

2017 Sexually Transmitted Diseases Summary

Columbia/Boone County Department of
Public Health and Human Services

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The 2017 Sexually Transmitted Disease Summary (STD) for Boone County, Missouri includes surveillance statistics for three reportable sexually transmitted diseases: chlamydia, gonorrhea and syphilis.

In 2017, there were 1,654 sexually transmitted diseases (chlamydia, gonorrhea, and syphilis) reported on Boone County residents. Chlamydia was the most frequently reported STD with 1,328 cases (Figure 1). The number of gonorrhea cases reported during 2017 increased from 191 reported in 2016 to 310. The 2017 gonorrhea rate, 175.5 cases per 100,000, increased by 60.7% from 2016 (Figure 2). Both Missouri and Boone County saw increases in all three STDs (gonorrhea, chlamydia, and syphilis) in 2017. Boone County’s combined STD rate is the seventh highest in Missouri, with the chlamydia rate ranking as the fourth highest.

Figure 1:

Reported STDs by Count and Incidence Rate per 100,000 Population Boone County and Missouri, 2017					
Condition	Boone County Case Count	Boone County Rate Per 100,000	Rank Among Missouri Counties**	Missouri Case Count	Missouri Rate*
Chlamydia	1328	752.0	4 th	32,683	536.4
Gonorrhea	310	175.5	15 th	13,086	214.8
Syphilis (all stages)	16	9.1	----	1,340	22.0
Total	1,654	936.6	7 th	47,109	773.2

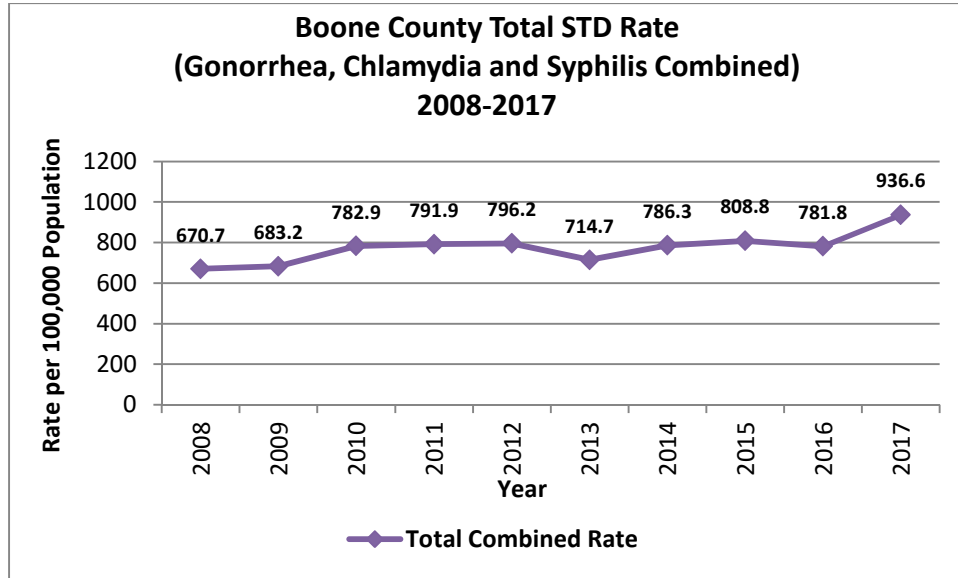
**Based on the Rate per 100,000 population of Missouri Counties

Figure 2:

Percent Change of STD Rates for Boone County and Missouri from 2016 to 2017				
Condition	2016 (Rate per 100,000)	2017 (Rate per 100,000)	Boone County Percent Change From 2016 to 2017	Missouri Percent Change From 2016 to 2017
Chlamydia	667.0	752.0	12.7% ↑	5.8% ↑
Gonorrhea	109.2	175.5	60.7% ↑	13.8% ↑
Syphilis (all stages)	5.7	9.1	17.5% ↑	40.1% ↑
Total	781.8	936.6	19.8% ↑	8.7% ↑

The overall rate of STDs reported in Boone County has risen 40% between 2008 and 2017. Figure 3 shows the annual increase in sexually transmitted disease reporting in Boone County.

Figure 3:



Technical Notes

- Rates in this report are calculated using the 2016 estimated population (MOPHIMS).
- The gonorrhea, chlamydia, and syphilis cases analyzed in this report are cases from residents of Boone County with the condition reported between weeks 1 and 52 of the Centers for Disease Control and Prevention (CDC) 2017 calendar (Jan 1, 2017-December 30, 2017).
- Ten years of trend data are used in this report to remain consistent with the Missouri Department of Health and Senior Services trend data.
- Race is analyzed in two categories: white and black. Other and unknown races are reflected in the total counts and rates. They are not singled out for analysis because of low case counts and the need to maintain confidentiality.
- Syphilis is minimally addressed because of the low number of reports in Boone County and the need to maintain confidentiality.
- HIV and Hepatitis B and C are not addressed in this report. The Missouri Department of Health & Senior Services releases an annual report, The Epidemiological Profiles (<http://health.mo.gov/data/hivstdaids/>), which addresses both hepatitis and HIV by region, and the annual Communicable Disease Summary for Boone County reports all hepatitis cases.

Chlamydia

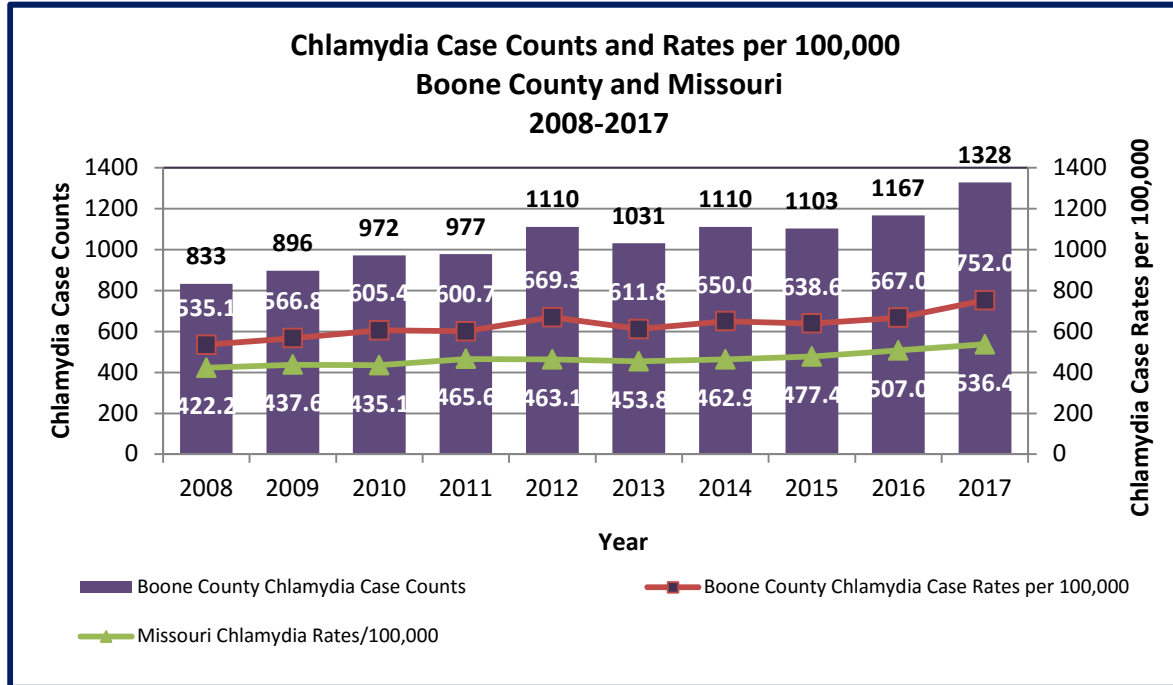
Chlamydia, caused by the bacteria *Chlamydia trachomatis*, is the most common notifiable disease in the United States. You can get chlamydia by having vaginal, anal, or oral sex with someone who has chlamydia. It is among the most prevalent of all STDs, and since 1994, has comprised the largest proportion of all STDs reported to CDC.

Nationally, rates of chlamydia are highest among adolescent and young adult females; the population targeted for routine screening in family planning clinics. Although the rates of reported cases among men are generally lower than rates among women, reflecting the larger numbers of women being screened for chlamydia, increased availability of urine testing, and extragenital testing has resulted in an increased number of men being tested and diagnosed with a chlamydial infection. (CDC)

Chlamydial infections in women are usually asymptomatic. Untreated infections can result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in an infection which could lead to blindness and pneumonia (CDC).

In 2017, the 1,328 cases of chlamydia reported accounted for 80% of three sexually transmitted diseases (gonorrhea, chlamydia and syphilis) reported in Boone County. As in previous years, Boone County reported a higher incidence rate of chlamydia than Missouri (Figure 1) and has the fourth highest chlamydia rate of all Missouri counties. Figure 4 shows both the chlamydia case counts and the incidence rates per 100,000 for the past 10 years, and shows a comparison with Missouri chlamydia rates for the same time period. While the 2017 chlamydia rate of 752/100,000 population was a 12.7% increase from the previous year, in the last ten years (2008-2017) the chlamydia rate in Boone County increased 40.5%.

Figure 4:



In 2017, 67% of reported chlamydia cases in Boone County were females, with a rate almost twice that of males (Figures 5 and 6).

Adolescents and young adults between the ages of 15 - 24 had the highest rates of reported chlamydia in Boone County as shown in Figures 6 and 7, a trend seen throughout the United States (CDC).

The 18-19 year age group had the highest chlamydia rates, with the 20-24 year age group second. These two age groups combined account for 66% of the total cases reported in Boone County.

Figure 5:

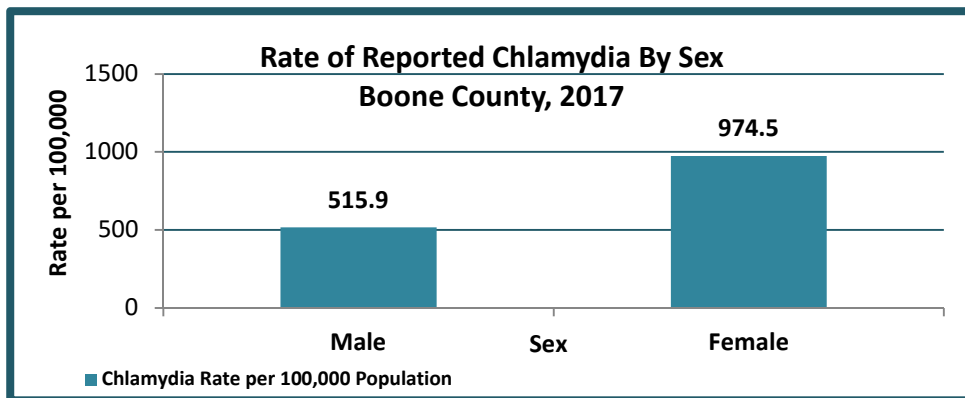


Figure 6:

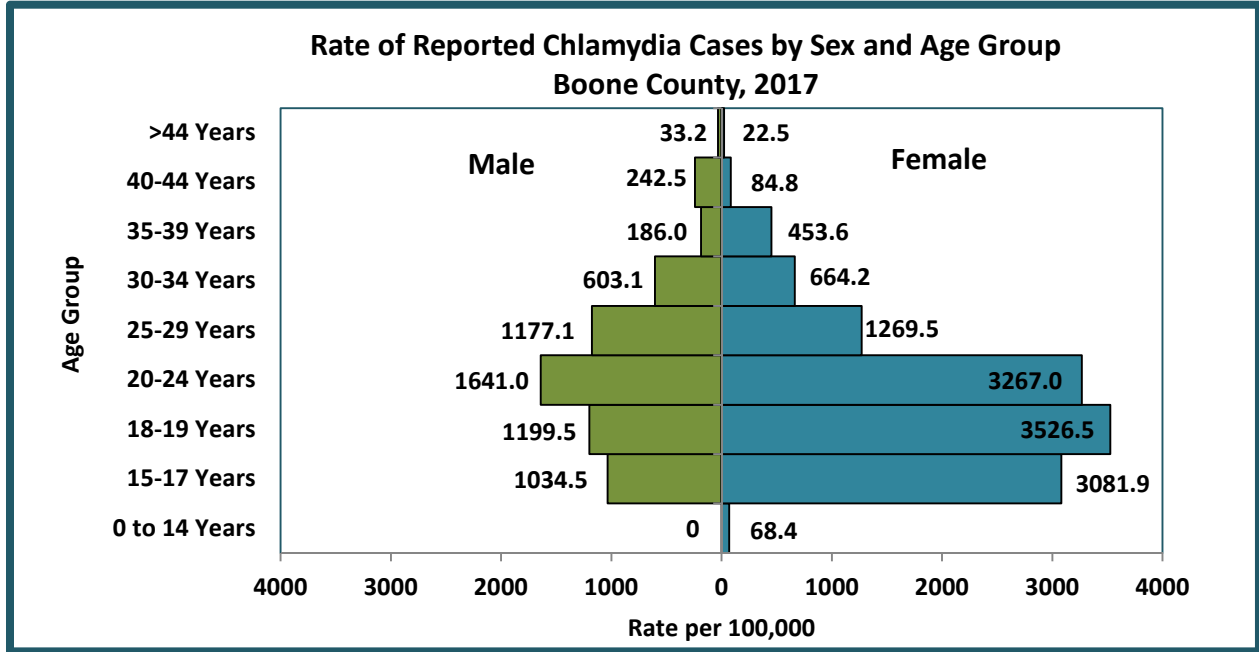


Figure 7:

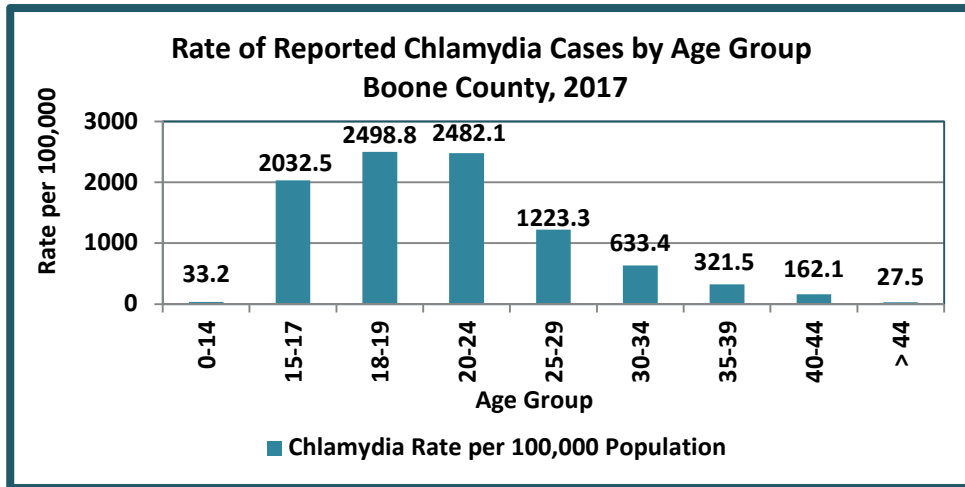
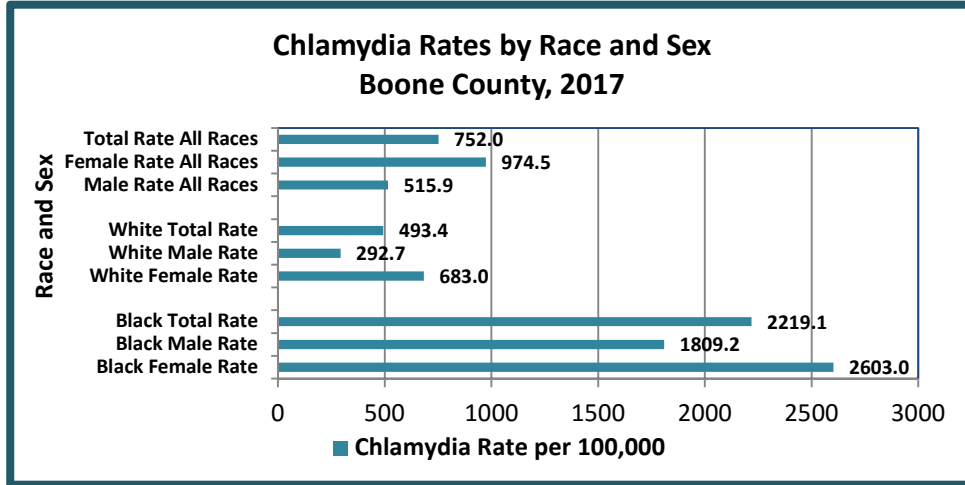


Figure 8:



Rates of reported chlamydia were higher among females, and by race, highest among black residents. Overall, in 2017, the reported rates of chlamydia among black Boone County residents were 4.5 higher than the rate among white Boone County residents.

Chlamydia Summary

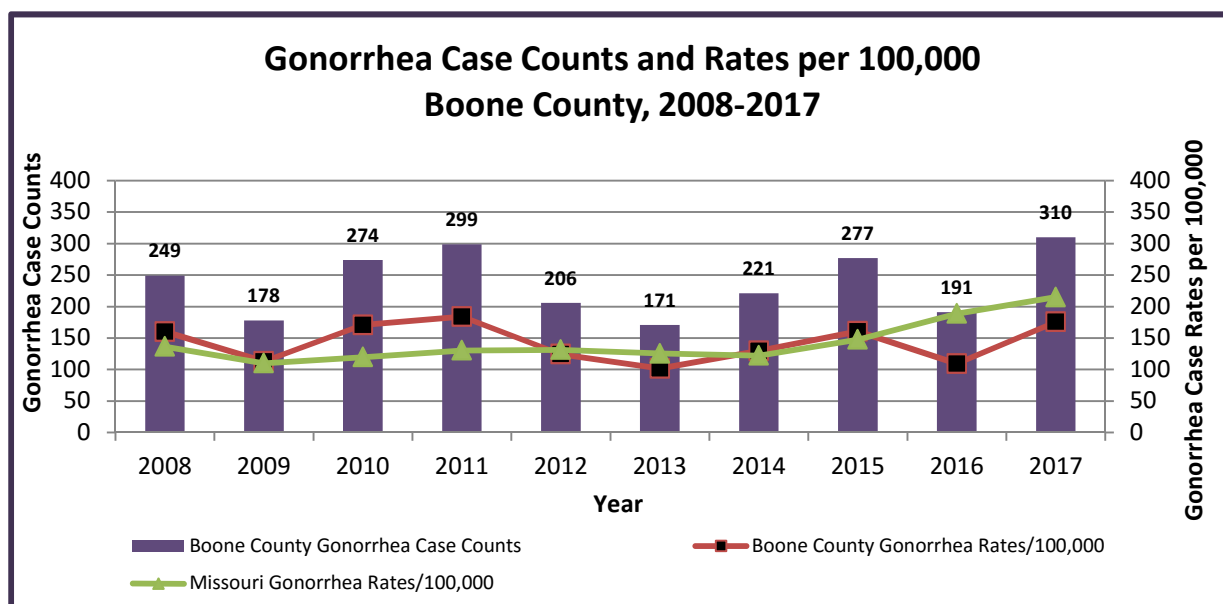
Chlamydia continues to be the most common reported sexually transmitted disease in Boone County, with 1,328 cases reported in 2017, a 12.7% increase from 2016. Rates of reported chlamydia are higher among women than men, and racial differences are identified in the reported case rates with chlamydia rates in Boone County black residents higher than among white residents.

Gonorrhea

Gonorrhea, a common infectious disease, is caused by infection with the *Neisseria gonorrhoeae* bacterium. You can get gonorrhea from having vaginal, anal, or oral sex with someone who has gonorrhea. Gonorrhea infections, like those resulting from chlamydia, are a major cause of PID in the United States. PID can lead to serious outcomes in women, such as tubal infertility, ectopic pregnancy, and chronic pelvic pain (CDC).

In Boone County, 310 gonorrhea cases were reported in 2017. The incidence rate of gonorrhea was 175.5 per 100,000, a 60.7% increase from the 2016 rate of 109.2. In 2017, Boone County ranked as the 15th highest county in Missouri for gonorrhea rates, but was lower than Missouri's gonorrhea rate of 214.8 per 100,000 population (Figures 1 and 2).

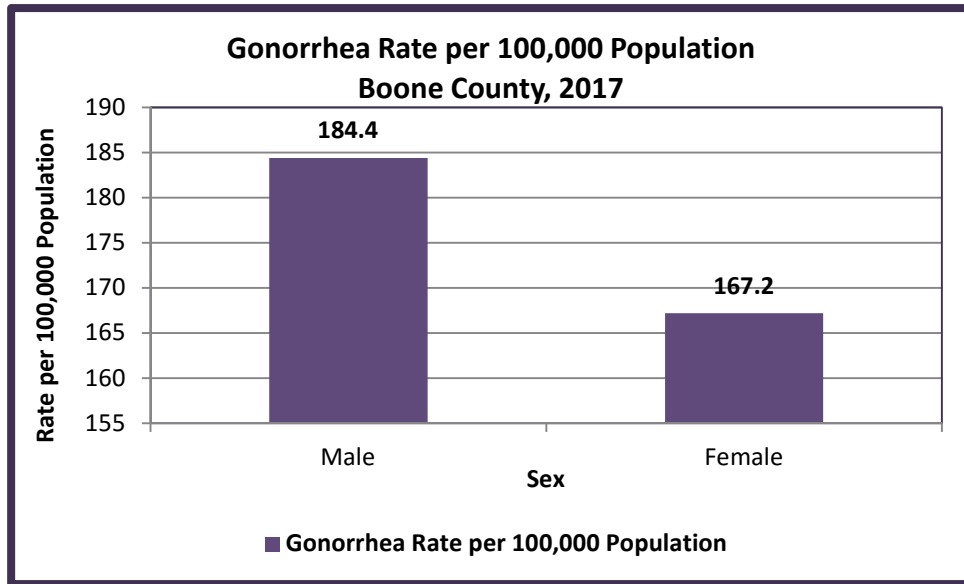
Figure 9:



Gonorrhea rates in Boone County have fluctuated during the last ten years. The 2017 Boone County rate of 175.5 per 100,000 population was 9.7% higher than the rate ten years ago (2008) of 160.0. The highest rate of reported gonorrhea in Boone County within the last ten years was in 2011, with a rate of 183.8 per 100,000.

Unlike chlamydia, the gonorrhea rate in Boone County was slightly higher in males than in females in 2017, with a rate of 184.4 per 100,000 compared to 167.2 per 100,000 (Figure 10).

Figure 10:



Adolescents between 15 to 17 years had the highest reported rates of gonorrhea in 2017 in Boone County; with the 25 to 29 age group second highest (Figure 11).

Figure 11:

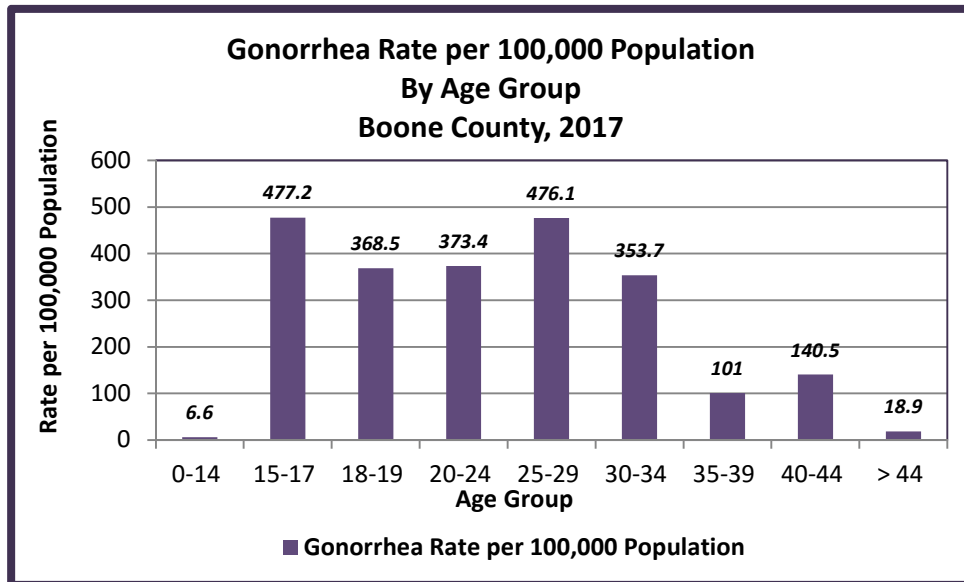


Figure 12 shows reported gonorrhea rates by sex and age group. Females between the ages of 15 to 17 had the highest rates, with males having the highest rates of reported gonorrhea between the ages of 25 to 29.

Figure 12:

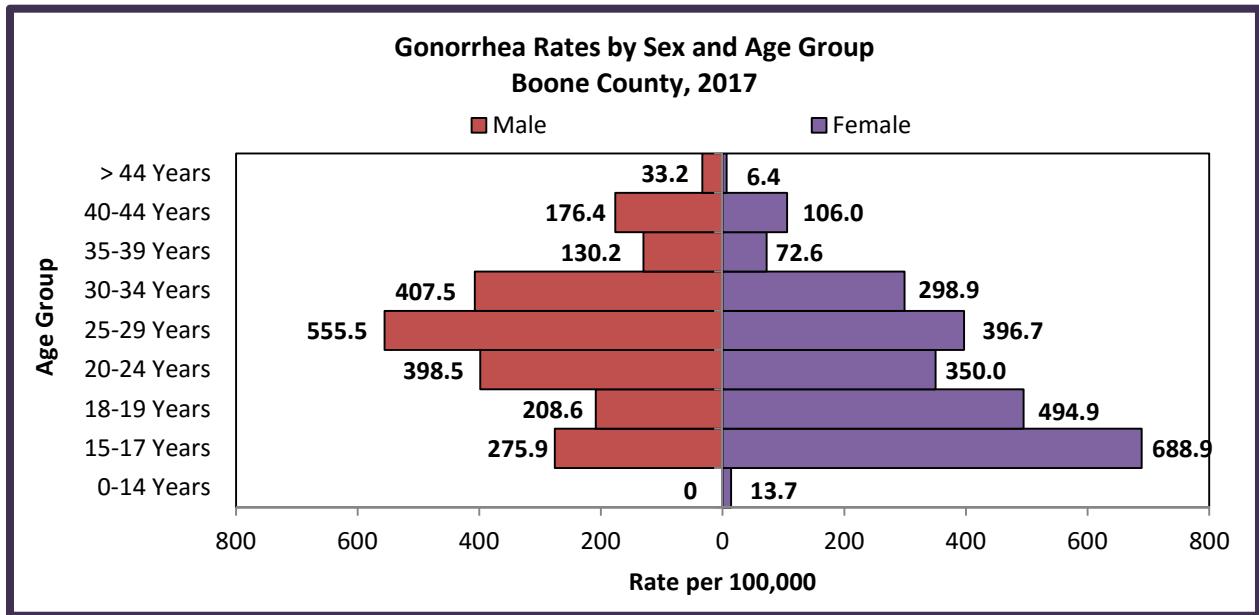


Figure 13:

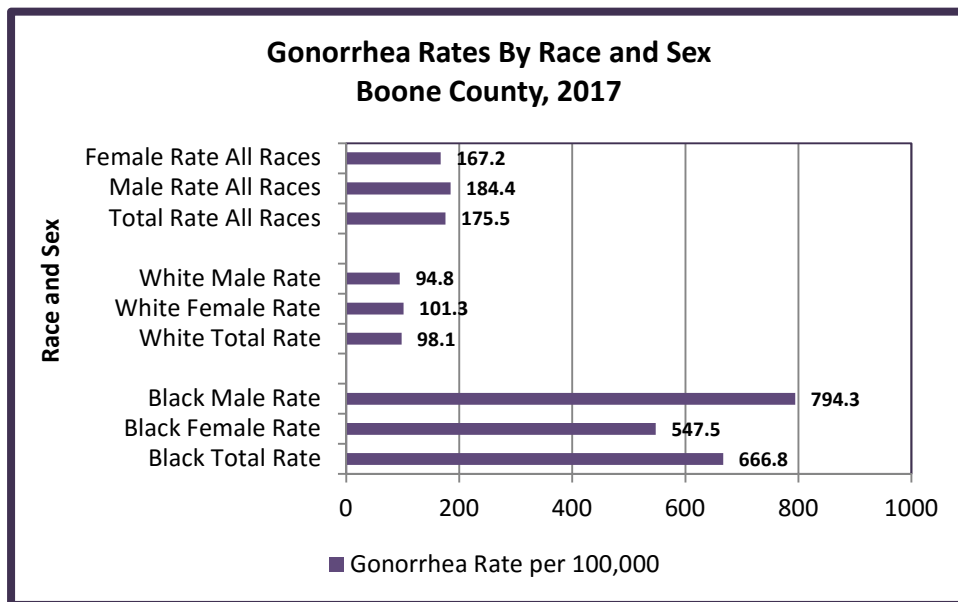


Figure 13 shows the overall rate of reported gonorrhea was higher in men, although white females were reported at a slightly higher rate than white males. In 2017, the rate of reported gonorrhea in Boone County remained higher among blacks (666.8 per 100,000) than whites (98.1 per 100,000).

Syphilis

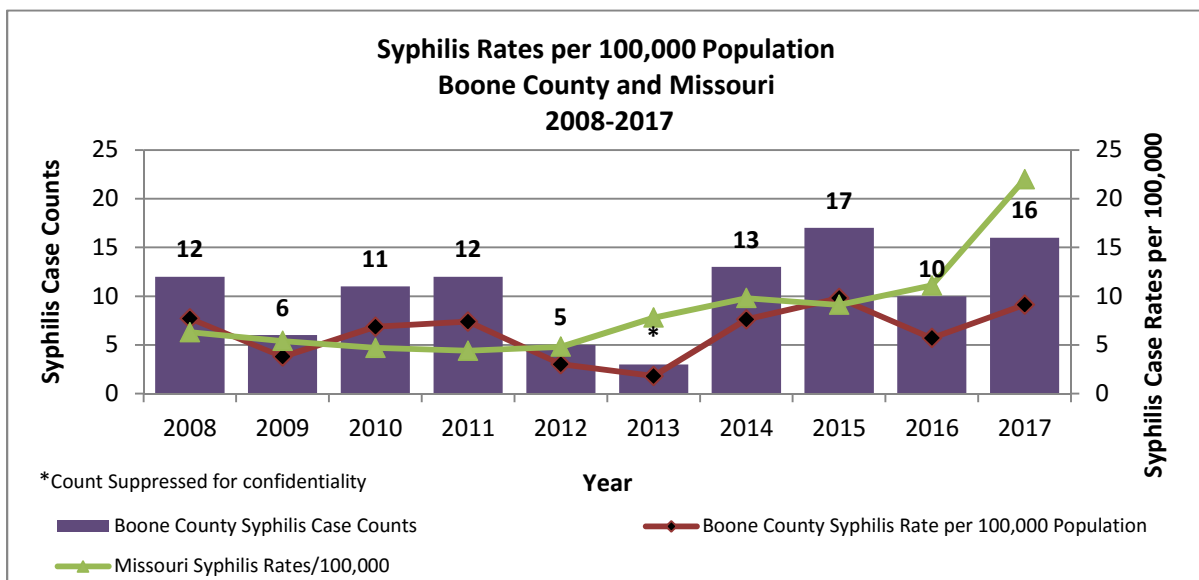
Syphilis is caused by the bacterium *Treponema pallidum*, and can cause long term complications if not adequately treated. It is transmitted from person to person by direct contact with a syphilitic sore, known as a chancre. Pregnant women with the disease can transmit it to their unborn child (CDC).

Symptoms of syphilis will resolve with or without treatment. Left untreated, the infection will progress to late stages of disease. In late stages, syphilis may damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Syphilis can invade the nervous system at any stage of infection, and cause a wide variety of symptoms including headaches, altered behavior, and movement problems.

Traditionally Boone County had low case counts and rates of syphilis. In 2017, there were 16 syphilis cases reported, a rate of 9.1 per 100,000. This is a 17% increase from 2016 (Figures 1 & 2). Missouri's rate for 2017 was 22.0 per 100,000, which was a 40.1% increase over the Missouri syphilis rate for 2016.

As mentioned in the technical notes, syphilis will not be analyzed by race, sex, or age due to low case counts. Figure 14 compares the counts and rates reported in Boone County from 2007 to 2016

Figure 14:



Reporters

All communicable disease reports are counted in the county of residence for the patient, despite where the testing occurred. In 2017, Boone County continued to have multiple physicians and clinics providing STD testing, with the 1,654 cases reported from a total of 83 different providers and clinics in the United States. Five sites reported 81.2% of the cases. Those clinics include:

Table 3:

Reporter	Number of cases reported	Percent of Total Reported
University of Missouri Health Care System	563	34.0%
Columbia/Boone County Public Health & Human Services	324	19.6%
Private Physicians and Clinics	251	15.2%
Spectrum Health	136	8.2%
Planned Parenthood of Columbia	113	6.8%
Urgent Cares	111	6.7%
Out of County Reporters	80	4.8%
Other Reporters	76	4.7%
Total	1654	100%

Summary

Sexually transmitted diseases, particularly chlamydia, are the most reported communicable disease in Boone County, only surpassed by influenza in some years. The rates of all reportable diseases addressed in this report (chlamydia, gonorrhea and syphilis) increased in 2017, with gonorrhea seeing the largest increase in rate (60.7%). Younger populations (15-24 year olds), and black Boone County residents remain disproportionately impacted by sexually transmitted diseases. Data is presented by age group and sex in the Appendix (Tables A-C) and age group, sex, and race (Tables D-F).

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References:

CDC. STD Surveillance 2017, National Profile. October 2016. 1 August 2017

<https://www.cdc.gov/std/stats16/default.htm>

MOPHIMS. n.d. 2018 <<https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder>>.

Appendix:

Table A:

2017 Boone County STD Case Counts and Rates per 100,000 By Age Group and Sex						
Age Group	Female Count	Female Rate	Male Count	Male Rate	Total Count	Total Rate
0-14	12	82.1	0	0.0	12	39.9
15-17	104	3770.8	38	1310.3	142	2509.7
18-19	195	4021.4	55	1434.2	250	2878.9
20-24	498	3631.6	264	2063.0	762	2874.4
25-29	126	1666.2	134	1772.3	260	1719.2
30-34	58	963.1	64	1043.2	122	1003.5
35-39	29	526.1	17	316.2	46	422.5
40-44	10	212.1	19	418.9	29	313.5
>44	9	28.9	22	81.2	31	53.2
<i>Total (all ages)</i>	1041	1145.0	613	715.2	1654	936.6

Table B:

2017 Boone County Chlamydia Case Counts and Rates per 100,000 By Age Group and Sex						
Age Group	Female Count	Female Rate	Male Count	Male Rate	Total Count	Total Rate
0-14	10	68.4	0	0.0	10	33.2
15-17	85	3081.9	30	1034.5	115	2032.5
18-19	171	3526.5	46	1199.5	217	2498.8
20-24	448	3267.0	210	1641.0	658	2482.1
25-29	96	1269.5	89	1177.1	185	1223.3
30-34	40	664.2	37	603.1	77	633.4
35-39	25	453.6	10	186.0	35	321.5
40-44	*	84.8	11	242.5	15	162.1
>44	7	22.5	9	33.2	16	27.5
<i>Total (all ages)</i>	886	974.5	442	515.9	1328	752.0

*Counts of less than five are suppressed for confidentiality

Table C:

2017 Boone County Gonorrhea Case Counts and Rates per 100,000 By Age Group and Sex						
Age Group	Female Count	Female Rate	Male Count	Male Rate	Total Count	Total Rate
0-14	*	13.7	0	0.0	*	6.6
15-17	19	688.9	8	275.9	27	477.2
18-19	24	494.9	8	208.6	32	368.5
20-24	48	350.0	51	398.5	99	373.4
25-29	30	396.7	42	555.5	72	476.1
30-34	18	298.9	25	407.5	43	353.7
35-39	*	72.6	7	130.2	11	101.0
40-44	5	106.0	8	176.4	13	140.5
>44	*	6.4	9	33.2	11	18.9
<i>Total (all ages)</i>	152	167.2	158	184.4	310	175.5

**Counts of less than five are suppressed for confidentiality*

Table D:

**2017 Boone County Sexually Transmitted Disease Case Counts and Rates per 100,000
By Age Group, Race, and Sex**

Age Group	Black Female Count	Black Female Rate	Black Male Count	Black Male Rate	Black Total Count	Black Total Rate	White Female Count	White Female Rate	White Male Count	White Male Rate	White Total Count	White Total Rate	Total Count	Total Rate
0-14	8	338.7	0	0.0	8	163.0	8	70.1	0	0	*	12.8	12	39.9
15-17	33	7801.4	20	4310.3	53	5975.2	53	2467.4	14	625.6	67	1527.6	142	2509.7
18-19	63	12701.6	20	4761.9	83	9061.1	104	2554.0	27	839.0	131	1797.0	250	2878.9
20-24	133	8837.2	104	7819.5	237	8359.8	301	2696.2	126	1195.6	427	1967.5	762	2874.4
25-29	42	5185.2	53	7300.3	95	6184.9	70	1107.8	62	982.9	132	1045.4	260	1719.2
30-34	16	2476.8	21	3658.5	37	3032.8	33	665.7	36	692.2	69	679.3	122	1003.5
35-39	10	1694.9	7	1380.7	17	1549.7	17	374.0	6	133.3	23	254.3	46	422.5
40-44	*	204.9	7	1631.7	8	872.4	8	209.0	7	186.9	15	198.1	29	313.5
>44	*	42.4	10	483.1	11	248.3	8	29.0	7	29.2	15	29.1	31	53.2
Total (all ages)	307	3171.2	242	2669.6	549	2928.6	597	785.7	285	397.2	882	597.0	1654	936.6

**Counts of less than five are suppressed for confidentiality*

Table E:

2017 Boone County Chlamydia Case Counts and Rates per 100,000 By Age Group, Race, and Sex														
Age Group	Black Female Count	Black Female Rate	Black Male Count	Black Male Rate	Black Total Count	Black Total Rate	White Female Count	White Female Rate	White Male Count	White Male Rate	White Total Count	White Total Rate	Total Count	Total Rate
0-14	6	254.0	0	0.0	6	122.3	*	26.30	0	0	*	12.8	10	33.2
15-17	27	6383.0	15	3232.8	42	4735.1	44	2048.4	12	536.2	56	1276.8	115	2032.5
18-19	58	11693.5	17	4047.6	75	8187.8	92	2259.3	23	714.7	115	1577.5	217	2498.8
20-24	116	7707.6	81	6090.2	197	6948.9	275	2463.3	100	948.9	375	1727.9	658	2482.1
25-29	27	3333.3	30	4132.2	57	3710.9	56	886.2	44	697.5	100	792.0	185	1223.3
30-34	9	1393.2	11	1916.4	20	1639.3	24	484.2	20	384.5	44	433.2	77	633.4
35-39	8	1355.9	*	591.7	11	1002.7	15	330.0	*	66.7	18	199.0	35	321.5
40-44	*	204.9	*	932.4	5	545.3	*	78.4	5	133.5	8	105.6	15	162.1
>44	0	0.0	*	144.9	*	67.7	7	25.4	*	12.5	10	19.4	16	27.5
Total (all ages)	252	2603.0	164	1809.2	416	2219.1	519	683.0	210	292.7	729	493.4	1328	752.0

**Counts of less than five are suppressed for confidentiality*

Table F:

2017 Boone County Gonorrhea Case Counts and Rates per 100,000 By Age Group, Race, and Sex														
Age Group	Black Female Count	Black Female Rate	Black Male Count	Black Male Rate	Black Total Count	Black Total Rate	White Female Count	White Female Rate	White Male Count	White Male Rate	White Total Count	White Total Rate	Total Count	Total Rate
0-14	*	84.7	0	0.0	*	40.8	0	0	0	0	0	0.0	*	6.6
15-17	6	1418.4	5	1077.6	11	1240.1	9	419.0	*	89.4	11	250.8	27	477.2
18-19	5	1008.1	*	714.3	8	873.4	12	294.7	*	93.2	15	205.8	32	368.5
20-24	15	996.7	22	1654.1	37	1305.1	26	232.9	24	227.7	50	230.4	99	373.4
25-29	15	1851.9	21	2892.6	36	2343.8	14	221.6	17	269.5	31	245.5	72	476.1
30-34	7	1083.6	10	1742.2	17	1393.4	9	181.6	14	269.2	23	226.4	43	353.7
35-39	*	339.0	*	789.0	6	546.9	*	44.0	*	66.7	5	55.3	11	101.0
40-44	0	0.0	*	699.3	*	327.2	*	104.5	*	53.4	6	79.2	13	140.5
>44	*	42.4	*	193.2	5	112.8	*	3.6	*	12.5	*	7.8	11	18.9
Total (all ages)	53	547.5	72	794.3	125	666.8	77	101.3	68	94.8	145	98.1	310	175.5

**Counts of less than five are suppressed for confidentiality*