Sexually Transmitted Disease (STD) Surveillance Report, 2016

Minnesota Department of Health STD Surveillance System
Introduction

- Under Minnesota law, physicians and laboratories must report all laboratory-confirmed cases of chlamydia, gonorrhea, syphilis, and chancroid to the Minnesota Department of Health (MDH) within one working day.

- MDH does not maintain statistics for other, non-reportable STDs (ex: herpes, HPV/genital warts).

- This slide set describes trends in reportable STDs in Minnesota by person, place, and time.

- Analyses exclude cases reported from federal and private prisons.
Introduction

- STD surveillance is the systematic collection of data from cases for the purpose of monitoring the frequency and distribution of STDs in a given population.

- STD surveillance data are used to detect problems, prioritize resources, develop and target interventions, and evaluate the effectiveness of interventions.
Factors that impact the completeness and accuracy of STD data include:

- Level of STD screening by healthcare providers
- Individual test-seeking behavior
- Sensitivity of diagnostic tests
- Compliance with case reporting
- Completeness of case reporting
- Timeliness of case reporting

Increases and decreases in STD rates can be due to actual changes in disease occurrence and/or changes in one or more of the above factors.
Interpreting STD Surveillance Data

- The surveillance system only includes cases with a positive laboratory test. Cases diagnosed solely on symptoms are not counted.

- Since 2012 we have included cases that had only a lab report and no corresponding case report form. This has increased the number of unknowns in some variables.

- In 2016, in order to be consistent with CDC, we categorized all White, Hispanic and Black, Hispanic cases as Hispanic. That means the race categories now reflect only White, Non-Hispanic and Black, Non-Hispanic cases.

- Surveillance data represent cases of infection, not individuals. A person with multiple infections in a given year will be counted more than once.

- Caution is warranted when interpreting changes in STD numbers that can seem disproportionately large when the number of cases is small.
National Context
Chlamydia — Rates of Reported Cases by State, United States and Outlying Areas, 2015

NOTE: The total rate of reported cases of chlamydia for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 475.3 cases per 100,000 population.
Gonorrhea — Rates of Reported Cases by State, United States and Outlying Areas, 2015

NOTE: The total rate of reported cases of gonorrhea for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 122.7 cases per 100,000 population.
Primary and Secondary Syphilis — Rates of Reported Cases by State, United States and Outlying Areas, 2015

NOTE: The total rate of primary and secondary syphilis for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 7.6 cases per 100,000 population.
Overview of STDs in Minnesota
STDs in Minnesota
Rate per 100,000 by Year of Diagnosis, 2006-2016

- Chlamydia
- Gonorrhea
- P&S* Syphilis

* P&S = Primary and Secondary
STDs in Minnesota:
Number of Cases Reported in 2016

- Total of 28,631 STD cases reported to MDH in 2016:
  - 22,675 Chlamydia cases
  - 5,104 Gonorrhea cases
  - 852 Syphilis cases (all stages)
  - 0 Chancroid cases
CHLAMYDIA
2016 Minnesota Chlamydia Rates by County

Rate per 100,000 persons

- 0 - 100
- 101 - 150
- 151 - 300
- > 300

City of Minneapolis: 1196
City of St. Paul: 912
Suburban#: 335
Greater Minnesota: 298

(890 cases missing residence information)

# 7-county metro area, excluding the cities of Minneapolis and St. Paul
Chlamydia Infections by Residence at Diagnosis Minnesota, 2016

Total Number of Cases = 22,675

- Minneapolis: 20%
- St. Paul: 12%
- Suburban: 32%
- Greater MN: 32%
- Unknown: 4%

Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (excluding Minneapolis), Ramsey (excluding St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties outside the seven-county metro area.
Chlamydia Rates by Age
Minnesota, 2006-2016
Age-Specific Chlamydia Rates by Gender
Minnesota, 2016

Rate per 100,000 persons

Age in Years

Males
Females
Persons of Hispanic ethnicity can be of any race.

Chlamydia Rates by Race/Ethnicity
Minnesota, 2006-2016

2016 rates compared with Whites:
- Black, Non-Hispanic = 9.5x higher
- American Indian = 5x higher
- Asian/PI = 2x higher
- Hispanic* = 3x higher

* Persons of Hispanic ethnicity can be of any race
Chlamydia Rates by Race/Ethnicity
Minnesota, 2006-2016

* Persons of Hispanic ethnicity can be of any race
GONORRHEA
2016 Minnesota Gonorrhea Rates by County

City of Minneapolis 448
City of St. Paul 271
Suburban# 69
Greater Minnesota 39

(146 cases missing residence information)

# 7-county metro area, excluding the cities of Minneapolis and St. Paul
Gonorrhea Infections in Minnesota by Residence at Diagnosis, 2016

Total Number of Cases = 5,104

- Minneapolis: 33%
- St. Paul: 15%
- Suburban: 30%
- Greater MN: 19%
- Unknown: 3%

Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (excluding Minneapolis), Ramsey (excluding St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties outside the seven-county metro area.
Gonorrhea Rates by Gender
Minnesota, 2006-2016

Rate per 100,000 persons

Year

Males
Females
Overall
Gonorrhea Rates by Age
Minnesota, 2006-2016
Age-Specific Gonorrhea Rates by Gender
Minnesota, 2016

<table>
<thead>
<tr>
<th>AGE IN YEARS</th>
<th>RATE PER 100,000 PERSONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-14</td>
<td>17</td>
</tr>
<tr>
<td>15-19</td>
<td>348</td>
</tr>
<tr>
<td>20-24</td>
<td>394</td>
</tr>
<tr>
<td>25-29</td>
<td>368</td>
</tr>
<tr>
<td>30-39</td>
<td>235</td>
</tr>
<tr>
<td>40-44</td>
<td>90</td>
</tr>
<tr>
<td>45-49</td>
<td>53</td>
</tr>
<tr>
<td>50+</td>
<td>22</td>
</tr>
</tbody>
</table>

**Males**

**Females**
Gonorrhea Rates by Race/Ethnicity
Minnesota, 2006-2016

2016 rates compared with Whites:
Black, Non-Hispanic = 18x higher
American Indian = 9x higher
Asian/PI = 2x higher
Hispanic* = 3x higher

* Persons of Hispanic ethnicity can be of any race
Gonorrhea Rates by Race/Ethnicity
Minnesota, 2006-2016

* Persons of Hispanic ethnicity can be of any race.
SYPHILIS
Syphilis Rates by Stage of Diagnosis
Minnesota, 2006-2016

- All Stages
- P&S* = Primary and Secondary
- Early Latent

Rate per 100,000 persons

* P&S = Primary and Secondary
2016 Minnesota Primary & Secondary Syphilis Rates by County

Rate per 100,000 persons

- 0
- 0.8 – 3.0
- 3.1 – 9.2
- > 9.2

City of Minneapolis 33.7 (129 cases)
City of St. Paul 8.1 (23 cases)
Suburban# 3.1 (68 cases)
Greater Minnesota 1.1 (26 cases)

# 7-county metro area, excluding the cities of Minneapolis and St. Paul
Primary & Secondary Syphilis Infections in Minnesota by Residence at Diagnosis, 2016

Total Number of Cases = 306

- Minneapolis: 42%
- Suburban: 31%
- St. Paul: 9%
- Greater MN: 18%
- Unknown: 0%

Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (excluding Minneapolis), Ramsey (excluding St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties outside the seven-county metro area.
Primary & Secondary Syphilis Rates by Gender
Minnesota, 2006-2016
Primary & Secondary Syphilis Rates by Age
Minnesota, 2006-2016
Age-Specific Primary & Secondary Syphilis Rates by Gender, Minnesota, 2016
Primary & Secondary Syphilis Cases by Race
Minnesota, 2016

Total Number of Cases = 306

*Includes persons reported with more than one race
Primary & Secondary Syphilis Rates by Race/Ethnicity
Minnesota, 2006-2016

* Persons of Hispanic ethnicity can be of any race.
CHLAMYDIA AND GONORRHEA AMONG ADOLESCENTS & YOUNG ADULTS

Minnesota Department of Health STD Surveillance System
Chlamydia Disproportionately Impacts Youth

**MN Population in 2010**
(n = 5,303,925)
- <15 yrs: 20%
- 15-24 yrs: 14%
- 25-34 yrs: 13%
- 35+ yrs: 53%

**Chlamydia Cases in 2016**
(n = 22,675)
- <15 yrs: 1%
- 15-24 yrs: 64%
- 25-29 yrs: 18%
- 30-44 yrs: 15%
- 45+ yrs: 2%
Gonorrhea Disproportionately Impacts Youth

MN Population in 2010
(n = 5,303,925)

- 25-34 yrs: 13%
- 35+ yrs: 53%
- 15-24 yrs: 14%
- <15 yrs: 20%

Gonorrhea Cases in 2016
(n = 5,104)

- 25-29 yrs: 22%
- 30-44 yrs: 24%
- 45+ yrs: 7%
- <15 yrs: 1%
### Characteristics of Adolescents & Young Adults†
Diagnosed With Chlamydia or Gonorrhea in 2016

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4,984</td>
<td>29%</td>
</tr>
<tr>
<td>Female</td>
<td>11,832</td>
<td>71%</td>
</tr>
<tr>
<td>Transgender</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>White, Non-Hispanic</td>
<td>6,072</td>
<td>36%</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>4,555</td>
<td>27%</td>
</tr>
<tr>
<td>Am Indian</td>
<td>466</td>
<td>3%</td>
</tr>
<tr>
<td>Asian/PI</td>
<td>481</td>
<td>3%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>946</td>
<td>6%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>4,309</td>
<td>26%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>16,829</td>
<td></td>
</tr>
</tbody>
</table>

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
### Characteristics of Adolescents & Young Adults†
**Diagnosed With Chlamydia or Gonorrhea in 2016**

<table>
<thead>
<tr>
<th>Location</th>
<th>Cases</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minneapolis</td>
<td>3,261</td>
<td>19%</td>
</tr>
<tr>
<td>St. Paul</td>
<td>2,060</td>
<td>12%</td>
</tr>
<tr>
<td>Suburban MN</td>
<td>5,312</td>
<td>32%</td>
</tr>
<tr>
<td>Greater MN</td>
<td>5,519</td>
<td>33%</td>
</tr>
<tr>
<td>Unknown</td>
<td>687</td>
<td>4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>16,829</strong></td>
<td></td>
</tr>
</tbody>
</table>

Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (excluding Minneapolis), Ramsey (excluding St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties outside the seven-county metro area.

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Chlamydia Rates Among Adolescents & Young Adults† by Gender in Minnesota, 2006-2016

Rate=Cases per 100,000 persons based on 2010 U.S. Census counts.

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Chlamydia Cases Among Adolescents and Young Adults by Gender and Race, Minnesota, 2016

Males (n = 3,925)

- White: 34%
- Black: 30%
- Hispanic: 5%
- Asian/PI: 3%
- Amer Indian: 2%
- Unknown: 26%

Females (n = 10,519)

- White: 40%
- Black: 22%
- Hispanic: 6%
- Asian/PI: 3%
- Amer Indian: 2%
- Unknown: 27%

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Chlamydia Rate Among Adolescents and Young Adults† by Race, Minnesota, 2016

Rate=Cases per 100,000 persons based on 2010 U.S. Census counts.
† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Gonorrhea Rates Among Adolescents & Young Adults† by Gender in Minnesota, 2006-2016

Rate=Cases per 100,000 persons based on 2010 U.S. Census counts.

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Gonorrhea Cases Among Adolescents and Young Adults† by Gender and Race, 2016

Males (n = 1059)
- White, Non-Hispanic: 25%
- Black, Non-Hispanic: 45%
- Amer Indian: 4%
- Hispanic: 6%
- Asian/PI: 3%
- Other: 1%
- Unknown: 16%

Females (n = 1313)
- White, Non-Hispanic: 45%
- Black, Non-Hispanic: 45%
- Amer Indian: 5%
- Asian/PI: 2%
- Other: 1%
- Unknown: 27%
- Hispanic: 3%

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Gonorrhea Rate Among Adolescents and Young Adults†
by Race, Minnesota, 2016

<table>
<thead>
<tr>
<th>Race</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHITE, NON-HISPANIC</td>
<td>90</td>
<td>96</td>
</tr>
<tr>
<td>BLACK, NON-HISPANIC</td>
<td>1,860</td>
<td>2,199</td>
</tr>
<tr>
<td>AMERICAN INDIAN</td>
<td>811</td>
<td>987</td>
</tr>
<tr>
<td>ASIAN/PI</td>
<td>148</td>
<td>145</td>
</tr>
<tr>
<td>HISPANIC</td>
<td>288</td>
<td>263</td>
</tr>
</tbody>
</table>

Rate=Cases per 100,000 persons based on 2010 U.S. Census counts.
† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Summary of Chlamydia and Gonorrhea Among Adolescents and Young Adults†, Minnesota, 2016

- Adolescents and young adults accounted for 64% of chlamydia and 46% of gonorrhea cases diagnosed in Minnesota.
- 70% of chlamydia or gonorrhea cases diagnosed among adolescents and young adults were females.
- 25% of chlamydia and gonorrhea cases diagnosed among adolescents and young adults are missing race/ethnicity.
- 31% of gonorrhea or chlamydia cases were in the Cities of Minneapolis and Saint Paul.

† Adolescents defined as 15-19 year-olds; Young Adults defined as 20-24 year-olds.
Topic of Interest: Early Syphilis Among Men Who Have Sex With Men in Minnesota

Minnesota Department of Health STD Surveillance System
Number of Early Syphilis† Cases by Gender
Minnesota, 2006-2016

Figure does not include cases diagnosed in transgender persons (1 each in 2005, 2007, 2009, 4 in 2013, 1 in 2014, 2 in 2015).
† Early Syphilis includes primary, secondary, and early latent stages of syphilis.

MSM=Men who have sex with men.
Early Syphilis† Cases by Stage at Diagnosis
Minnesota, 2006-2016

† Early Syphilis includes primary, secondary, and early latent stages of syphilis.
## Early Syphilis† by Gender and Sexual Behavior Minnesota, 2006-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Early Syphilis Cases</th>
<th>Male Cases (%)</th>
<th>MSM Cases (% of males)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>104</td>
<td>90 (88)</td>
<td>80 (89)</td>
</tr>
<tr>
<td>2007</td>
<td>114</td>
<td>111 (97)</td>
<td>103 (93)</td>
</tr>
<tr>
<td>2008</td>
<td>163</td>
<td>158 (97)</td>
<td>140 (89)</td>
</tr>
<tr>
<td>2009</td>
<td>117</td>
<td>106 (91)</td>
<td>96 (91)</td>
</tr>
<tr>
<td>2010</td>
<td>221</td>
<td>207 (94)</td>
<td>185 (89)</td>
</tr>
<tr>
<td>2011</td>
<td>260</td>
<td>246 (95)</td>
<td>218 (89)</td>
</tr>
<tr>
<td>2012</td>
<td>214</td>
<td>196 (92)</td>
<td>158 (81)</td>
</tr>
<tr>
<td>2013</td>
<td>332</td>
<td>298 (90)</td>
<td>261 (88)</td>
</tr>
<tr>
<td>2014</td>
<td>416</td>
<td>374 (90)</td>
<td>283 (76)</td>
</tr>
<tr>
<td>2015</td>
<td>431</td>
<td>341 (79)</td>
<td>222 (65)</td>
</tr>
<tr>
<td>2016</td>
<td>557</td>
<td>468 (84)</td>
<td>359 (77)</td>
</tr>
</tbody>
</table>

MSM=Men who have sex with men

† Early Syphilis includes primary, secondary, and early latent stages of syphilis.
Early Syphilis† Cases Among MSM by Age
Minnesota, 2016 (n=359)

Mean Age = 36 years
Range: 16 to 72 years

MSM=Men who have sex with men
† Early Syphilis includes primary, secondary, and early latent stages of syphilis.
Early Syphilis† (ES) Cases Co-infected with HIV, 2006-2016

MSM=Men who have sex with men

† Early Syphilis includes primary, secondary, and early latent stages of syphilis.
Characteristics of Early Syphilis† Cases Among MSM, Minnesota, 2016

- Gay and bisexual men account for 77% of cases among men.

- 62% of cases among MSM are White, but a disproportionate number of cases (17%) are African American.

- 44% of cases are also infected with HIV.

MSM=Men who have sex with men
† Early Syphilis includes primary, secondary, and early latent stages of syphilis.
Topic of Interest: Syphilis Among Females and Congenital Syphilis in Minnesota

Minnesota Department of Health STD Surveillance System
Female Early Syphilis cases

NUMBER OF FEMALE EARLY SYPHILIS CASES

Year


Number of Cases

109 83 74 52 22 17 7 10 13 22 12 9 6 8 14 2 5 9 14 13 18 30 41 88 87

0 2 5 9 14 13 18 30 41 88 87

109 83 74 52 22 17 7 10 13 22 12 9 6 8 14 2 5 9 14 13 18 30 41 88 87
Early Syphilis Infections in Women in Minnesota by Residence at Diagnosis, 2016

Total Number of Cases = 87

- Minneapolis: 38%
- St. Paul: 19%
- Suburban: 25%
- Greater MN: 18%
- Unknown: 0%

Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (excluding Minneapolis), Ramsey (excluding St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties outside the seven-county metro area.
Early Syphilis Cases in Females by Race
Minnesota, 2016

Total Number of Cases = 87

- Black, Non-Hispanic: 39%
- White, Non-Hispanic: 33%
- American Indian: 15%
- Hispanic: 7%
- Asian/PI: 4%
- Unknown: 2%

*Includes persons reported with more than one race
What’s Being Done in Minnesota?

- The MDH Partner Services Program continues to follow up on early syphilis cases and their sex partners and all pregnant syphilis cases.

- All HIV/Syphilis co-infected cases are assigned to Partner Services for follow-up.

- Physicians are encouraged to screen men who have sex with men at least annually and to ask about sex partners.

- All pregnant females should be screened for syphilis at first prenatal visit, 28 weeks’ gestation (at minimum 28-36 weeks), and at delivery.
Summary of STD Trends in Minnesota

- From 2006-2016, the chlamydia rate increased by 71%. The rate of gonorrhea increased by 25%. Rates of reported syphilis increased in 2016 compared to 2015 by 30%.

- Minnesota has seen a resurgence of syphilis over the past decade, with men who have sex with men and those co-infected with HIV being especially impacted. However, the number of females is near the record high for the last decade.

- Persons of color continue to be disproportionately affected by STDs.

- STD rates are highest in the cities of Minneapolis and Saint Paul. However, chlamydia and gonorrhea cases in the Twin Cities suburbs and Greater Minnesota account for 61% of the reported cases in 2016.

- Between 2015 and 2016, early syphilis cases increased by 29%. Men who have sex with men comprised 77% of all male cases in 2016; cases among women are continuing to remain high.
Future Updates to STD Reporting and Current Follow-Up

- New case report form to accommodate changes in treatment guidelines, requesting HIV testing status, and PreP usage.
- Case report form is able to be filled out on a computer and printed to be mailed or faxed in.
- All cases co-infected with HIV (diagnosed in the last year)/Gonorrhea, HIV/Syphilis, and Early Syphilis will be continue to be assigned to MDH Partner Services for follow-up.
- All Gonorrhea cases continue to have the potential for being contacted by MDH for additional follow-up.