



2011 Minnesota Sexually Transmitted Disease Statistics

Minnesota Department of Health, STD and HIV Section

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

Overall Summary

The 2011 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 2011 the number of reported bacterial STDs increased to 19,547 cases, representing an overall increase of 8% from the previous year. The change in incidence rates varied by disease, with chlamydia increasing by 9%, gonorrhea increasing by 5%, and primary/secondary syphilis decreasing by 8%.

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, 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 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. Rates for 2011 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 2011 data release includes rates calculated using revised population estimates for the calendar years between the 2000 and 2010 U.S. Censuses, resulting in changes to previously published rates back to 2001.

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 319 per 100,000 in 2011. Over these years, increases were seen across all gender, age, race and geographical groups. The rates more than tripled among men (54 to 193 per 100,000) and more than doubled among females (175 to 443 per 100,000). Among 30-39 year-olds, the incidence rate more than quadrupled. 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 2011, the chlamydia rate increased by 9% overall and remained highest among women (443 per 100,000), Blacks (1,727 per 100,000), and 20-24 year-olds (1,907 per 100,000). The rates increased by 15% 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 20-24 years (29%), and among females for those 10-14 years (32%). Across geographic areas, the City of Minneapolis had the highest incidence rate (848 per 100,000). However, the Suburban area (seven-county metro excluding the cities of Minneapolis and St. Paul) experienced the greatest increase in chlamydia rates between 2010 and 2011 (15%), followed by Greater Minnesota (11%), St. Paul (8%), and finally Minneapolis (4%). The American Indian population showed the largest increase in chlamydia rates from 2010 to 2011 at 20%. From 2010 to 2011 Whites saw an increase of 14%, followed by Asian/Pacific Islanders with an increase of 11%, Hispanics with an

increase of 7%, and Blacks with an increase of 7%. 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 4.4, 1.9, and 2.7 times higher than the rate among Whites, respectively.

Gonorrhea

In 2011, Minnesota experienced an increase in the rate of reported gonorrhea, after rates declined from 2008-2010. From 2000 to 2011, the incidence of gonorrhea in Minnesota decreased from 65 to 43 per 100,000 persons (34%). 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 24% among males and 17% among females. The rates also decreased among all racial/ethnic groups, with the largest drops among Blacks and Asians (46% and 57%, respectively). However, during this period Blacks continued to have gonorrhea incidence rates far higher than other race groups.

In 2011 the incidence rate of gonorrhea increased by 5% from 41 to 43 per 100,000 persons. As with chlamydia, gonorrhea rates were highest among females (48 per 100,000), Blacks (410 per 100,000), and 20-24 year-olds (227 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 (211 and 132 cases per 100,000 persons, respectively). The greatest increase from 2010 to 2011 (35%) was seen in St. Paul whereas gonorrhea rates in Minneapolis increased by 8% 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 6.0 and 2.3 times those of Whites.

The emergence of *quinolone-resistant Neisseria Gonorrhoea* (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 260 in 2011, with MSM accounting for 88% of all cases among males in 2011. The disparity in early syphilis rates between males and females has remained large and reflects the greater burden within the MSM community.

In 2011, the overall incidence rate of primary/secondary syphilis decreased from 2.8 to 2.6 cases per 100,000 persons. The number of cases among males decreased from 141 in 2010 to 134 in 2011 while among females, the number decreased from 9 to 5. Decreases in cases were observed across all geographic areas except Greater Minnesota, which increased from 11 in 2010 to 13 in 2011; however the City of Minneapolis remains to account for the majority of cases (42%). The incidence of primary/secondary syphilis infection decreased in every age group, except among persons 25-29 years of age, and among those under the age of 15 (no cases of primary/secondary syphilis in this age group in either 2010 or 2011). Whites comprised the majority (71%) of cases in 2011, while Asian/Pacific Islanders saw an increase of primary/secondary syphilis of 440% from 2010 to 2011. Also, Blacks comprised 17% of all primary/secondary syphilis cases in 2011 and have a rate of primary/secondary syphilis that is almost 4 times higher than that among Whites.

The number of early syphilis cases increased in 2011 (260 versus 224 in 2010). The number of cases among women decreased from 14 cases in 2010 to 13 cases in 2011, with 38% of cases at the primary or secondary stage in 2011 compared to 64% in 2010. Early Syphilis cases among men increased from 207 to 247 (19%). Of all early syphilis cases reported in 2011, 95% were among males and 88% of these were MSM.

Chancroid

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

Summary Points

- Over the past decade (2001-2011), Minnesota's chlamydia rate showed an overall increase of 90 % while the rate of gonorrhea has fluctuated but has overall shown a decrease of 20%. Rates of primary/secondary syphilis have increased 271%.
- Minnesota has seen a resurgence in syphilis since 2002, with men who have sex with men being especially impacted.
- Racial disparities in STDs continue to persist in Minnesota with communities of color having the highest rates.
- Between 2010 and 2011, the chlamydia incidence rate increased by 9%, while the gonorrhea rate increased by 5%. Cases of primary/secondary syphilis decreased by 7%. The greatest growth was seen among early latent syphilis cases, which increased by 16%.
- In 2011, incidence rates of chlamydia increased by 16% among males and 6% among females; gonorrhea increased by 12% among males and 2% 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 2011.
- In 2011, men who have sex with men account for 88% of all male early syphilis cases, and rates of primary/secondary syphilis increased 440% among Asian/Pacific Islanders.

**Table 1. Number of Cases and Rates (per 100,000 persons) of
Chlamydia, Gonorrhea, Syphilis, and Chancroid -- Minnesota, 2007 - 2011**

Disease	2007		2008		2009		2010		2011	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chlamydia	13,480	259	14,414	275	14,369	272	15,509	292	16,898	319
Gonorrhea	3,479	67	3,054	58	2,328	44	2,149	41	2,283	43
All Stages of Syphilis	186	3.6	263	5.0	215	4.1	351	6.6	366	6.9
Primary/Secondary Syphilis	59	1.1	116	2.2	71	1.3	150	2.8	139	2.6
Early Latent Syphilis	55	1.1	47	0.9	46	0.9	74	1.4	121	2.3
Late Latent Syphilis	72	1.4	100	1.9	97	1.8	126	2.4	106	2.0
Other Syphilis ^I	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Congenital Syphilis ^{II}	0	0.0	0	0.0	1	1.4	1	1.5	0	0.0
Chancroid	0	0.0	1	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, 2011

Group	Chlamydia						
	Males		Females		Total ^{VI}		
	Cases	%	Cases	%	Cases	%	Rate
Residence^I							
Minneapolis	1,186	23%	2,059	17%	3,246	19%	848
St. Paul	648	13%	1,514	13%	2,165	13%	759
Suburban ^{II}	1,722	34%	4,186	35%	5,909	35%	271
Greater Minnesota	1,282	25%	3,567	30%	4,850	29%	198
Age							
< 15 yrs	21	0%	141	1%	162	1%	15
15-19 yrs	1,006	20%	4,084	35%	5,094	30%	1,385
20-24 yrs	1,992	39%	4,792	41%	6,784	40%	1,907
25-29 yrs	996	20%	1,684	14%	2,681	16%	719
30-34 yrs	489	10%	608	5%	1,097	6%	320
35-39 yrs	244	5%	281	2%	527	3%	161
40-44 yrs	143	3%	130	1%	273	2%	77
45-49 yrs	103	2%	51	0%	154	1%	38
50-54 yrs	43	1%	36	0%	79	0%	20
55+ yrs	30	1%	17	0%	47	0%	4
Race/Ethnicity							
White	2,035	40%	5,456	46%	7,494	44%	166
Black	1,765	35%	3,084	26%	4,851	29%	1,768
American Indian	84	2%	390	3%	475	3%	780
Asian/PI	169	3%	522	4%	692	4%	320
Other ^{III, IV}	206	4%	641	5%	847	5%	x
Unknown ^{IV}	808	16%	1,731	15%	2,539	15%	x
Hispanic ^V	319	6%	768	6%	1,087	6%	434
Total	5,067	100%	11,824	100%	16,898	100%	319

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 728 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 7 cases of chlamydia diagnosed in transgendered persons

Table 2b. Number of Cases and Rates (per 100,000 persons) of Gonorrhea by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2011

Group	Gonorrhea						
	Males		Females		Total ^I		
	Cases	%	Cases	%	Cases	%	Rate
Residence^{II}							
Minneapolis	410	41%	398	31%	809	35%	211
St. Paul	154	16%	222	17%	376	16%	132
Suburban ^{III}	272	28%	382	30%	655	29%	30
Greater Minnesota	109	11%	243	19%	352	15%	14
Age							
< 15 yrs	2	0%	19	1%	21	1%	2
15-19 yrs	155	16%	428	33%	585	26%	159
20-24 yrs	321	32%	486	38%	807	35%	227
25-29 yrs	206	21%	186	14%	392	17%	105
30-34 yrs	112	11%	76	6%	188	8%	55
35-39 yrs	63	6%	53	4%	116	5%	35
40-44 yrs	49	5%	22	2%	71	3%	20
45-49 yrs	50	5%	11	1%	61	3%	15
50-54 yrs	17	2%	9	1%	26	1%	6
55+ yrs	13	1%	3	0%	16	1%	1
Race/Ethnicity							
White	347	35%	378	29%	726	32%	16
Black	492	50%	659	51%	1,152	50%	420
American Indian	12	1%	51	4%	63	3%	103
Asian/PI	12	1%	21	2%	33	1%	15
Other ^{IV,V}	33	3%	64	5%	97	4%	x
Unknown ^V	92	9%	120	9%	212	9%	x
Hispanic ^{VI}	48	5%	44	3%	92	4%	37
Total	988	100%	1,293	100%	2,283	100%	43

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.

^{II} Residence missing for 91 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.

Table 2c. Number of Cases and Rates (per 100,000 persons) of Primary/Secondary Syphilis by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2011

Group	Primary & Secondary Syphilis						
	Males		Females		Total		
	Cases	%	Cases	%	Cases	%	Rate
Residence							
Minneapolis	56	42%	2	0%	58	42%	15.2
St. Paul	13	10%	1	0%	14	10%	4.9
Suburban ^I	52	39%	0	0%	52	37%	2.4
Greater Minnesota	11	8%	2	0%	13	9%	0.5
Age							
< 15 yrs	0	0%	0	0%	0	0%	0.0
15-19 yrs	3	2%	0	0%	3	2%	0.8
20-24 yrs	25	19%	1	0%	26	19%	7.3
25-29 yrs	25	19%	1	0%	26	19%	7.0
30-34 yrs	15	11%	1	0%	16	12%	4.7
35-39 yrs	19	14%	2	0%	21	15%	6.4
40-44 yrs	11	8%	0	0%	11	8%	3.1
45-49 yrs	18	13%	0	0%	18	13%	4.4
50-54 yrs	12	9%	0	0%	12	9%	3.0
55+ yrs	6	4%	0	0%	6	4%	0.5
Race/Ethnicity							
White	96	72%	2	0%	98	71%	2.2
Black	21	16%	3	0%	24	17%	8.7
American Indian	1	1%	0	0%	1	1%	1.6
Asian/PI	6	4%	0	0%	6	4%	2.8
Other ^{II, III}	9	7%	0	0%	9	6%	x
Unknown ^{III}	1	1%	0	0%	1	1%	x
Hispanic ^{IV}	10	7%	0	0%	10	7%	4.0
Total	134	100%	5	0%	139	100%	2.6

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, 2011

County	Chlamydia		Gonorrhea		County	Chlamydia		Gonorrhea	
	Cases	Rate	Cases	Rate		Cases	Rate	Cases	Rate
Aitkin	13	80	1	-	Marshall	4	-	0	-
Anoka	1024	310	93	28	Martin	32	154	2	-
Becker	42	129	5	15	Meeker	10	43	2	-
Beltrami	141	317	18	41	Mille Lacs	54	207	4	-
Benton	62	161	4	-	Morrison	43	130	4	-
Big Stone	3	-	0	-	Mower	116	296	17	43
Blue Earth	277	433	8	12	Murray	6	69	0	-
Brown	45	174	1	-	Nicollet	28	86	5	15
Carlton	88	249	2	-	Nobles	50	234	2	-
Carver	137	150	5	5	Norman	4	-	0	-
Cass	65	228	9	32	Olmsted	439	304	31	21
Chippewa	16	129	5	40	Otter Tail	73	127	4	-
Chisago	116	215	3	-	Pennington	22	158	2	-
Clay	123	208	6	10	Pine	42	141	0	-
Clearwater	7	81	1	-	Pipestone	7	73	0	-
Cook	7	135	0	-	Polk	62	196	5	16
Cottonwood	15	128	0	-	Pope	15	136	0	-
Crow Wing	110	176	16	26	Ramsey	2732	537	421	83
Dakota	1039	261	104	26	Red Lake	3	-	0	-
Dodge	55	274	3	-	Redwood	16	100	2	-
Douglas	45	125	6	17	Renville	25	159	4	-
Faribault	11	76	3	-	Rice	86	134	3	-
Fillmore	23	110	2	-	Rock	14	145	0	-
Freeborn	73	234	3	-	Roseau	14	90	0	-
Goodhue	96	208	2	-	St. Louis	627	313	49	24
Grant	4	-	0	-	Scott	258	199	18	14
Hennepin	5718	496	1172	102	Sherburne	158	179	7	8
Houston	13	68	2	-	Sibley	17	112	1	-
Hubbard	14	69	0	-	Stearns	422	280	50	33
Isanti	47	124	4	-	Steele	59	161	6	16
Itasca	78	173	7	16	Stevens	10	103	1	-
Jackson	9	88	0	-	Swift	9	92	0	-
Kanabec	23	142	1	-	Todd	26	104	0	-
Kandiyohi	90	213	4	-	Traverse	7	197	0	-
Kittson	1	-	0	-	Wabasha	41	189	0	-
Koochiching	19	143	1	-	Wadena	13	94	0	-
Lac qui Parle	5	69	0	-	Waseca	19	99	0	-
Lake	13	120	0	-	Washington	412	173	27	11
Lake of the Woods	5	124	0	-	Watonwan	24	214	0	-
Le Sueur	45	162	4	-	Wilkin	7	106	0	-
Lincoln	5	85	1	-	Winona	132	257	7	14
Lyon	63	244	3	-	Wright	177	142	12	10
McLeod	44	120	2	-	Yellow Medicine	13	125	2	-
Mahnomen	13	240	2	-					

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

County data missing for 728 chlamydia cases and 91 gonorrhea cases.

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

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