fewer than 5 cases.

U.S. Census 2000 data is used to calculate rates.