2014 Minnesota Sexually Transmitted Disease Statistics

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Overall Summary

The 2014 Sexually Transmitted Disease (STD) Statistics include a 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 2014 the number of reported bacterial STDs increased to 24,599 cases, representing an overall increase of 6% from the previous year. The change in incidence rates varied by disease, with chlamydia increasing by 6%, gonorrhea increasing by 5%, and primary/secondary syphilis increasing by 33%.

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, all gonorrhea/HIV co-infected cases, and many 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. GISP also collects sociodemographic and behavioral data for each case. As of 2008, the MDH ceased routine susceptibility testing for GISP isolates, but still collaborates with the CDC to perform susceptibility testing.

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 2014 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 2014 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 tripled to 375 per 100,000 in 2014. Over these years, increases were seen across all gender, age and geographical groups. The rates have more than quadrupled among men (54 to 244 per 100,000) and have nearly tripled among females (175 to 504 per 100,000). Among 30-39 year-olds, the incidence rate is over six times higher for 2014 compared to 1996. Rates have nearly 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, counting only lab reports as cases and the addition of an active surveillance component to the MDH's STD surveillance system.

In 2014, the chlamydia rate increased by 6% overall and remained highest among women (504 per 100,000), Blacks (1,587 per 100,000), and 20-24 year-olds (2,244 per 100,000). The rates increased by 11% among males and 4% 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 30-39 years (23%), and rates among females increased the most among those 30-39 years (17%). Across geographic areas, the City of Minneapolis had the highest incidence rate (999 per 100,000). However, the Suburban area (seven-county metro excluding the cities of Minneapolis and Saint Paul) experienced the greatest increase in chlamydia cases between 2013 and 2014 (19%); followed by Greater Minnesota (7%), and Minneapolis (7%). Saint Paul experienced a decrease of 2%. Racial disparities in chlamydia continue to persist in Minnesota with the incidence rate among Blacks being 9 times higher than the rate among Whites. Other racial/ethnic groups are disproportionately affected by chlamydia; incidence rates among American Indians, Asian/Pacific Islanders and Hispanics were 4.4, 1.8, and 2.5 times the rate among Whites, respectively.

Gonorrhea

In 2014, Minnesota experienced another increase (5%) in the rate of reported gonorrhea, after rates increased in 2011 for the first time since 2007. From 2004 to 2014, the incidence of gonorrhea in Minnesota increased from 58 to 77 per 100,000 persons (33%). 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 increased by 76% among males and have remained relatively stable among females. The rates have increased among American Indians (64%) and decreased among Blacks (3%) while rates among Whites, Hispanics, and Asian/Pacific Islanders have remained relatively stable. However, Blacks continue to have gonorrhea incidence rates far higher than other race groups.

In 2014 the incidence rate of gonorrhea increased by 5% from 73 to 77 per 100,000 persons. For the first time since 1993, males had a higher gonorrhea rate than females (86 per 100,000). As with chlamydia, gonorrhea rates were highest among Blacks (543 per 100,000) and 20-24 year-olds (362 per 100,000). Adolescents and young adults continue to account for a disproportionate amount (51%) of all gonorrhea cases. The Cities of Minneapolis and Saint Paul accounted for the highest rates of infection (377 and 238 cases per 100,000 persons, respectively). The greatest increase in cases from 2013 to 2014 (21%) was seen in Greater Minnesota, whereas, gonorrhea cases in Minneapolis increased by 5%, Saint Paul increased by 3%, and the Suburban area (seven-county metro excluding the cities of Minneapolis and Saint Paul) increased 3%, 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 18 times higher than the rate among Whites. These racial disparities are also evident among American Indians and Hispanics, whose rates are 7.1 and 2.4 times those of Whites.

The emergence of *quinolone-resistant Neisseria gonorrhoeae* (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 49 in 2004 to 416 in 2014, with MSM accounting for 76% of all cases among males in 2014. The disparity in early syphilis rates between males and females has remained large and reflects the greater burden within the MSM community; however the rates among females have continued to increase over the past two years.

In 2014, the overall incidence rate of primary/secondary syphilis increased from 3.6 to 4.8 cases per 100,000 persons. The number of cases among males increased from 178 in 2013 to 235 in 2014 while among females, the number increased from 12 to 21. Increases in cases were observed across all geographic areas; however the City of Minneapolis remains to account for the majority of cases (51%). The incidence of primary/secondary syphilis infection increased in every age group over the age of 15. Whites comprised the majority (65%) of cases in 2014, while Asian/Pacific Islanders saw an increase of primary/secondary syphilis rates of 89% from 2013 to 2014. Also, Blacks comprised compromised 26% of all primary/secondary syphilis cases in 2014 and have a rate of primary/secondary syphilis that is 7 times higher than the rate among Whites.

The number of early syphilis cases increased in 2014 (416 versus 332 in 2013). The number of cases among women increased from 30 cases in 2013 to 41 cases in 2014. Early syphilis cases among men increased from 298 to 374 (25%). Of all early syphilis cases reported in 2014, 90% were among males and 76% of these were MSM. Of the MSM, early syphilis cases 50% 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 (2004-2014), Minnesota's chlamydia rates showed an overall increase of 64% while the rate of gonorrhea has fluctuated but has shown an overall increase of 33%. Rates of primary/secondary syphilis have increased 860%. 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 remain high. Racial disparities in STDs continue to persist in Minnesota with communities of color having the highest rates.
- Between 2013 and 2014, the chlamydia incidence rate increased by 6%, while the gonorrhea rate increased by 5%. Cases of primary/secondary syphilis increased by 33%.
- In 2014, incidence rates of chlamydia increased by 11% among males and 4% among females; gonorrhea increased by 23% among males and decreased 12% 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 66% of chlamydia and 51% of gonorrhea cases reported in 2014.
- In 2014, men who have sex with men account for 76% of all male early syphilis cases, and rates of primary/secondary syphilis increased 144% among Hispanics.

Table 1. Number of Cases and Rates (per 100,000 persons) of Chlamydia, Gonorrhea, Syphilis, and Chancroid -- Minnesota, 2010 - 2014

	2010		2011		2012		2013		2014	
Disease	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chlamydia	15,509	292	16,898	319	18,048	340	18,724	353	19,897	375
Gonorrhea	2,149	41	2,283	43	3,082	58	3,872	73	4,073	77
All Stages of Syphilis	351	6.6	366	6.9	335	6.3	537	10.1	629	11.9
Primary/Secondary Syphilis	150	2.8	139	2.6	118	2.2	193	3.6	257	4.8
Early Latent Syphilis	74	1.4	121	2.3	96	1.8	139	2.6	159	3.0
Late Latent Syphilis	126	2.4	106	2.0	120	2.3	205	3.9	213	4.0
Other Syphilis[I]	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Congenital Syphilis[II]	1	1.5	0	0.0	1	1.5	0	0.0	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 Intercensal and U.S. 2010 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, 2014

	Chlamydia						
	Males		Females		Total[VI]		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence [I]							
Minneapolis	1,538	24%	2,278	17%	3,823	19%	*999*
St. Paul	742	12%	1,589	12%	2,332	12%	*818*
Suburban[II]	2,041	32%	4,308	32%	6,350	32%	*291*
Greater Minnesota	1,715	27%	4,689	35%	6,404	32%	*261*
Age							
< 15 yrs	15	0%	125	1%	140	1%	*13*
15-19 yrs	1,012	16%	4,145	31%	5,157	26%	*1,402*
20-24 yrs	2,399	37%	5,577	41%	7,980	40%	*2,244*
25-29 yrs	1,367	21%	2,103	16%	3,472	17%	*932*
30-34 yrs	750	12%	866	6%	1,617	8%	*472*
35-39 yrs	363	6%	355	3%	720	4%	*219*
40-44 yrs	214	3%	153	1%	367	2%	*104*
45-49 yrs	141	2%	70	1%	211	1%	*52*
50-54 yrs	79	1%	46	0%	125	1%	*31*
55+ yrs	71	1%	37	0%	108	1%	*8*
Race /Ethnicity							
White	2,551	40%	5,659	42%	8,216	41%	*182*
Black	1,723	27%	2,733	20%	4,458	22%	*1,625*
American Indian	93	1%	432	3%	525	3%	*862*
Asian/PI	186	3%	502	4%	688	3%	*318*
Other[III, IV]	147	2%	377	3%	524	3%	*x*
Unknown[IV]	1,711	27%	3,774	28%	5,485	28%	*x*
Hispanic[V]	339	5%	761	6%	1,100	6%	*440*
Total	6,411		13,477		19,897		*375*

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 988 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 9 cases of chlamydia diagnosed in transgendered persons(male to female)

Table 2b. Number of Cases and Rates (per 100,000 persons) of Gonorrhea by Residence, Age, Race/Ethnicity and Gender-- Minnesota, 2014

	Gonorrhea						
	Males		Females		Total[I]		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence[II]							
Minneapolis	924	41%	509	28%	1,442	35%	*377*
St. Paul	351	16%	325	18%	678	17%	*238*
Suburban[III]	605	27%	512	28%	1,117	27%	*51*
Greater Minnesota	299	13%	388	22%	687	17%	*28*
Age							
< 15 yrs	7	0%	19	1%	26	1%	*2*
15-19 yrs	270	12%	531	29%	801	20%	*218*
20-24 yrs	652	29%	634	35%	1,289	32%	*362*
25-29 yrs	473	21%	337	19%	812	20%	*218*
30-34 yrs	298	13%	142	8%	441	11%	*129*
35-39 yrs	187	8%	62	3%	252	6%	*77*
40-44 yrs	130	6%	44	2%	175	4%	*50*
45-49 yrs	121	5%	18	1%	140	3%	*34*
50-54 yrs	71	3%	12	1%	83	2%	*21*
55+ yrs	51	2%	3	0%	54	1%	*4*
Race /Ethnicity							
White	940	42%	471	26%	1,416	35%	*31*
Black	777	34%	742	41%	1,525	37%	*556*
American Indian	50	2%	96	5%	146	4%	*240*
Asian/PI	49	2%	37	2%	86	2%	*40*
Other[IV,V]	46	2%	34	2%	80	2%	*x*
Unknown[V]	398	18%	422	23%	820	20%	*x*
Hispanic[VI]	122	5%	65	4%	187	5%	*75*
Total	2,260		1,802		4,073		*77*

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

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

[I] Total includes 11 cases of gonorrhea diagnosed in transgendered persons(male to female).

[II] Residence missing for 149 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, 2014

	Primary & Secondary Syphilis						
	Males		Females		Total[v]		
Group	Cases	%	Cases	%	Cases	%	Rate
Residence							
Minneapolis	119	51%	10	0%	130	51%	*34.0*
St. Paul	32	14%	3	0%	35	14%	*12.3*
Suburban[I]	67	29%	6	0%	73	28%	*3.3*
Greater Minnesota	17	7%	2	0%	19	7%	*0.8*
Age							
< 15 yrs	0	0%	0	0%	0	0%	*0.0*
15-19 yrs	8	3%	2	10%	10	4%	*2.7*
20-24 yrs	50	21%	6	29%	53	21%	*14.9*
25-29 yrs	44	19%	6	29%	50	19%	*13.4*
30-34 yrs	29	12%	7	33%	36	14%	*10.5*
35-39 yrs	25	11%	2	10%	27	11%	*8.2*
40-44 yrs	20	9%	0	0%	20	8%	*5.7*
45-49 yrs	20	9%	1	5%	21	8%	*5.2*
50-54 yrs	19	8%	0	0%	19	7%	*4.7*
55+ yrs	20	9%	1	5%	21	8%	*1.6*
Race /Ethnicity							
White	156	66%	10	48%	166	65%	*3.7*
Black	56	24%	10	48%	67	26%	*24.4*
American Indian	1	0%	1	5%	2	1%	*3.3*
Asian/PI	15	6%	0	0%	15	6%	*6.9*
Other[II, III]	1	0%	0	0%	1	0%	*x*
Unknown[III]	6	3%	0	0%	6	2%	*x*
Hispanic[IV]	22	9%	0	0%	22	9%	*8.8*
Total	235		21		257		*4.8*

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.

[v] Total includes 2 cases of primary/secondary syphilis diagnosed in transgendered persons(male to female).

Table 3. Number of Cases and Rates[I] (per 100,000 persons) of Chlamydia and Gonorrhea by County of Residence -- Minnesota, 2014

	Chlamydia		Gonorrhea			Chlamydia		Gonorrhea	
County	Cases	Rate	Cases	Rate	County	Cases	Rate	Cases	Rate
Aitkin	20	123	5	31	Marshall	8	85	1	-
Anoka	1072	324	172	52	Martin	48	230	4	-
Becker	69	212	6	18	Meeker	39	167	2	-
Beltrami	186	419	26	59	Mille Lacs	71	272	16	61
Benton	152	395	15	39	Morrison	70	211	3	-
Big Stone	3	-	0	-	Mower	117	299	21	54
Blue Earth	308	481	21	33	Murray	12	138	0	-
Brown	41	158	1	-	Nicollet	65	199	12	37
Carlton	96	271	24	68	Nobles	50	234	5	23
Carver	146	160	14	15	Norman	2	-	3	-
Cass	92	322	15	53	Olmsted	559	388	28	19
Chippewa	25	201	3	-	Otter Tail	69	120	9	16
Chisago	118	219	14	26	Pennington	26	187	0	-
Clay	203	344	43	73	Pine	75	252	4	-
Clearwater	21	242	3	-	Pipestone	18	188	0	-
Cook	4	-	1	-	Polk	81	256	14	44
Cottonwood	23	197	4	-	Pope	15	136	1	-
Crow Wing	131	210	18	29	Ramsey	2847	560	777	153
Dakota	1138	286	168	42	Red Lake	10	245	1	-
Dodge	64	319	2	-	Redwood	23	143	2	-
Douglas	47	131	6	17	Renville	21	134	1	-
Faribault	18	124	0	-	Rice	157	245	7	11
Fillmore	40	192	2	-	Rock	11	114	0	-
Freeborn	86	275	8	26	Roseau	16	102	0	-
Goodhue	123	266	15	32	St. Louis	731	365	102	51
Grant	7	116	0	-	Scott	298	229	42	32
Hennepin	6426	558	1997	173	Sherburne	259	293	27	31
Houston	23	121	0	-	Sibley	28	184	0	-
Hubbard	44	215	4	-	Stearns	513	341	64	42
Isanti	88	233	8	21	Steele	102	279	3	-
Itasca	117	260	30	67	Stevens	9	93	2	-
Jackson	17	166	2	-	Swift	8	82	2	-
Kanabec	31	191	2	-	Todd	33	133	0	-
Kandiyohi	124	294	11	26	Traverse	7	197	0	-
Kittson	2	-	0	-	Wabasha	45	208	1	-
Koochiching	15	113	2	-	Wadena	21	152	5	36
Lac qui Parle	7	96	2	-	Waseca	61	319	4	-
Lake	18	166	0	-	Washington	574	241	63	26
Lake of the Woods	6	148	0	-	Watonwan	39	348	0	-
Le Sueur	37	134	4	-	Wilkin	8	122	9	137
Lincoln	7	119	1	-	Winona	208	404	9	17
Lyon	40	155	9	35	Wright	220	176	15	12
McLeod	69	188	2	-	Yellow Medicine	17	163	1	-
Mahnomen	14	259	8	148					

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

County data missing for 988 chlamydia cases and 151 gonorrhea cases.

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

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