



2012 Minnesota Sexually Transmitted Disease Statistics

Minnesota Department of Health, STD and HIV Section

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Overall Summary

The 2012 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 nearly 70% of all notifiable diseases reported to the Minnesota Department of Health (MDH). In 2012 the number of reported bacterial STDs increased to 21,465 cases, representing an overall increase of 10% from the previous year. The change in incidence rates varied by disease, with chlamydia increasing by 7%, gonorrhea increasing by 35%, and primary/secondary syphilis decreasing by 15%.

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, 2008-2012

Table 2a. Chlamydia: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2012

Table 2b. Gonorrhea: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2012

Table 2c. Primary/Secondary Syphilis: Number of Cases and Rates (per 100,000 persons) by Residence, Age, Race/Ethnicity and Gender— Minnesota, 2012

Table 3. Number of Chlamydia and Gonorrhea Cases and Rates (per 100,000 persons) by County— Minnesota, 2012

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, and any untreated chlamydia or gonorrhea 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. Sociodemographic and behavioral data for each case are also submitted. As of 2008, the MDH ceased routine susceptibility testing for GISP isolates, but still collaborates with the CDC to perform susceptibility testing.

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 were excluded from the STD surveillance database prior to 2012. 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. Rates for 2012 were calculated using population counts from the 2010 Census, the most recent year for which counts by race, age, gender, and residence were available at the time of calculation and preparation. This 2012 data release includes rates calculated using population estimates for the calendar years between the 2000 and 2010 U.S. Censuses.

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 almost tripled to 340 per 100,000 in 2012. Over these years, increases were seen across all gender, age and geographical groups. The rates have almost quadrupled among men (54 to 206 per 100,000) and more than doubled among females (175 to 470 per 100,000). Among 30-39 year-olds, the incidence rate is nearly five times higher in 2012 compared to 1996. Rates doubled among American Indians, Blacks, and Hispanics and almost tripled among Whites and 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 2012, the chlamydia rate increased by 7% overall and remained highest among women (470 per 100,000), Blacks (1,619 per 100,000), and 20-24 year-olds (2,015 per 100,000). The rates increased by 7% among males and 6% among females. Adolescents (15-19 year-olds) and young adults (20-24 year-olds) have the highest rates and comprise the majority of cases, rates among males increased the most among those over 50+ years (29%), and rates among females increased the most among those 10-14 years (24%). Across geographic areas, the City of Minneapolis had the highest incidence rate (927 per 100,000). However, Greater Minnesota experienced the greatest increase in chlamydia rates between 2011 and 2012 (16%), followed by Minneapolis (9%), St. Paul (5%), and the Suburban area (seven-county metro excluding the cities of Minneapolis and St. Paul) experienced a decrease of 8%. Racial disparities in chlamydia continue to persist in Minnesota with the incidence rate among Blacks being 11 times that among Whites. Other racial/ethnic groups are disproportionately affected by

chlamydia; incidence rates among American Indians, Asian/Pacific Islanders and Hispanics were 4.9, 1.9, and 2.5 times higher than the rate among Whites, respectively.

Gonorrhea

In 2012, Minnesota experienced another increase (35%) in the rate of reported gonorrhea, after rates increased in 2011 for the first time since 2007. From 2002 to 2012, the incidence of gonorrhea in Minnesota decreased from 61 to 58 per 100,000 persons (5%). However, as with chlamydia, the incidence of infection was higher among some segments of the population compared to others. Rates during the past decade have decreased by 4% among males and 6% among females. The rates also decreased among all racial/ethnic groups, with the largest drops among Hispanics and Blacks (56% and 35%, respectively). However, during this period Blacks continued to have gonorrhea incidence rates far higher than other race groups.

In 2012 the incidence rate of gonorrhea increased by 35% from 43 to 58 per 100,000 persons. As with chlamydia, gonorrhea rates were highest among females (63 per 100,000), Blacks (488 per 100,000), and 20-24 year-olds (290 per 100,000). Adolescents and young adults continue to account for a disproportionate amount (65%) of all gonorrhea cases. The Cities of Minneapolis and Saint Paul accounted for the highest rates of infection (280 and 183 cases per 100,000 persons, respectively). The greatest increase from 2011 to 2012 (39%) was seen in St. Paul, whereas, gonorrhea rates in the Suburban area (seven-county metro excluding the cities of Minneapolis and St. Paul) increased 36%, Minneapolis increased by 32%, and Greater Minnesota increased by 27% during this same time. Compared to chlamydia, greater racial disparities in gonorrhea infections continue to persist in Minnesota with an incidence rate among Blacks being 26 times that among Whites. These racial disparities are also evident among American Indians and Hispanics, whose rates are 8.0 and 1.8 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. Additionally, the CDC changed the treatment guidelines for gonococcal infections in August of 2012. CDC no longer recommends cefixime at any dose as a first-line regimen for treatment of gonococcal infections. If cefixime is used as an alternative agent, then the patient should return in one week for a test-of-cure at the site of infection.

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 214 in 2012, with MSM accounting for 81% of all cases among males in 2012. The disparity in early syphilis rates between males and females has remained large and reflects the greater burden within the MSM community.

In 2012, the overall incidence rate of primary/secondary syphilis decreased from 2.6 to 2.2 cases per 100,000 persons. The number of cases among males decreased from 134 in 2011 to 111 in 2012 while among females, the number increased from 5 to 7. Decreases in cases were observed across all geographic areas except St. Paul, which increased from 14 in 2011 to 19 in 2012; however the City of Minneapolis remains to account for the majority of cases (48%). The incidence of primary/secondary syphilis infection decreased in every age group, except among persons 40-44 years of age and among persons 15-19 years of age. Whites comprised the majority (48%) of cases in 2012, while American Indians saw an increase of primary/secondary syphilis of 293% from 2011 to 2012. Also, Blacks comprised 35% of all primary/secondary syphilis cases in 2012 and have a rate of primary/secondary syphilis that is almost 12 times higher than that among Whites.

The number of early syphilis cases decreased in 2012 (214 versus 260 in 2011). The number of cases among women increased from 13 cases in 2011 to 18 cases in 2012. Early syphilis cases among men decreased from 247 to 196 (21%). Of all early syphilis cases reported in 2012, 92% were among males and 81% of these were MSM. Of the MSM early syphilis cases 59% were co-infected with HIV.

Chancroid

Chancroid remains extremely rare in Minnesota. The last case reported in Minnesota was in 1999.

Summary Points

- Over the past decade (2002-2012), Minnesota's chlamydia rate showed an overall increase of 68 % while the rate of gonorrhea has fluctuated but has overall shown a decrease of 5%. Rates of primary/secondary syphilis have increased 83%.
- Minnesota has seen a resurgence in syphilis since 2002, with men who have sex with men being especially impacted. The co-infection rate with HIV continues to rise.
- Racial disparities in STDs continue to persist in Minnesota with communities of color having the highest rates.
- Between 2011 and 2012, the chlamydia incidence rate increased by 7%, while the gonorrhea rate increased by 35%. Cases of primary/secondary syphilis decreased by 15%. The greatest growth was seen among late latent syphilis cases, which increased by 13%.
- In 2012, incidence rates of chlamydia increased by 7% among males and 6% among females; gonorrhea increased by 39% among males and 31% among females.
- STD rates continued to be highest in the City of Minneapolis. However, the Twin Cities suburbs and Greater Minnesota accounted for a large percentage of STD cases.
- Adolescents and young adults (ages 15-24) accounted for 69% of chlamydia and 65% of gonorrhea cases reported in 2012.
- In 2012, men who have sex with men account for 81% of all male early syphilis cases, and rates of primary/secondary syphilis increased 293% among American Indians.

**Table 1. Number of Cases and Rates (per 100,000 persons) of
Chlamydia, Gonorrhea, Syphilis, and Chancroid -- Minnesota, 2008 - 2012**

Disease	2008		2009		2010		2011		2012	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chlamydia	14,414	275	14,369	272	15,509	292	16,898	319	18,048	340
Gonorrhea	3,054	58	2,328	44	2,149	41	2,283	43	3,082	58
All Stages of Syphilis	263	5.0	215	4.1	351	6.6	366	6.9	335	6.3
Primary/Secondary Syphilis	116	2.2	71	1.3	150	2.8	139	2.6	118	2.2
Early Latent Syphilis	47	0.9	46	0.9	74	1.4	121	2.3	96	1.8
Late Latent Syphilis	100	1.9	97	1.8	126	2.4	106	2.0	120	2.3
Other Syphilis ^I	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Congenital Syphilis ^{II}	0	0.0	1	1.4	1	1.5	0	0.0	1	1.5
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 Intercensal and U.S. 2010 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, 2012

Group	Chlamydia						
	Males		Females		Total ^{VI VII}		
	Cases	%	Cases	%	Cases	%	Rate
Residence^I							
Minneapolis	1,307	24%	2,237	18%	3,546	20%	927
St. Paul	678	12%	1,586	13%	2,265	13%	795
Suburban ^{II}	1,585	29%	3,859	31%	5,444	30%	250
Greater Minnesota	1,473	27%	4,146	33%	5,619	31%	229
Age							
< 15 yrs	23	0%	175	1%	198	1%	19
15-19 yrs	1,033	19%	4,311	34%	5,344	30%	1,453
20-24 yrs	2,086	38%	5,059	40%	7,147	40%	2,010
25-29 yrs	1,104	20%	1,765	14%	2,869	16%	770
30-34 yrs	545	10%	706	6%	1,251	7%	365
35-39 yrs	282	5%	295	2%	578	3%	176
40-44 yrs	158	3%	145	1%	303	2%	86
45-49 yrs	104	2%	54	0%	158	1%	39
50-54 yrs	58	1%	25	0%	83	0%	21
55+ yrs	36	1%	27	0%	63	0%	5
Race/Ethnicity							
White	1,950	36%	5,037	40%	6,988	39%	154
Black	1,667	31%	2,881	23%	4,548	25%	1,657
American Indian	96	2%	405	3%	501	3%	822
Asian/PI	163	3%	464	4%	628	3%	290
Other ^{III, IV}	153	3%	379	3%	532	3%	x
Unknown ^{IV}	1,400	26%	3,451	27%	4,851	27%	x
Hispanic ^V	278	5%	663	5%	942	5%	376
Total	5,429		12,562		18,048		340

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

U.S. Census 2010 data is used to calculate rates.

^I Residence missing for 1176 cases of chlamydia.

^{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.

^{VI} Total includes 3 cases of chlamydia diagnosed in transgendered persons(male to female)

^{VII} Includes 54 cases with missing gender

Table 2b. Number of Cases and Rates (per 100,000 persons) of Gonorrhea by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2012

	Gonorrhea						
	Males		Females		Total ^{VII}		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence^{II}							
Minneapolis	584	42%	485	29%	1,070	35%	280
St. Paul	223	16%	299	18%	523	17%	183
Suburban ^{III}	381	27%	509	30%	890	29%	41
Greater Minnesota	145	10%	302	18%	447	15%	18
Age							
< 15 yrs	4	0%	32	2%	36	1%	3
15-19 yrs	202	14%	579	35%	781	25%	212
20-24 yrs	416	30%	613	37%	1,030	33%	290
25-29 yrs	289	21%	241	14%	530	17%	142
30-34 yrs	161	12%	111	7%	272	9%	79
35-39 yrs	107	8%	57	3%	164	5%	50
40-44 yrs	81	6%	18	1%	100	3%	28
45-49 yrs	68	5%	15	1%	83	3%	20
50-54 yrs	33	2%	9	1%	42	1%	10
55+ yrs	34	2%	1	0%	35	1%	3
Race/Ethnicity							
White	455	33%	426	25%	882	29%	19
Black	612	44%	758	45%	1,370	44%	499
American Indian	23	2%	79	5%	102	3%	167
Asian/PI	29	2%	30	2%	59	2%	27
Other ^{IV,V}	6	0%	7	0%	13	0%	x
Unknown ^V	270	19%	386	23%	656	21%	x
Hispanic ^{VI}	57	4%	31	2%	88	3%	35
Total	1,395		1,676		3,082		58

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

U.S. Census 2010 data is used to calculate rates.

^I Total includes 2 cases of gonorrhea diagnosed in transgendered persons(male to female).

^{II} Residence missing for 155 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. 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.

^{VII} Includes 9 cases with missing gender

Table 2c. Number of Cases and Rates (per 100,000 persons) of Primary/Secondary Syphilis by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2012

Group	Primary & Secondary Syphilis						
	Males		Females		Total		
	Cases	%	Cases	%	Cases	%	Rate
Residence							
Minneapolis	55	50%	2	0%	57	48%	14.9
St. Paul	16	14%	3	0%	19	16%	6.7
Suburban ^I	36	32%	1	0%	37	31%	1.7
Greater Minnesota	4	4%	1	0%	5	4%	0.2
Age							
< 15 yrs	0	0%	0	0%	0	0%	0.0
15-19 yrs	4	4%	0	0%	4	3%	1.1
20-24 yrs	13	12%	3	0%	16	14%	4.5
25-29 yrs	18	16%	1	0%	19	16%	5.1
30-34 yrs	18	16%	1	0%	19	16%	5.5
35-39 yrs	14	13%	1	0%	15	13%	4.6
40-44 yrs	15	14%	0	0%	15	13%	4.3
45-49 yrs	17	15%	0	0%	17	14%	4.2
50-54 yrs	7	6%	0	0%	7	6%	1.7
55+ yrs	5	5%	1	0%	6	5%	0.5
Race/Ethnicity							
White	55	50%	2	0%	57	48%	1.3
Black	39	35%	2	0%	41	35%	14.9
American Indian	1	1%	3	0%	4	3%	6.6
Asian/PI	1	1%	0	0%	1	1%	0.5
Other ^{II, III}	7	6%	0	0%	7	6%	x
Unknown ^{III}	8	7%	0	0%	8	7%	x
Hispanic ^{IV}	10	9%	0	0%	10	8%	4.0
Total	111		7		118		2.2

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

U.S. Census 2010 data is used to calculate rates.

^I 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).

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

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

^{IV} 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, 2012

County	Chlamydia		Gonorrhea		County	Chlamydia		Gonorrhea	
	Cases	Rate	Cases	Rate		Cases	Rate	Cases	Rate
Aitkin	20	123	2	-	Marshall	10	106	0	-
Anoka	968	293	139	42	Martin	25	120	1	-
Becker	63	194	1	-	Meecker	27	116	1	-
Beltrami	209	470	31	70	Mille Lacs	70	268	3	-
Benton	98	255	10	26	Morrison	53	160	3	-
Big Stone	4	-	0	-	Mower	90	230	13	33
Blue Earth	262	409	11	17	Murray	7	80	0	-
Brown	35	135	2	-	Nicollet	75	229	1	-
Carlton	100	283	3	-	Nobles	46	215	4	-
Carver	111	122	16	18	Norman	5	73	0	-
Cass	74	259	15	53	Olmsted	460	319	28	19
Chippewa	14	113	1	-	Otter Tail	73	127	3	-
Chisago	101	187	10	19	Pennington	24	172	1	-
Clay	190	322	14	24	Pine	58	195	1	-
Clearwater	16	184	2	-	Pipestone	8	83	0	-
Cook	6	116	0	-	Polk	71	225	3	-
Cottonwood	20	171	0	-	Pope	11	100	2	-
Crow Wing	123	197	4	-	Ramsey	2696	530	582	114
Dakota	1003	252	128	32	Red Lake	12	293	2	-
Dodge	59	294	2	-	Redwood	16	100	1	-
Douglas	55	153	0	-	Renville	24	153	5	32
Faribault	20	137	1	-	Rice	120	187	4	-
Fillmore	30	144	1	-	Rock	12	124	0	-
Freeborn	101	323	3	-	Roseau	17	109	1	-
Goodhue	112	243	8	17	St. Louis	750	375	117	58
Grant	6	100	0	-	Scott	246	189	25	19
Hennepin	5829	506	1545	134	Sherburne	181	205	8	9
Houston	28	147	1	-	Sibley	20	131	2	-
Hubbard	15	73	2	-	Stearns	402	267	45	30
Isanti	67	177	4	-	Steele	84	230	3	-
Itasca	128	284	11	24	Stevens	7	72	0	-
Jackson	18	175	4	-	Swift	8	82	0	-
Kanabec	14	86	0	-	Todd	20	80	0	-
Kandiyohi	117	277	8	19	Traverse	5	141	0	-
Kittson	1	-	0	-	Wabasha	57	263	2	-
Koochiching	20	150	0	-	Wadena	8	58	0	-
Lac qui Parle	3	-	5	69	Waseca	39	204	1	-
Lake	26	239	2	-	Washington	393	165	44	18
Lake of the Woods	6	148	0	-	Watsonwan	33	294	1	-
Le Sueur	41	148	3	-	Wilkin	12	182	1	-
Lincoln	6	102	0	-	Winona	136	264	9	17
Lyon	50	193	1	-	Wright	197	158	14	11
McLeod	62	169	1	-	Yellow Medicine	15	144	5	48
Mahnomen	19	351	0	-					

Note: Data exclude cases diagnosed in federal or private correctional facilities.
County data missing for 1176 chlamydia cases and 155 gonorrhea cases.

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

U.S. Census 2010 data is used to calculate rates.