2008 Minnesota Sexually Transmitted Disease Statistics

Minnesota Department of Health, STD and HIV Section

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

Overall Summary

The 2008 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 2008 the number of reported bacterial STDs reached their highest level ever with 17,650 cases reported. This represents an overall increase of 3.5% 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 increasing by 7%, primary/secondary syphilis doubling, and gonorrhea decreasing by 12%.

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

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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.

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 (2000-2008) 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 2000-2008 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 292 per 100,000 in 2008. Over these years, increases were seen across all gender, age, race and geographical groups. The rates tripled among men (54 to 168 per 100,000) and more than doubled among females (175 to 413 per 100,000). Among 25-39 year-olds, the incidence rate more than tripled. Rates doubled among Whites, Blacks, Hispanics and American Indians and almost tripled among Asian/Pacific Islanders. 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 2008, the chlamydia rate increased by 7% overall and was highest among women (413 per 100,000), Blacks (2,111 per 100,000), and 20-24 year-olds (1,715 per 100,000). The rates increased by 10% among males and 6% 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 35-39 year-olds (12%). Across geographic areas, the City of Minneapolis had the highest incidence rate (786 per 100,000), but the greatest increase in 2008 was seen in Greater Minnesota (10%). Communities of color had double-digit increases in chlamydia rates (range, 13-15%), while Whites saw a more modest 3% increase. Racial disparities in chlamydia continue to persist in Minnesota with the incidence rate among Blacks being 16 times that among Whites. Other racial/ethnic groups are disproportionately affected by chlamydia; incidence rates among American Indians, Asian/Pacific Islanders and Hispanics were 4.4, 2.7, and 5.6 times higher than the rate among Whites, respectively.

Gonorrhea

From 1998 to 2008, the incidence of gonorrhea in Minnesota increased from 56 to 62 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 6% among males and 12% among females. Across age groups, the rates increased the most among 20 to 24 year-olds (27%) and 25 to 29 year- olds (23%). The rates increased among all racial/ethnic groups except Blacks; however, during this period Blacks continued to have gonorrhea incidence rates far higher than other race groups.

In 2008 the incidence rate of gonorrhea decreased by 12% from 71 to 62 per 100,000 persons. As with chlamydia, gonorrhea rates were highest among females (67 per 100,000), Blacks (766 per 100,000), and 20-24 year-olds (306 per 100,000). The rates decreased by 14% among females and 10% among males. Adolescents and young adults (ages 15-24) had the smallest decrease (7-8%), but continue to account for a disproportionate amount (59%) of all gonorrhea cases. The Cities of Minneapolis and Saint Paul accounted for the highest rates of infection, but Greater Minnesota was the only geographic region to see an increase in gonorrhea (14% overall; 43% among men and 3% among women). Compared to chlamydia, greater racial disparities in gonorrhea infections continue to persist in Minnesota with an incidence rate among Blacks being 40 times that among Whites. These racial disparities are also evident among American Indians and Hispanics, whose rates are 4 times those of Whites.

The emergence of *quinolone-resistant Neisseria Gonorrhea* (QRNG) in recent years has become a particular concern. Due to the high prevalence of QRNG in Minnesota as well as nationwide, quinolones are no longer recommended for the treatment of gonococcal infections.

Syphilis

Incidence rates of primary/secondary syphilis in Minnesota remained stable from 1998 until 2002 when an outbreak was observed among men who have sex with men (MSM) and the overall rate increased from 0.2 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 163 in 2008, with MSM accounting for 89% of all cases among males. Meanwhile, early syphilis among women has been declining; there were only 5 female cases in 2008. Therefore, the disparity in early syphilis rates between males and females has grown larger and reflects the increasing burden within the MSM community.

In 2008, the overall incidence rate of primary/secondary syphilis doubled from 1.2 to 2.4 per 100,000. The number of cases among males increased from 58 in 2007 to 111 in 2008 while among females, the number increased from 1 to 5. Primary/secondary syphilis cases among MSM, who comprised 89% of male cases in 2008, increased by 87%. Increases in cases were observed across all geographic areas; however the City of Minneapolis remains to account for majority of cases (44%). The incidence of primary/secondary syphilis infection increased in every age group, especially among persons 20-24 years old (5 cases in 2007 and 24 cases in 2008). Whites comprised the majority (77%) of cases in 2008, but African Americans still have a rate of primary/secondary syphilis that is almost 5 times higher than that among Whites.

The number of early syphilis cases also increased in 2008 (163 versus 114 in 2007). The number of cases among women increased slightly (from 2 to 5), while cases among men increased from 111 to 158 (42%). Of all cases reported, 97% were among males and 89% of these were MSM. Most (81%) of the MSM cases were White, but a disproportionate number (12%) were Black. Almost half were residents of Minneapolis. Among all early syphilis cases, the largest increase in a single age group was among persons 20-24 years old (14 cases in 2007; 33 cases in 2008).

Chancroid

Chancroid remains extremely rare in Minnesota, with only one case being reported in 2008. This is the first case reported to MDH since 1999.

Summary Points

- Over the past decade (1998-2008), Minnesota's chlamydia rate doubled while the gonorrhea rate fluctuated but increased slightly.
- Minnesota has seen a resurgence in syphilis since 2002, with men who have sex with men being especially impacted.
- Racial disparities in STD's continue to persist in Minnesota with communities of color having the highest rates.
- Between 2007 and 2008, the chlamydia incidence rate increased by 7% while the gonorrhea rate decreased by 12%. Cases of primary/secondary syphilis nearly doubled among males (89% of whom were men who have sex with men), while cases among women remained low.
- In 2008, incidence rates of chlamydia increased by 10% among males and 6% among females; gonorrhea decreased by 10% among males and 14% among females.
- Although STD rates continue to be highest in the City of Minneapolis, rates have been growing the fastest in the Twin Cities suburbs and greater Minnesota.
- Adolescents and young adults (ages 15-24) accounted for 69% of chlamydia and 59% of gonorrhea cases reported in 2008.
- In 2008, primary/secondary syphilis cases increased by 87% among men who have sex with men, who comprised 85% of all cases.

Table 1. Number of Cases and Rates (per 100,000 persons) of Chlamydia, Gonorrhea, Syphilis, and Chancroid -- Minnesota, 2004 - 2008

	2004		2005		2006		2007		2008	
Disease	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chlamydia	11,647	237	12,358	251	12,975	264	13,481	274	14,350	292
Gonorrhea	2,974	60	3,505	71	3,316	67	3,479	71	3,036	62
All Stages of Syphilis	148	3.0	210	4.3	188	3.8	186	3.8	263	5.3
Primary/Secondary Syphilis	27	0.5	71	1.4	47	1.0	59	1.2	116	2.4
Early Latent Syphilis	22	0.4	48	1.0	58	1.2	55	1.1	47	1.0
Late Latent Syphilis	97	2.0	88	1.8	81	1.6	72	1.5	100	2.0
Other Syphilis[I]	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0
Congenital Syphilis[II]	1	1.4	2	2.8	2	2.8	0	0.0	0	0.0
Chancroid	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0

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

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

[I]Includes 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, 2008

	Chlamydia						
	Males		Females		Total[I]		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence [II]							
Minneapolis	1,030	25%	1,978	19%	3,008	21%	*786*
St. Paul	575	14%	1,413	14%	1,988	14%	*692*
Suburban[III]	1,298	32%	3,251	32%	4,549	32%	*231*
Greater Minnesota	1,011	25%	3,254	32%	4,265	30%	*187*
Age							
< 15 yrs	18	0%	134	1%	152	1%	*14*
15-19 yrs	780	19%	3,578	35%	4,358	30%	*1,164*
20-24 yrs	1,545	38%	3,985	39%	5,530	39%	*1,715*
25-29 yrs	890	22%	1,542	15%	2,432	17%	*760*
30-34 yrs	376	9%	582	6%	958	7%	*271*
35-39 yrs	237	6%	258	3%	495	3%	*120*
40-44 yrs	97	2%	95	1%	192	1%	*47*
45-49 yrs	82	2%	44	0%	126	1%	*35*
50-54 yrs	33	1%	26	0%	59	0%	*20*
55+ yrs	27	1%	21	0%	48	0%	*5*
Race /Ethnicity							
White	1,392	34%	4,454	43%	5,846	41%	*135*
Black	1,612	39%	2,672	26%	4,284	30%	*2,111*
American Indian	71	2%	394	4%	465	3%	*574*
Asian/PI	136	3%	467	5%	603	4%	*358*
Other[IV, V]	144	4%	468	5%	612	4%	*x*
Unknown[V]	730	18%	1,810	18%	2,540	18%	*x*
Hispanic[VI]	297	7%	757	7%	1,054	7%	*735*
Total	4,085	100%	10,265	100%	14,350	100%	*292*

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 540 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, 2008

	Gonorrhea						
	Males		Females		Total[I]		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence[II]							
Minneapolis	591	43%	474	29%	1,067	35%	*279*
St. Paul	209	15%	278	17%	487	16%	*170*
Suburban[III]	311	23%	422	25%	733	24%	*37*
Greater Minnesota	219	16%	422	25%	641	21%	*28*
Age							
< 15 yrs	3	0%	21	1%	24	1%	*2*
15-19 yrs	234	17%	566	34%	800	26%	*214*
20-24 yrs	404	29%	584	35%	988	33%	*306*
25-29 yrs	277	20%	251	15%	528	17%	*165*
30-34 yrs	166	12%	123	7%	289	10%	*82*
35-39 yrs	121	9%	52	3%	174	6%	*42*
40-44 yrs	79	6%	23	1%	102	3%	*25*
45-49 yrs	64	5%	16	1%	81	3%	*22*
50-54 yrs	16	1%	15	1%	31	1%	*10*
55+ yrs	15	1%	4	0%	19	1%	*2*
Race /Ethnicity							
White	285	21%	566	34%	852	28%	*20*
Black	839	61%	715	43%	1,554	51%	*766*
American Indian	18	1%	46	3%	64	2%	*79*
Asian/PI	23	2%	27	2%	50	2%	*30*
Other[IV,V]	51	4%	81	5%	133	4%	*x*
Unknown[V]	163	12%	220	13%	383	13%	*x*
Hispanic[VI]	58	4%	49	3%	108	4%	*75*
Total	1,379	100%	1,655	100%	3,036	100%	*62*

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

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

[I] Total includes 2 cases of gonorrhea diagnosed in transgendered persons.

[II] Residence missing for 108 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, 2008

	Primary & Secondary Syphilis						
	Males		Females		Total		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence [I]							
Minneapolis	48	43%	3	60%	51	44%	*13.3*
St. Paul	15	14%	0	0%	15	13%	*5.2*
Suburban[II]	34	31%	2	40%	36	31%	*1.8*
Greater Minnesota	13	12%	0	0%	13	11%	*0.6*
Age							
< 15 yrs	0	0%	0	0%	0	0%	*0.0*
15-19 yrs	3	3%	0	0%	3	3%	*0.8*
20-24 yrs	22	20%	2	40%	24	21%	*7.4*
25-29 yrs	15	14%	0	0%	15	13%	*4.7*
30-34 yrs	19	17%	2	40%	21	18%	*5.9*
35-39 yrs	11	10%	1	20%	12	10%	*2.9*
40-44 yrs	13	12%	0	0%	13	11%	*3.2*
45-49 yrs	19	17%	0	0%	19	16%	*5.2*
50-54 yrs	6	5%	0	0%	6	5%	*2.0*
55+ yrs	3	3%	0	0%	3	3%	*0.3*
Race /Ethnicity							
White	87	78%	2	40%	89	77%	*2.1*
Black	16	14%	3	60%	19	16%	*9.4*
American Indian	0	0%	0	0%	0	0%	*0.0*
Asian/PI	1	1%	0	0%	1	1%	*0.6*
Other[III, IV]	5	5%	0	0%	5	4%	*x*
Unknown[IV]	2	2%	0	0%	2	2%	*x*
Hispanic[V]	3	3%	0	0%	3	3%	*2.1*
Total	111	100%	5	100%	116	100%	*2.4*

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 Rates[I] (per 100,000 persons) of Chlamydia and Gonorrhea by County of Residence -- Minnesota, 2008

	Chlamydia		Gonorrhea			Chlamydia		Gonorrhea	
County	Cases	Rate	Cases	Rate	County	Cases	Rate	Cases	Rate
Aitkin	9	59	3	-	Marshall	11	108	0	-
Anoka	747	251	96	32	Martin	12	55	1	-
Becker	46	153	3	-	Meeker	20	88	4	-
Beltrami	151	381	18	45	Mille Lacs	39	175	2	-
Benton	40	117	8	23	Morrison	31	98	3	-
Big Stone	5	86	2	-	Mower	126	326	17	44
Blue Earth	212	379	21	38	Murray	8	87	1	-
Brown	35	130	1	-	Nicollet	35	118	10	34
Carlton	64	202	7	22	Nobles	64	307	3	-
Carver	96	137	9	13	Norman	6	81	0	-
Cass	55	203	7	26	Olmsted	349	281	116	93
Chippewa	21	160	4	-	Otter Tail	45	79	0	-
Chisago	80	195	8	19	Pennington	13	96	1	-
Clay	120	234	8	16	Pine	34	128	2	-
Clearwater	13	154	0	-	Pipestone	4	-	0	-
Cook	4	-	1	-	Polk	44	140	3	-
Cottonwood	6	49	2	-	Pope	3	-	1	-
Crow Wing	89	162	8	15	Ramsey	2393	468	556	109
Dakota	779	219	109	31	Red Lake	3	-	0	-
Dodge	29	164	3	-	Redwood	13	77	1	-
Douglas	27	82	5	15	Renville	23	134	4	-
Faribault	18	111	2	-	Rice	137	242	9	16
Fillmore	19	90	5	24	Rock	3	-	0	-
Freeborn	53	163	2	-	Roseau	19	116	3	-
Goodhue	66	150	11	25	St. Louis	533	266	97	48
Grant	3	-	0	-	Scott	204	228	22	25
Hennepin	5002	448	1448	130	Sherburne	114	177	11	17
Houston	35	178	4	-	Sibley	12	78	1	-
Hubbard	16	87	0	-	Stearns	402	302	99	74
Isanti	43	137	6	19	Steele	75	223	25	74
Itasca	72	164	11	25	Stevens	7	70	0	-
Jackson	12	106	1	-	Swift	27	226	4	-
Kanabec	26	173	0	-	Todd	15	61	3	-
Kandiyohi	104	252	16	39	Traverse	2	-	0	-
Kittson	2	-	0	-	Wabasha	40	185	1	-
Koochiching	27	188	0	-	Wadena	13	95	0	-
Lac qui Parle	3	-	1	-	Waseca	34	174	5	26
Lake	6	54	3	-	Washington	324	161	47	23
Lake of the Woods	0	-	0	-	Watonwan	17	143	0	-
Le Sueur	31	122	1	-	Wilkin	5	70	0	-
Lincoln	3	-	0	-	Winona	81	162	3	-
Lyon	53	208	10	39	Wright	170	189	24	27
McLeod	54	155	4	-	Yellow Medicine	10	90	1	-
Mahnomen	14	270	0	-					

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

County data missing for 540 chlamydia cases and 108 gonorrhea cases.

[I] Rates not calculated for counties with fewer than 5 cases.

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