



# Allegheny County Health Department STD/HIV Program

## 2017 ANNUAL STD REPORT

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## Executive Summary

Sexually transmitted diseases (STDs) continue to represent a major public health burden nationwide. The Centers for Disease Control and Prevention (CDC) estimates that 20 million new cases of STDs occur in the United States each year. Serious long-term complications from STDs include reproductive health problems (e.g. infertility) and certain cancers (cervical, oral, liver). STDs passed from a mother to her newborn may cause serious illness to the infant. Infections with certain STDs increase an individual's risk for acquiring or transmitting human immunodeficiency virus (HIV).

This report outlines the trends in four nationally notifiable STDs (chlamydial infection, gonorrhea, syphilis and HIV/AIDS), and provides an overview of these infections in Allegheny County in 2017. The purpose of this report is to give health care providers, policy makers, residents, and other community partners information needed to understand the impact of STDs in Allegheny County.

Chlamydial infection continues to be the most commonly reported STD in Allegheny County with 5,236 cases reported in 2017. The rate of 428.1 cases per 100,000 in 2017 represents a 13% decrease from 2016 and 19% decrease from the 2012 peak. Chlamydial infections disproportionately affect blacks with a rate 12 times that of whites among cases with known race. Approximately 41% of all cases of chlamydial infection are reported in young women between the ages of 15 and 24 years.

In 2017, there were 1,798 cases of gonorrhea reported in Allegheny County, a reduction of 11% from 2016 and 25% from the peak in 2012. The rate of gonococcal infections was 16 times greater among blacks than whites among cases with known race. The 20-29 year age group accounts for a large proportion of reported infections among both males and females, accounting for 56% of reported cases.

The rate of primary and secondary (P&S) syphilis peaked in 2015 with a rate of 10.5 per 100,000 (129 reported cases), declining to 5.0 per 100,000 in 2017 (61 reported cases). In 2017, 57 (93%) cases of P&S syphilis were in males. Most (75%) males diagnosed with syphilis report having sex with men.

In 2017 there were 100 new HIV infections reported in Allegheny County, 21% fewer than in 2016 (126 cases) and 30% fewer than in 2015 (142 cases). Higher rates of new

HIV infections were observed among blacks than among whites. Most new infections were diagnosed in men who have sex with men.

Risk reduction strategies and earlier detection and treatment of STDs can lower the risk for acquiring or transmitting an STD. Recent increases in syphilis in Allegheny County and nationwide highlight the important need for strong public health efforts to combat STDs. Renewed effort by medical professionals, educators and community leaders is essential to increase public awareness and reduce the burden of STDs and HIV/AIDS in Allegheny County.

**Harold Wiesenfeld, M.D.,C.M.**

*Director, STD Program*

*Allegheny County Health Department*

**Acronyms**

ACHD	Allegheny County Health Department
AIDS	Acquired Immunodeficiency Syndrome
CDC	Centers for Disease Control and Prevention
CT	<i>Chlamydia trachomatis</i>
GC	<i>Neisseria gonorrhoeae</i>
HIV	Human Immunodeficiency Virus
IDU	Injection Drug User
MSM	Men who have sex with men
NAAT	Nucleic Acid Amplification Tests
PA	Pennsylvania
P&S	Primary and Secondary Syphilis
PID	Pelvic Inflammatory Disease
STD	Sexually Transmitted Diseases
U.S.	United States

## Chlamydia

*An estimated 3 million chlamydial infections occur annually in the US. Many infections remain undetected and untreated because a large proportion of infected individuals are asymptomatic*

*Chlamydia trachomatis* (CT) is the most commonly reported notifiable bacterial STD both in Allegheny County and the United States. Nationwide in 2017, 1,708,569 chlamydia cases were reported to the CDC. It is estimated that nearly 3 million infections occur annually in the US, but many infections remain undetected and untreated because they are asymptomatic. Even though symptoms of chlamydia are usually mild or absent, if left untreated chlamydial infections in women can result in pelvic inflammatory disease (PID), which may lead to infertility, ectopic pregnancies and chronic pelvic pain. Pregnant women with CT can pass the infection to their infants during delivery, potentially causing health issues such as ophthalmia neonatorum or pneumonia. The highest incidence rates are seen in sexually active young women aged 15-24 years. Because of the large burden of disease and risks associated with infection, the Centers for Disease Control and Prevention (CDC) recommends that all sexually active women aged <25 years and under undergo annual chlamydia screening.

### Incidence Rates of Chlamydia

*In 2017, reported chlamydial infections in Allegheny County declined by 13% compared to 2016*

The incidence of chlamydia in Allegheny County increased from 2014 through 2016, but declined in 2017 (Figures 1, 2). The rate of 428.1 cases per 100,000 in 2017 represents a 13% decrease from 489.7 per 100,000 in 2016 (Tables 1, 2). It is possible that declining cases are the result of ongoing chlamydia screening programs that identify and treat individuals with chlamydia and prevent transmission. Alternatively, the decline in reported infections could represent the decreasing ability of existing screening programs to identify chlamydial infections.

### Chlamydia Cases by Sex and Age

*Adolescents and young adults are at highest risk for acquiring chlamydia*

During 2017, 61% of reported chlamydia cases were in females (Figure 3, Table 3). The incidence rate among women (501.9 cases per 100,000 females) in Allegheny County was approximately 44% higher than the rate among men (348.6 cases per 100,000 males), reflecting a larger number of women screened for CT in accordance with screening guidelines. The number of reported cases in females declined by 14% in 2017 and the number of cases reported in men declined by 11% in 2017.

In Allegheny County and nationwide, adolescents and young adults are at highest risk for acquiring CT. Among women, the highest age-specific rates of reported chlamydial infection in 2017 were among those aged 15–24 years, accounting for 68% of all

reported chlamydial infections in women. (Figure 3, Table 4). Age-specific rates among men were highest in those aged 20–29 years. The disproportionate infection rates among younger women may be attributed to several factors, such as screening programs that target younger women, greater biologic susceptibility of younger women to chlamydial infection and risky sexual behavior.

CT continues to infect thousands of persons in Allegheny County. Given that adolescents and young women have the highest rate of infection, all sexually active women age 25 and under should be screened annually for CT, and more frequently if they have additional risk factors.

### **Chlamydia Cases by Race and Zip Code of Residence**

Chlamydia incidence rates were highest among blacks in 2017 (Table 5). For reported cases with known race, the rate among blacks (1,592.3 cases per 100,000 population) was 12 times the rate among whites (127.7 cases per 100,000 population).

Black females in the 15-24-year age group are disproportionately affected, representing 19% of CT cases in 2017 but only 1% of the total population in Allegheny County (Table 4). These findings are similar to those observed nationally. Understanding and addressing the STD disparities between blacks and whites, particularly among youth, is necessary in order to combat the high burden of STDs.

Rates of reported chlamydial infection by zip code of residence are shown in Figure 4. Rates are highest in certain communities in the City of Pittsburgh and adjacent municipalities.

### **Chlamydia Screening in Allegheny County**

As chlamydial infections are mostly asymptomatic, screening programs have been established to detect infections, particularly in females and men who have sex with men. The Allegheny County Health Department (ACHD) provides screening services at the STD Clinic and collects screening data from several other community sites in the county. In 2017, 9,232 patients were screened for CT at the ACHD STD clinic and 4,120 at affiliated screening sites countywide (Table 7). Among those screened at the STD clinic and community sites, 9.8% tested positive for CT (Table 7).

*Chlamydia incidence rate is 12 times higher in blacks than in whites in Allegheny County*

## Chlamydia Data Figures and Tables

Figure 1: Chlamydia Incidence Rates\* in United States, Pennsylvania and Allegheny County, 2007-2017

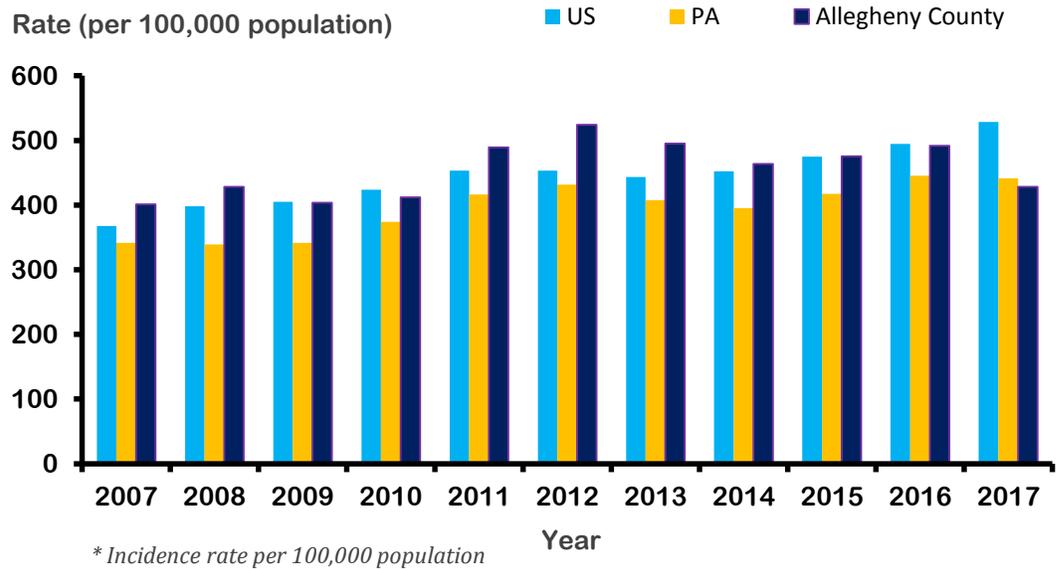
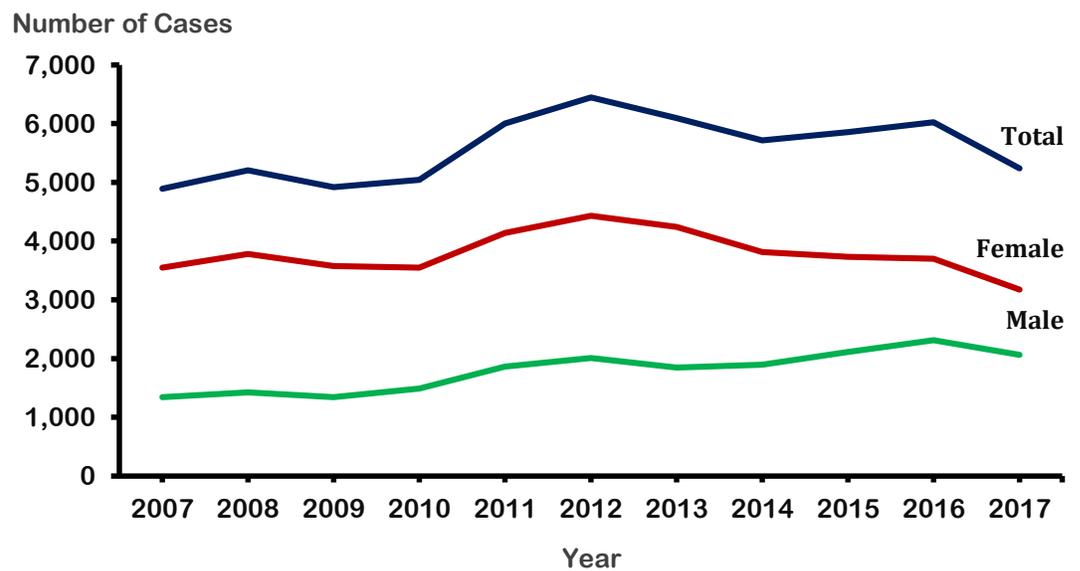


Figure 2: Number of Reported Chlamydia Cases in Allegheny County, 2007-2017



*Table 1: Incidence Rates\* of Chlamydia in United States, Pennsylvania and Allegheny County, 2007-2017*

Year	United States <sup>#</sup>	Pennsylvania <sup>#</sup>	Allegheny County
2007	367.5	341.6	401.3
2008	398.1	339.3	428.2
2009	405.3	341.7	403.4
2010	423.6	374.1	412.1
2011	457.6	416.3	489.0
2012	456.7	431.6	524.2
2013	446.6	407.8	494.9
2014	456.1	395.6	463.8
2015	478.8	418.1	475.4
2016	497.3	444.7	489.7
2017	528.8	441.5	428.1

\* Incidence per 100,000 population

<sup>#</sup> Source: CDC STD Surveillance Reports

*Table 2: Reported Cases and Incidence Rates\* of Chlamydia in Allegheny County, 2007-2017*

Year	Number of Reported Cases	Estimated Population <sup>∞</sup>	Incidence Rate*
2007	4,893	1,219,210	401.3
2008	5,203	1,215,103	428.2
2009	4,916	1,218,494	403.4
2010	5,042	1,223,348	412.1
2011	6,000	1,227,767	488.7
2012	6,444	1,230,870	523.5
2013	6,095	1,233,892	494.0
2014	5,710	1,233,480	462.9
2015	5,850	1,230,052	475.6
2016	6,025	1,230,360	489.7
2017	5,236	1,223,048	428.1

\* Incidence per 100,000 population

<sup>∞</sup> Based on U.S. Census Bureau estimated population data

Figure 3: Incidence Rates\* of Chlamydia by Age and Sex in Allegheny County, 2017

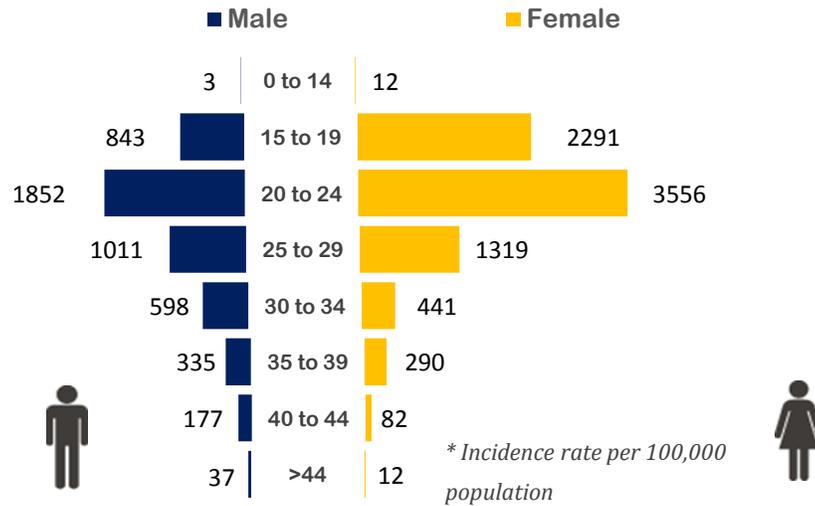


Table 3: Reported Cases and Incidence Rates\* of Chlamydia by Sex in Allegheny County, 2016-2017

Gender	2016			2017		
	Reported Cases	Estimated Population <sup>∞</sup>	Rate*	Reported Cases	Estimated Population <sup>∞</sup>	Rate*
Female	3,701	637,331	580.7	3174	632,372	501.9
Male	2,314	593,029	390.2	2061	591,226	348.6
Unknown	10	n/a	n/a	1	n/a	n/a
<b>Total</b>	<b>6,025</b>	<b>1,230,360</b>	<b>489.7</b>	<b>5236</b>	<b>1,223,048</b>	<b>428.1</b>

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 4: Reported Cases of Chlamydia by Age, Race and Sex in Allegheny County, 2017

Age Group	Black		White		Unknown/Other		Total		
	Female	Male	Female	Male	Female	Male	Female	Male	Totals
0-14	8	2	2	1	1	0	11	3	<b>14</b>
15-19	439	213	139	26	241	71	819	310	<b>1129</b>
20-24	570	343	320	140	458	222	1348	705	<b>2053</b>
25-29	290	217	174	139	171	135	635	491	<b>1126</b>
30-34	95	111	57	105	44	60	196	276	<b>472</b>
35-39	43	48	30	47	28	28	101	123	<b>224</b>
40-44	9	27	9	12	11	21	29	60	<b>89</b>
45 +	15	32	11	32	9	29	35	93	<b>128</b>
<b>Total</b>	<b>1,469</b>	<b>993</b>	<b>742</b>	<b>502</b>	<b>963</b>	<b>566</b>	<b>3174</b>	<b>2061</b>	<b>5235</b>

Table 5: Reported Cases and Incidence Rates\* of Chlamydia by Race in Allegheny County, 2016-2017

Race	2016			2017		
	Reported Cases	Estimated Population <sup>∞</sup>	Rate*	Reported Cases	Estimated Population <sup>∞</sup>	Rate*
Black	2,730	159,592	<b>1,710.6</b>	2,462	154,620	<b>1592.3</b>
White	1,341	992,002	<b>135.2</b>	1,244	974,521	<b>127.7</b>
Unknown/Other	1,954	-----	-----	1,530	-----	-----
<b>Total</b>	<b>6,025</b>	<b>1,230,360</b>	<b>490.8</b>	<b>5,236</b>	<b>1,223,048</b>	<b>428.1</b>

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 6: Reported Chlamydia Cases by Race in Allegheny County, 2012-2017

Race	2012	2013	2014	2015	2016	2017
<b>Black</b>	3,976 (61.7%)	3,665 (60.1%)	3,148 (55.1%)	3,028 (51.8%)	2,730 (45.3%)	2,462 (47.0%)
<b>White</b>	1,392 (21.6%)	1,347 (22.1%)	1,383 (24.2%)	1,529 (26.1%)	1,341 (22.3%)	1,244 (23.8%)
<b>Unknown/Other</b>	1,076 (16.7%)	1,083 (17.8%)	1,179 (20.6%)	1,293 (22.1%)	1,954 (32.4%)	1,530 (29.2%)
<b>Total</b>	<b>6,444</b>	<b>6,095</b>	<b>5,710</b>	<b>5,850</b>	<b>6,025</b>	<b>5,236</b>

Figure 4: Rate of reported chlamydial infections by ZIP code of residence, Allegheny County, 2017

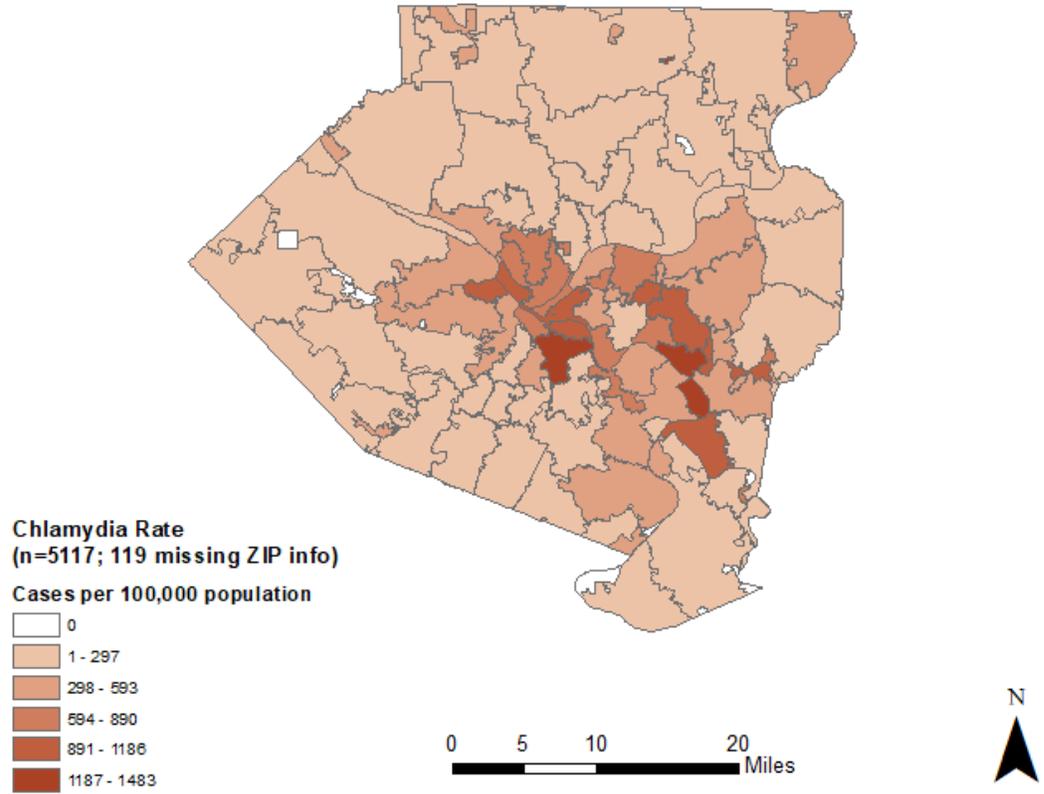


Table 7: Chlamydia Screening- ACHD and Affiliated Facilities, Allegheny County, 2011-2017

	Clinic	Total* Screened	Total Positive	Positive %
2011	STD Clinic	11,149	1,305	11.7%
	All Others	10,821	825	7.6%
	<b>2011 Total</b>	<b>21,947</b>	<b>2,130</b>	<b>9.7%</b>
2012	STD Clinic	10,679	1,298	12.2%
	All Others	10,566	812	7.7%
	<b>2012 Total</b>	<b>21,245</b>	<b>2,110</b>	<b>9.9%</b>
2013	STD Clinic	11,475	1,257	11.0%
	All Others	11,188	796	7.1%
	<b>2013 Total</b>	<b>22,663</b>	<b>2,053</b>	<b>9.1%</b>
2014	STD Clinic	9,834	1,079	11.0%
	All Others	8,466	570	6.7%
	<b>2014 Total</b>	<b>18,300</b>	<b>1,649</b>	<b>9.0%</b>
2015	STD Clinic	7154	805	11.3%
	All Others	11050	756	6.8%
	<b>2015 Total</b>	<b>18204</b>	<b>1561</b>	<b>8.6%</b>
2016	STD Clinic	9065	990	10.9%
	All Others	5493	433	7.9%
	<b>2016 Total</b>	<b>14558</b>	<b>1423</b>	<b>9.8%</b>
2017	STD Clinic	9232	987	10.7%
	All Others	4120	316	7.7%
	<b>2017 Total</b>	<b>13352</b>	<b>1303</b>	<b>9.8%</b>

## Gonorrhea

Gonorrhea is the second most commonly reported notifiable disease in the United States and is caused by the bacterium *Neisseria gonorrhoeae*. The highest reported rates of infection are among sexually active teenagers and young adults aged 15-24 years. Common symptoms in men include a burning sensation when urinating and a milky discharge from the penis that usually appears 1 to 14 days after acquiring the infection. Symptoms in women include a painful or burning sensation when urinating, increased vaginal discharge, or vaginal bleeding between menstrual periods. Many men and women infected with gonorrhea are asymptomatic. Similar to chlamydial infections, untreated gonococcal infections in women can cause PID, which may lead to infertility, ectopic pregnancies and chronic pelvic pain. In men, untreated infection may result in epididymitis which can lead to sterility.

### Incidence Rates of Gonorrhea

From 1975 through 1997, the gonorrhea incidence rate in the United States declined 74.3% following the implementation of the national gonorrhea control program in the mid-1970s; however, rates of reported gonorrhea in the U.S. have been increasing since 2009. Nationwide in 2017, 555,608 gonorrhea cases were reported to the CDC, a rate of 171.9 cases per 100,000, which represents an increase of 18% compared with 2016 (Figure 5, Table 8). This increase was observed across the nation in all age groups and both males and females, but larger among in males. In Pennsylvania, 15,244 cases were reported in 2017, 636 more cases than in 2016 (Figure 5, Table 8).

*In Allegheny County, the incidence rate of gonorrhea declined by 11% from 2016 to 2017*

In Allegheny County, gonorrhea cases declined between 2016 and 2017. (Figures 5, 6). During 2017, 1,798 cases were reported (147.0 per 100,000 population), 11% fewer cases than in 2016 (Tables 8, 9).

### Gonorrhea by Sex and Age

In Allegheny County the gonorrhea incidence was higher in males than in females in 2017, with a rate of 191.3 cases per 100,000 in males compared with 105.6 cases per 100,000 in females (Table 10). Of reported cases, 63% were among men. Of the female cases reported, 61% were in the 20-29-year age-group (Figure 7, Table 11). Of the male cases reported, 53% were in the 20-29-year age-group (Figure 7, Table 11). Cases among men decreased by 4% and cases among women decreased by 23% from 2016 to 2017 (Figure 6).

### **Gonorrhea by Race and Zip Code**

In Allegheny County in 2017, of 1,417 reported gonorrhea cases with known race, 1,012 (71%) were in the black population. For cases with known race, the incidence rate among blacks was nearly 16 times the rate among whites (654.5 and 41.6 cases per 100,000 population, respectively) (Table 12). Education, outreach programs and effective targeted screening programs are important to decrease the morbidity in this population.

Some areas of the city of Pittsburgh and immediately adjacent municipalities had the highest rates of reported gonorrhea in the county (Figure 8)

### **Gonorrhea Screening in Allegheny County**

In 2017, 9,232 individuals were screened for gonorrhea in the STD Clinic and 4,120 were screened at other community sites supported by the ACHD's STD program. Among those screened at the STD clinic and community sites, 3.9% tested positive for gonorrhea (Table 14).

## Gonorrhea Data Figures and Tables

Figure 5: Gonorrhea Incidence Rates\* in United States, Pennsylvania, and Allegheny County, 2007-2017

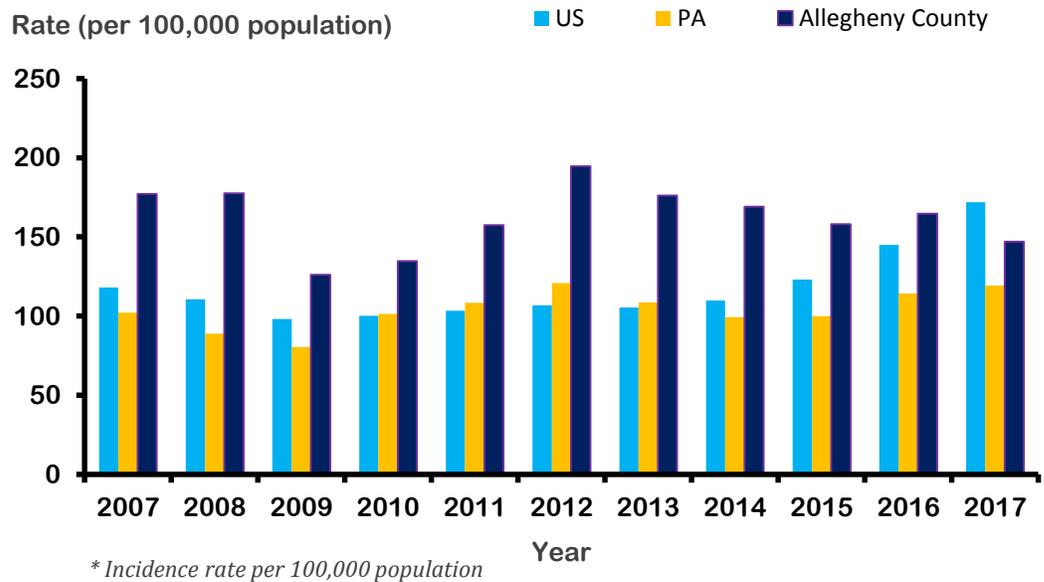


Table 8: Incidence Rates\* of Gonorrhea in United States, Pennsylvania and Allegheny County, 2007-2017

Year	United States#	Pennsylvania#	Allegheny County
2007	118.0	102.2	177.2
2008	110.7	88.9	177.6
2009	98.1	80.4	126.0
2010	100.2	101.4	134.7
2011	103.3	108.4	157.4
2012	106.7	120.8	194.6
2013	105.3	108.7	176.2
2014	110.7	99.5	169.0
2015	123.9	100.0	158.1
2016	145.8	114.1	164.3
2017	171.9	119.2	147.0

\* Incidence per 100,000 population

# Source: CDC STD Surveillance Reports

Figure 6: Number of Reported Gonorrhea Cases in Allegheny County, 2007-2017

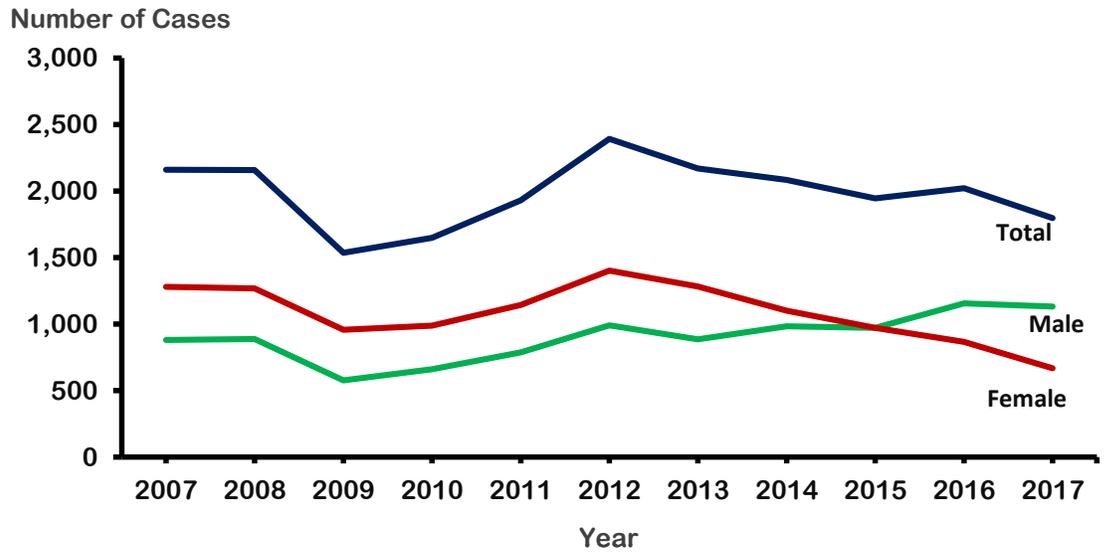


Table 9: Reported Cases and Incidence Rates\* of Gonorrhea in Allegheny County, 2007-2017

Year	Number of Reported Cases	Estimated Population <sup>α</sup>	Incidence Rate*
2007	2,161	1,219,210	177.2
2008	2,158	1,215,103	177.6
2009	1,535	1,218,494	126.0
2010	1,648	1,223,348	134.7
2011	1,931	1,227,767	157.3
2012	2,392	1,230,870	194.3
2013	2,170	1,233,892	175.9
2014	2,084	1,233,480	168.9
2015	1,944	1,230,052	158.0
2016	2,022	1,230,360	164.3
2017	1,798	1,223,048	147.0

\*Incidence per 100,000 population

<sup>α</sup>Based on U.S. Census Bureau estimated population data

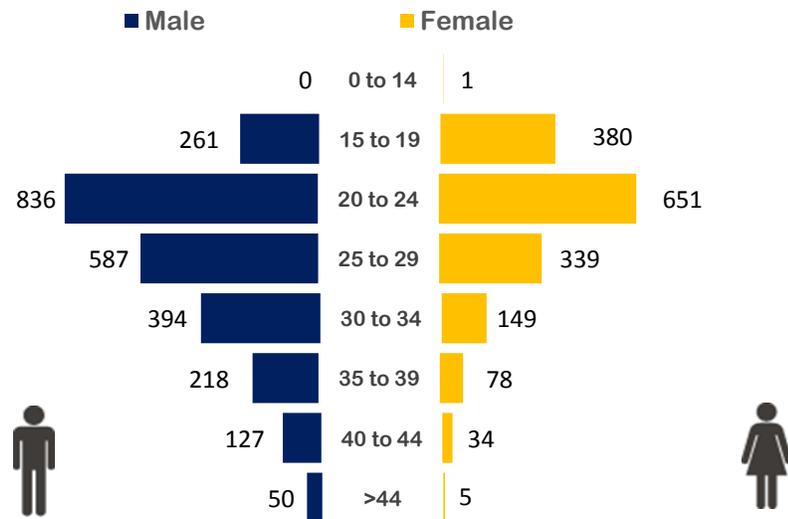
Table 10: Reported Cases and Incidence Rates\* of Gonorrhea by Sex in Allegheny County, 2016-2017

Gender	2016			2017		
	Reported Cases	Estimated Population <sup>α</sup>	Rate*	Reported Cases	Estimated Population <sup>α</sup>	Rate*
Female	867	637,331	136.0	667	631,822	105.6
Male	1155	593,029	194.8	1,131	591,226	191.3
<b>Total</b>	<b>2,022</b>	<b>1,230,360</b>	<b>164.3</b>	<b>1,798</b>	<b>1,223,048</b>	<b>147.0</b>

\*Incidence per 100,000 population

<sup>α</sup>Based on U.S. Census Bureau estimated population data

Figure 7: Incidence Rates\* of Gonorrhea by Age and Sex in Allegheny County, 2017



\* Incidence rate per 100,000 population

\*Incidence per 100,000 population

<sup>α</sup>Based on U.S. Census Bureau estimated population data

Table 11: Reported Cases of Gonorrhea by Age, Race and Sex in Allegheny County-2017

Age Group	Black		White		Unknown/Other		Total		Totals
	Female	Male	Female	Male	Female	Male	Female	Male	
10-14	1	0	0	0	0	0	1	0	1
15-19	82	71	21	6	33	19	136	96	232
20-24	165	174	34	64	48	80	247	318	565
25-29	117	133	20	92	26	60	163	285	448
30-34	41	83	15	61	10	38	66	182	248
35-39	14	45	10	22	3	13	27	80	107
40-44	8	21	1	8	3	14	12	43	55
45 +	8	49	4	47	3	31	15	127	142
<b>Total</b>	<b>436</b>	<b>576</b>	<b>105</b>	<b>300</b>	<b>126</b>	<b>255</b>	<b>667</b>	<b>1131</b>	<b>1798</b>

Table 12: Reported Cases and Incidence Rates\* of Gonorrhea by Race in Allegheny County, 2016-2017

Race	2016			2017		
	Reported Cases	Estimated Population <sup>∞</sup>	Rate*	Reported Cases	Estimated Population <sup>∞</sup>	Rate*
Black	1,199	159,592	<b>751.3</b>	1,012	154,620	<b>654.5</b>
White	411	992,002	<b>41.4</b>	405	974,521	<b>41.6</b>
Unknown/Other	412	-----	-----	381	-----	-----
<b>Total</b>	<b>2,022</b>	<b>1,230,360</b>	<b>164.3</b>	<b>1,798</b>	<b>1,223,048</b>	<b>147.0</b>

Table 13: Reported Gonorrhea Cases by Race in Allegheny County, 2012-2017

Race	2012	2013	2014	2015	2016	2017
<b>Black</b>	1,718 71.8%	1,556 71.7%	1,381 66.3%	1,216 62.6%	1,199 59.3%	1,012 56.3%
<b>White</b>	405 16.9%	359 16.5%	390 18.7%	391 20.1%	411 20.3%	405 22.5%
<b>Unknown/Other</b>	269 11.2%	255 11.8%	313 15.0%	337 17.3%	412 20.4%	381 21.2%
<b>Total</b>	<b>2,392</b>	<b>2,170</b>	<b>2,084</b>	<b>1,944</b>	<b>2,022</b>	<b>1,798</b>

Figure 8: Gonorrhea Rate by Zip Code of Residence, Allegheny County, 2017

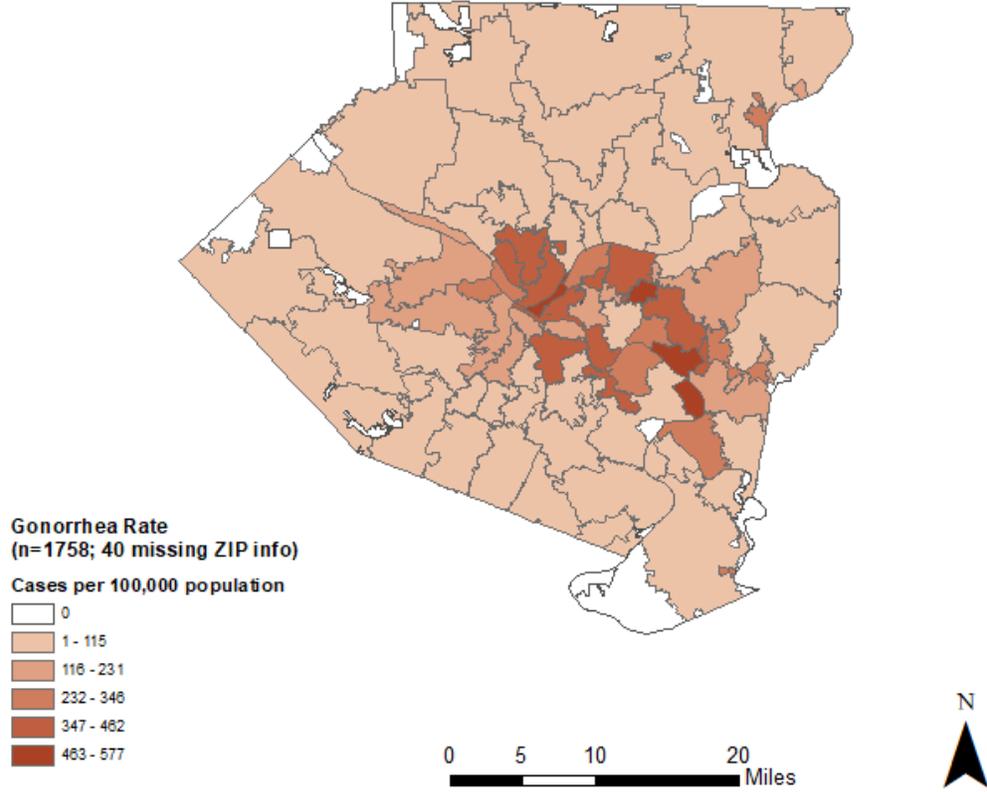


Table 14: Gonorrhea Screening, ACHD and Affiliated Facilities, Allegheny County, 2011-2017

Clinic		Total Screened	Total Positive	Positive %
2011	STD Clinic	11,150	590	5.3%
	All Others	10,811	180	1.7%
	<b>2011 Total</b>	<b>21,961</b>	<b>770</b>	<b>3.5%</b>
2012	STD Clinic	10,679	672	6.3%
	All Others	10,566	216	2.0%
	<b>2012 Total</b>	<b>21,245</b>	<b>888</b>	<b>4.2%</b>
2013	STD Clinic	11,480	656	6.3%
	All Others	11,190	218	2.0%
	<b>2013 Total</b>	<b>22,670</b>	<b>874</b>	<b>3.9%</b>
2014	STD Clinic	9,834	379*	3.9%
	All Others	8,466	151	1.8%
	<b>2014 Total</b>	<b>18,300</b>	<b>530</b>	<b>2.9%</b>
2015	STD Clinic	7154	368	5.1%
	All Others	11050	169	1.5%
	<b>2015 Total</b>	<b>18204</b>	<b>537</b>	<b>3.0%</b>
2016	STD Clinic	9065	474	5.2%
	All Others	5493	119	2.2%
	<b>2016 Total</b>	<b>14558</b>	<b>593</b>	<b>4.1%</b>
2017	STD Clinic	9232	443	4.8%
	All Others	4120	83	2.0%
	<b>2017 Total</b>	<b>13352</b>	<b>526</b>	<b>3.9%</b>

## Syphilis

Syphilis is caused by the bacterium *Treponema pallidum*. Syphilis is transmitted from person to person by direct sexual contact with an infected partner during vaginal, oral or anal sex, or during pregnancy from an infected mother to her fetus. Syphilis is divided into disease stages—primary, secondary, early latent (within 1 year of infection), late latent (more than 1 year after infection) and tertiary. The term “early syphilis” includes primary, secondary and early latent syphilis. The hallmark symptom of primary syphilis is a round, typically painless sore (in the genitals, rectum or mouth) called a chancre that usually disappears in about 3 to 6 weeks. In the secondary stage, the most common symptom is a rash on the palms of the hands and the soles of the feet. Without treatment, the infection may progress to the tertiary stage of syphilis which may cause damage to the central nervous system, heart or other organs. Vertical transmission of syphilis to newborns can result in stillbirth, anomalies and/or developmental delays.

### Incidence Rate of Syphilis

#### *Primary and Secondary Syphilis*

The rate of primary and secondary (P&S) syphilis reported in the U.S. decreased during the 1990s, but in 2001 the rate of syphilis nationwide began to increase. Syphilis remains an important emerging problem nationwide, particularly in urban areas. The U.S. incidence rate has increased almost every year since 2000. In the U.S. the incidence rate of P&S syphilis was 9.2 cases per 100,000 population in 2017, an increase of 6% over 2016 (Figure 9, Table 15). In Pennsylvania, there were 6.2 cases per 100,000 population, a 5% increase from 2016. In Allegheny County, 61 cases of primary and secondary syphilis were reported in 2017 (5.0 cases per 100,000 population), a 31% decrease from 88 cases in 2016 (Table 15, Figure 10).

#### *Early Syphilis*

In 2017, there were a total of 138 cases of early syphilis (primary, secondary and early latent), a 25% percent decrease in cases since 2016, but a 119% increase from 2013 (Table 16, 17).

### Syphilis by Age Group, Race, Sex and Zip Code of Residence

In contrast to chlamydia and gonorrhea, syphilis is not commonly reported among adolescents (Figure 11). Of the 61 cases of P&S syphilis reported in 2017, only 3 were

*Primary and secondary syphilis cases decreased in Allegheny County by 31% from 2016 to 2017*

*In 2017, 93% of reported P&S syphilis cases in Allegheny County were in men*

younger than 20 years of age (Table 18). Of 48 P&S syphilis cases with known race, 37 (77%) were in whites (Table 19). Syphilis is far more common in men than women, with 57 (93%) of 61 P&S syphilis cases occurring in men (Tables 20, 21). The incidence rate of P&S syphilis in men (9.6 cases per 100,000 population) is 16 times higher than the incidence rate in women (0.6 cases per 100,000 population) (Table 20). Furthermore, P&S syphilis cases are highest among men who have sex with men (MSM), with 43 male cases reporting sex with males (Table 22), accounting for 70% of all P&S syphilis cases in 2017. Syphilis cases by zip code of residence are shown in Figure 12.

Syphilis is particularly dangerous in pregnancy, as pregnant females can transmit the organism to their newborns, causing congenital syphilis. Congenital syphilis infections can cause stillbirths, deformities, developmental delays, blindness and other permanent damage to a fetus and newborn. Females who are pregnant should be screened for syphilis at the first prenatal visit and, if indicated, in the third trimester. Prenatal screening is extremely important, as treatment in pregnancy may prevent congenital syphilis. During 2017, there were no cases of congenital syphilis reported in Allegheny County. The last congenital syphilis case was reported in 2015.

Early detection, complete reporting, and intensive investigation and treatment of sex partners have been keys the control of syphilis. ACHD screens at designated sites throughout the county, focusing on at-risk individuals and pregnant women.

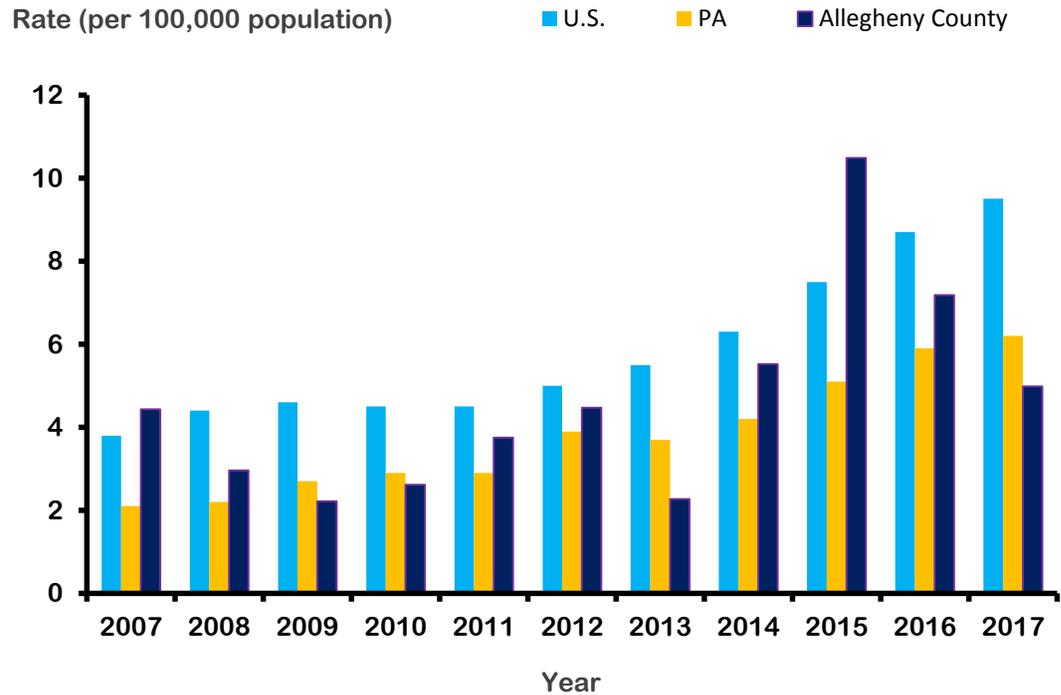
## **Syphilis and HIV**

Of the reported individuals with early syphilis in Allegheny County in 2017, 31% were HIV-infected. All of the coinfection cases were among males. Education and effective prevention messages are needed to be targeted at this population to decrease the rate of coinfection.

*31% of individuals diagnosed with early syphilis were HIV positive*

## Syphilis Data Tables and Figures

Figure 9: P&S Syphilis Incidence Rates\* in United States, Pennsylvania and Allegheny County, 2007-2017



\* Incidence rate per 100,000 population

Table 15: Incidence Rates\* of P&S Syphilis in United States, Pennsylvania and Allegheny County 2007-2017

Year	United States Incidence#	Pennsylvania Incidence#	Allegheny County Incidence# (Case #)
2007	3.8	2.1	4.4(54)
2008	4.4	2.2	3.0(36)
2009	4.6	2.7	2.2(27)
2010	4.5	2.9	2.6(32)
2011	4.5	2.9	3.7(46)
2012	5.0	3.9	4.5(55)
2013	5.5	3.7	2.3(28)
2014	6.3	4.2	5.5(68)
2015	7.5	5.1	10.5(129)
2016	8.7	5.9	7.2 (88)
2017	9.2	6.2	5.0 (61)

\* Incidence per 100,000 population

# Source: CDC STD Surveillance Reports

Figure 10: Number of Reported P&S Syphilis Cases in Allegheny County, 2007-2017

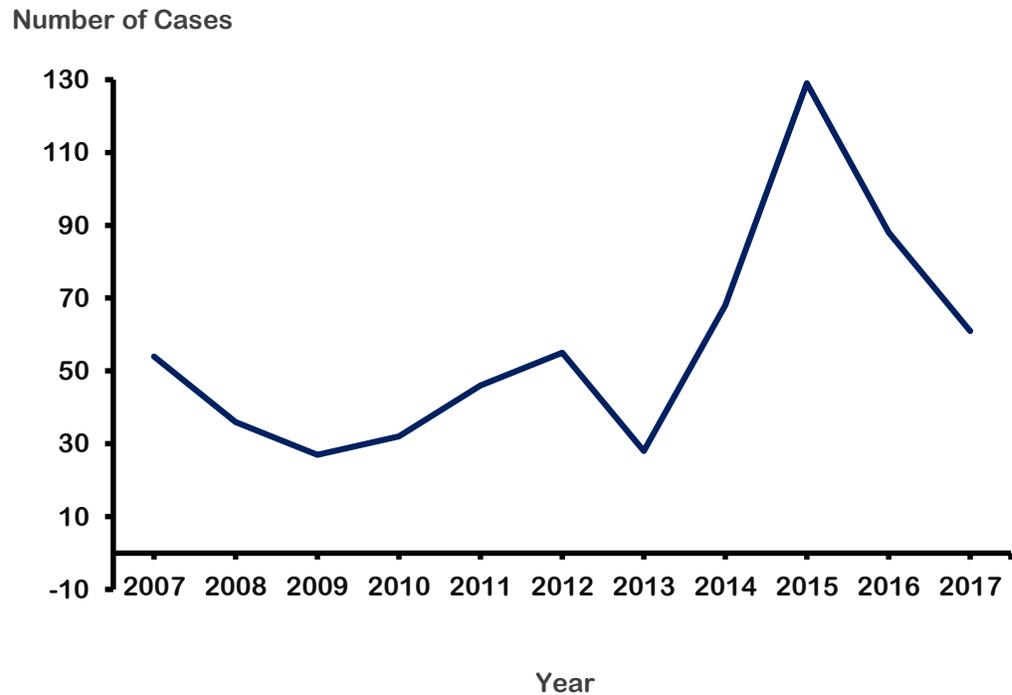


Table 16: Early Syphilis<sup>‡</sup> Cases by Disease Category and Year of Diagnosis in Allegheny County, 2007-2017

Year	Primary	Secondary	Early Latent	Totals
2007	21	33	34	88
2008	6	30	36	72
2009	8	19	20	47
2010	7	25	22	54
2011	7	39	23	69
2012	17	38	40	95
2013	6	22	35	63
2014	24	44	56	124
2015	40	89	93	222
2016	24	64	96	184
2017	19	42	77	138

<sup>‡</sup>Primary, Secondary and Early Latent Syphilis

Table 17: Reported Cases and Incidence Rates\* of Early Syphilis‡ in Allegheny County 2007-2017

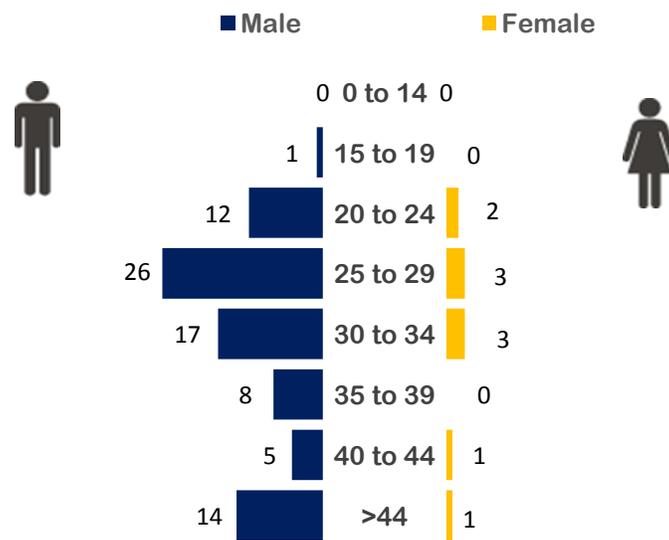
Year	Number of Reported Cases	Estimated Population <sup>∞</sup>	Incidence Rate*
2007	88	1,219,210	7.2
2008	72	1,215,103	5.9
2009	47	1,218,494	3.9
2010	54	1,223,348	4.4
2011	69	1,227,442	5.6
2012	95	1,229,338	7.7
2013	63	1,231,527	5.1
2014	124	1,231,255	10.1
2015	222	1,230,459	18.0
2016	184	1,230,360	15.0
2017	138	1,223,048	11.3

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

‡Primary, Secondary and Early Latent Syphilis

Figure 11: Incidence Rates\* of P&S Syphilis by Age and Sex in Allegheny County, 2017



\* Incidence rate per 100,000 population

‡Primary, Secondary and Early Latent Syphilis

Table 18: Reported Case of P&S Syphilis by Age Group, Race, and Sex in Allegheny County – 2017

Age Group	Black		White		Unknown /Other		Total		TOTAL
	Female	Male	Female	Male	Female	Male	Female	Male	
0-14	0	0	0	0	0	0	0	0	0
15-19	0	1	0	1	0	1	0	3	3
20-24	2	2	0	2	1	1	3	5	8
25-29	1	1	0	7	0	5	1	13	14
30-34	0	1	0	14	0	1	0	15	15
35-39	0	2	0	3	0	1	0	6	16
40-44	0	0	0	1	0	1	0	2	2
45 +	0	1	0	9	0	2	0	13	13
<b>Total</b>	<b>3</b>	<b>8</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>57</b>	<b>61</b>

Table 19: Reported Cases and Incidence Rates\* of P&S Syphilis by Race in Allegheny County, 2016-2017

Race	2016			2017		
	Reported Cases	Estimated Population <sup>∞</sup>	Rate*	Reported Cases	Estimated Population <sup>∞</sup>	Rate*
Black	36	159,592	22.6	11	154,620	7.1
White	42	992,002	4.2	37	974,521	3.8
Unknown/Other	10	-----	-----	13	-----	-----
<b>Total</b>	<b>88</b>	<b>1,230,360</b>	<b>7.2</b>	<b>61</b>	<b>1,223,048</b>	<b>5.0</b>

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 20: Reported Cases and Incidence Rates\* of P&S Syphilis by Sex in Allegheny County, 2016-2017

Gender	2016			2017		
	Reported Cases	Estimated Population <sup>∞</sup>	Rate*	Reported Cases	Estimated Population <sup>∞</sup>	Rate*
Female	10	637,331	1.6	4	631,822	0.6
Male	78	593,029	13.2	57	591,226	9.6
<b>Total</b>	88	1,230,360	7.2	61	1,223,048	5.0

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 21: P&S Syphilis Cases and Incidence Rates\* by Sex and Year of Diagnosis in Allegheny County, 2007-2017

Year	Male		Female		Total	
	Case #	Rate	Case #	Rate	Case #	Rate
2007	31	5.4	23	3.6	54	4.4
2008	30	5.2	6	0.9	36	3.0
2009	23	4.0	0	0	27	2.2
2010	31	5.3	0	0	32	2.6
2011	43	7.3	0	0	46	3.7
2012	50	8.5	5	0.8	55	4.5
2013	27	4.6	0	0	28	2.3
2014	62	10.4	6	0.9	68	5.5
2015	120	20.2	9	1.4	129	10.5
2016	78	13.2	10	1.6	88	7.2
2017	57	9.6	4	0.6	61	5.0

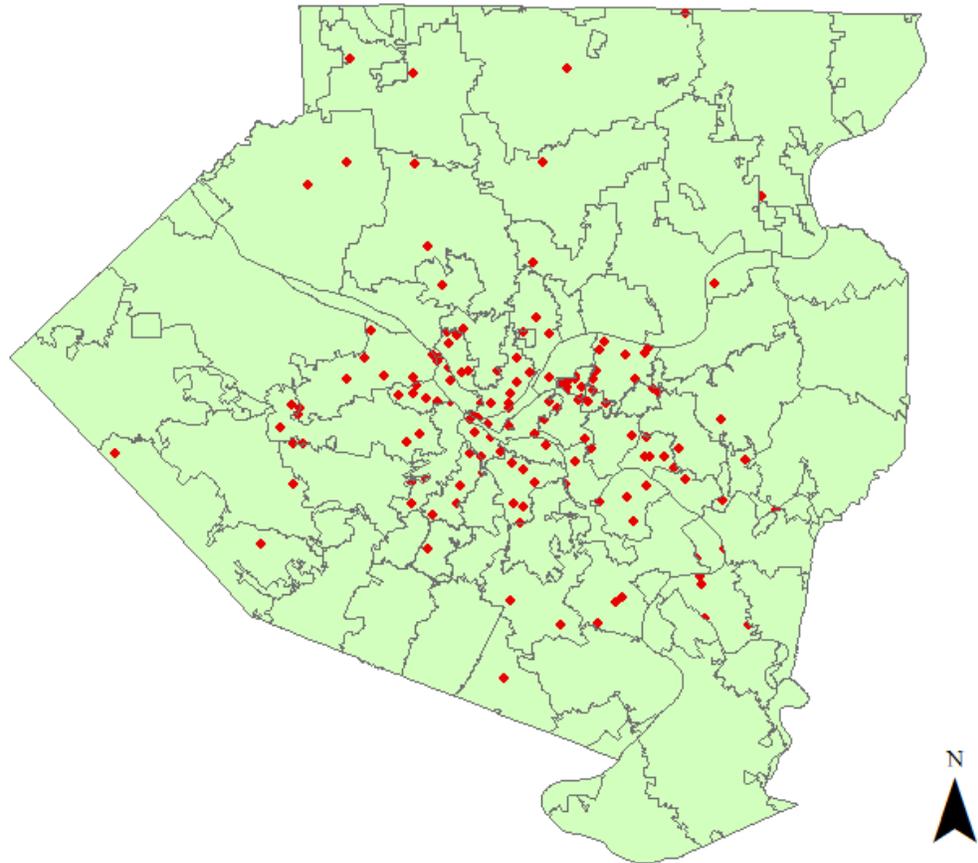
\*Incidence per 100,000 population

Table 22: Risk Factors Associated with Syphilis<sup>&</sup> in Allegheny County – 2017

Exposure Category	P&S		Early Latent		Total cases
	Female	Male	Female	Male	
Shared drug injection equipment with another person	0	1	0	0	1
Ever had a body piercing	0	1	0	0	1
Ever had a tattoo	0	2	1	1	4
Gave money, drugs, or other gifts to have sex with someone	0	0	0	0	0
Received money, drugs, or other gifts to have sex with someone	0	1	0	1	2
Had sex while traveling outside the United States	0	2	0	3	5
Incarcerated within past 12 months	0	0	0	3	3
Self-identified and/or physical gender different from gender at birth	1	0	1	2	4
Previously tested for HIV	2	34	2	42	80
Sex- Anal	1	35	0	40	76
Sex in a bathhouse	0	1	0	4	5
Sex- Oral	2	42	4	44	92
Sex- Vaginal	1	3	5	3	12
Tested for HIV this event	3	32	6	34	75
Sex with female	0	4	0	3	7
Sex with male	3	43	6	48	100
Sex with MSM	1	42	3	48	94
Sex with HIV/AIDS infected person	0	5	0	7	12
Sex with anonymous person	1	26	0	34	61
Utilization of IDU drugs	0	2	0	3	5
Utilization of non-IDU drugs	1	21	1	22	45
Utilization of sexual enhancement drugs	0	1	0	3	4
Any of these drugs snorted	0	2	0	1	3

<sup>&</sup>Data based on self-reporting; cases may have multiple risk factors

Figure 12: Syphilis Cases by Zip Code of Residence\*, Allegheny County, 2017



### Syphilis Cases

1 Dot = 1 case

0 5 10 20 Miles

Cases are randomly distributed within ZIP Codes

*\*Each dot represents a case but is placed randomly within the zip code or residence, not at the actual address.*

## HIV/AIDS

Human immunodeficiency virus (HIV) is a retrovirus that causes acquired immune deficiency syndrome (AIDS), a disease characterized by progressive deterioration of the immune system. The diminished immune function places infected individuals at risk for opportunistic infections, which may lead to death. Antiretroviral therapy (ART) can dramatically reduce the morbidity and mortality due to HIV infection, making HIV a manageable chronic condition. Persons living with HIV should begin ART treatment as soon as possible after diagnosis to slow the progression of disease and reduce HIV transmission. The keys to interrupting HIV transmission are 1) identification of new infections, 2) referral and linkage to care for those individuals newly diagnosed with HIV, and 3) ensuring those individuals remain in care. Individuals uninfected but at-risk for HIV can reduce their risk of acquiring HIV by using condoms and by taking pre-exposure prophylaxis (PrEP).

### HIV Incidence

In Allegheny County the cumulative number of HIV cases reported from 1981 through December 2017 is 4,956. In 2017, there were 100 new cases of HIV reported in Allegheny County, 26 fewer than reported in 2016 (Figure 13, Table 23). Since 2009, the number of reported HIV infections ranged between 100 and 142 (Table 23). Most (80%) new infections occurred in males (Table 24), with males aged 20-29 years the most affected (Figure 14). While a similar number of male cases occurred in blacks and whites, the rate of new infections among black men was far greater than the rate observed in white men (44.4 versus 8.0 per 100,000 population) (Table 25). In women, 14 (70%) of the 20 new HIV infections were in blacks. Most new infections (61%) occurred among men who have sex with men, 8% among persons with a history of intravenous drug use (IVDU), and 2% reported as both MSM and a history of IVDU (Table 26). No cases of pediatric HIV were reported in Allegheny County in 2017.

In 2017, there were 3,479 individuals living with AIDS in Allegheny County (Table 27).

### AIDS Incidence

In 2017 there were 26 newly diagnosed cases of AIDS reported in Allegheny County, 51% fewer cases than in 2016 (Figure 15, Table 28). Twenty-one (81%) of the new AIDS cases in 2017 were in males; 13 (50%) of new AIDS cases were in whites and 11 (42%) were in blacks (Table 29).

## HIV/AIDS Figures and Tables

### HIV Data Figures and Tables

Figure 13: Number of Reported HIV Cases in Allegheny County, 2009-2017

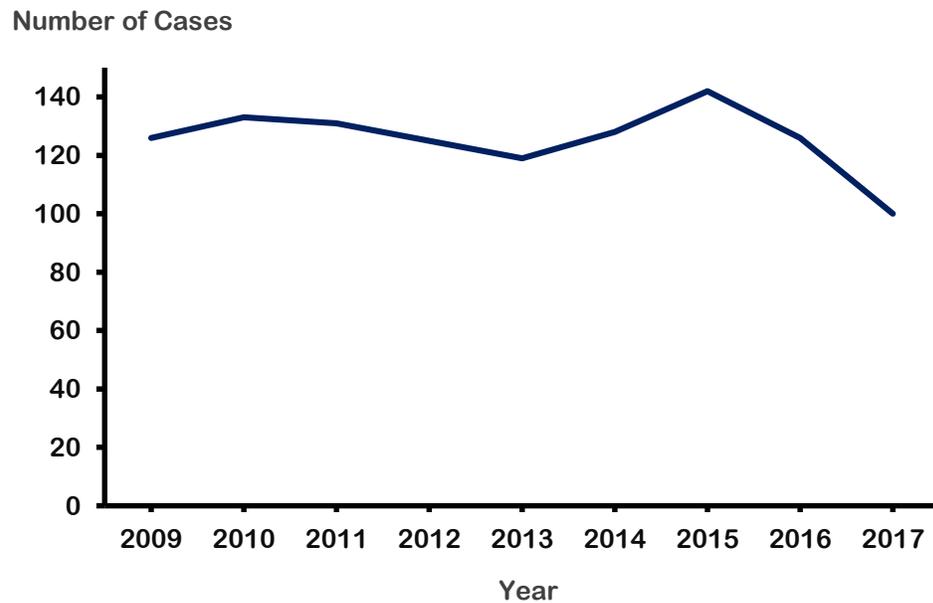


Table 23: Reported HIV Cases and Incidence Rates\* in Allegheny County, 2009-2017

Year	New Cases	Estimated Population <sup>∞</sup>	Incidence Rate*
2009	126	1,218,494	10.3
2010	133	1,223,348	10.9
2011	131	1,227,442	10.7
2012	125	1,229,338	10.2
2013	119	1,231,527	9.7
2014	128	1,231,255	10.4
2015	142	1,230,052	11.5
2016	126	1,230,360	10.2
2017	100	1,223,048	8.2

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 24: New HIV Cases by Sex and Race in Allegheny County, 2017

Race	Male	Female	Total
Black	31	14	45
White	38	5	43
Unknown/Other	11	1	12
<b>Total</b>	<b>80</b>	<b>20</b>	<b>100</b>

Figure 14: HIV Cases by Age and Sex in Allegheny County, 2017

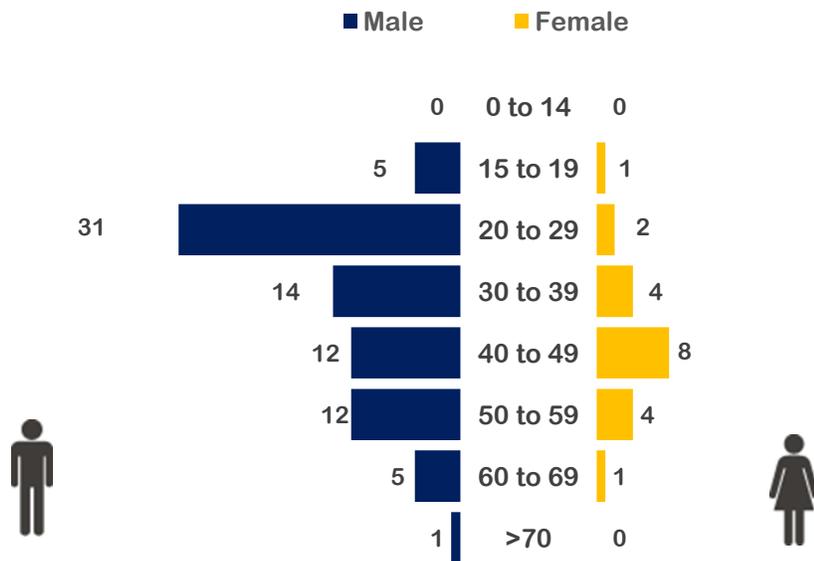


Table 25: New Reported HIV Cases and Incidence Rates\* by Sex and Race in Allegheny County, 2017

Race	Male	Estimated Population <sup>α</sup>	Rate*	Female	Estimated Population <sup>α</sup>	Rate*	Total Cases
Black	31	69,812	44.4	14	84,808	16.5	45
White	38	473,198	8.0	5	501,323	1.0	43
Unknown/Other	11	48,216	22.8	1	45,691	2.2	12
<b>Total</b>	<b>80</b>	<b>591,226</b>	<b>13.5</b>	<b>20</b>	<b>631,822</b>	<b>3.2</b>	<b>100</b>

\*Incidence per 100,000 population

<sup>α</sup>Based on U.S. Census Bureau estimated population data

Table 26: Mode of Transmission, New Reported HIV Cases, 2017

Category	Number of Cases
Sex with injection drug user (IDU)	0
Men who have sex with men (MSM)	61
MSM & IDU	2
IDU	8
Heterosexuality	7
Other	22

*&Data based on self-reporting; cases may have multiple risk factors*

Table 27: Estimated Number of People Living with HIV Disease in Allegheny County as of Dec 31, 2017

Race	Male	Female	Total
Black	1038	438	1476
White	1497	148	1645
Unknown/Other	298	60	358
<b>Total</b>	<b>2833</b>	<b>646</b>	<b>3479</b>

Figure 15: Number of Reported AIDS Cases in Allegheny County, 2009-2017

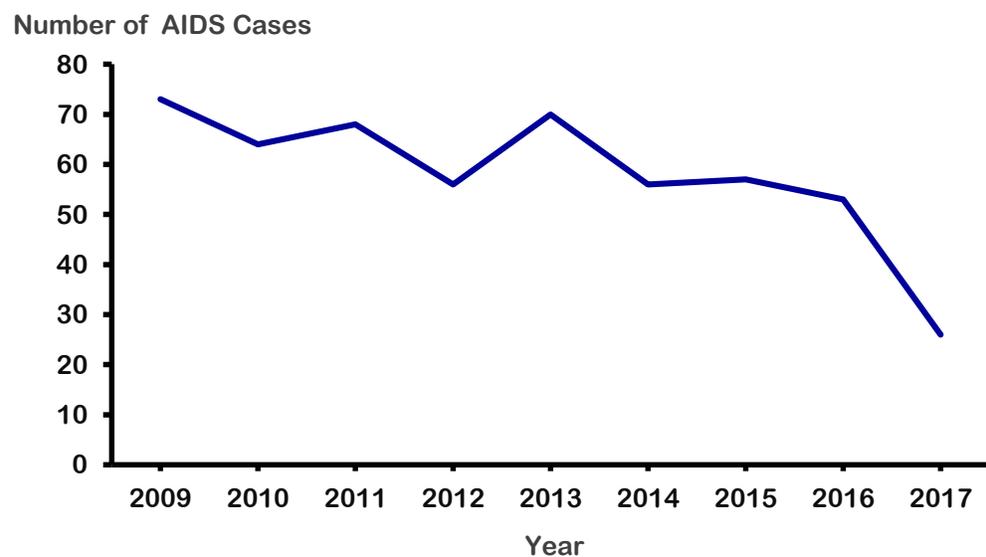


Table 28: Reported Adult AIDS Cases and Incidence Rates\* in Allegheny County, 2009-2017

Year	Reported Cases	Estimated Population <sup>∞</sup>	Incidence Rate*
2009	73	1,218,494	6.0
2010	64	1,223,348	5.2
2011	68	1,227,442	5.5
2012	56	1,229,338	4.6
2013	70	1,231,527	5.7
2014	56	1,231,255	4.5
2015	57	1,230,459	4.6
2016	53	1,230,360	4.3
2017	26	1,223,048	2.1

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

Table 29: AIDS Reported Cases and Incidence Rates\* by Sex and Race in Allegheny County, 2017

Race	Male	Estimated Population <sup>∞</sup>	Rate*	Female	Estimated Population <sup>∞</sup>	Rate*	Total Cases
Black	8	69,812	11.5	3	84,808	3.5	11
White	11	473,198	2.3	2	501,323	0.4	13
Unknown/Other	2	-----	-----	0	-----	-----	2
<b>Total</b>	21	591,226	3.6	5	631,822	0.8	26

\*Incidence per 100,000 population

<sup>∞</sup>Based on U.S. Census Bureau estimated population data

## Risk Reduction Guide

- To decrease your risk for STD infection follow the ABC method:
  - **A – ABSTAIN** from sex until married or in a long term committed relationship
  - **B – BE FAITHFUL** in marriage and long term committed relationships
  - **C – USE A CONDOM** consistently and correctly if neither A nor B is followed
- Avoid getting drunk or high in situations where sex may be a possibility. When people are under the influence of alcohol or other drugs, they are less likely to abstain from sex or to use condoms.
- People may get infected with STDs through vaginal intercourse, anal intercourse, or oral sex.
- Many individuals who are infected with an STD do not have any symptoms. It is best for all partners to get screened for STDs/HIV prior to any sexual activity.
- If you decide to have sex, use a new LATEX condom for each act of intercourse. The condom forms a barrier between you and your partners' sexual fluids that may transmit STD or HIV. Consistent and correct use of condoms provides a high level of protection.
- Do not share needles for any reason. Clean needles are available through Prevention Point Pittsburgh's syringe exchange program at four sites in Allegheny County (<http://www.pppgh.org/>). If you do share needles, learn how to disinfect them with bleach and water. Disinfection with bleach only reduces the risk of getting HIV, it doesn't eliminate the risk.

## Glossary

ASYMPTOMATIC	Having no signs or symptoms of a disease. All STDs are asymptomatic at some time during the phase of the disease process. This makes it necessary for high-risk individuals and exposed sex partners to be tested.
INCIDENCE	The proportion of new cases of a disease occurring in a population during a specified time period, usually one year. Incidence is usually described as the number of cases per 100,000 individuals.
MORBIDITY	The number of people in a community who have a specified disease.
MORTALITY	The number of deaths caused by a disease.
PID	Pelvic Inflammatory Disease. Inflammation of the female pelvic organs; usually the result of gonococcal or chlamydia infection. Treatment of PID may require hospitalization. PID is a major cause of involuntary sterilization in females.
POPULATION	The population statistics used in this report are from the U.S. Census Bureau and the Pennsylvania State Data Center (Penn State Harrisburg) via PA DOH's Enterprise Data Dissemination Informatics Exchange (EDDIE).
PREVALENCE	The number of existing cases of a disease in a given population at a specific time.
PRIMARY SYPHILIS	Primary syphilis is the most infectious stage of the disease. The first clinical sign is the chancre, or lesion, usually on the genitals. Primary syphilis is defined by the presence of the initial syphilitic lesion. The lesion will disappear without treatment within a matter of weeks.
SECONDARY SYPHILIS	Symptoms of secondary syphilis usually occur two to four months after infection, and about a month after the lesions have disappeared. Secondary syphilis can cause a broad spectrum of skin conditions including various rashes, mucous patches, and loss of hair. These symptoms will also disappear. Secondary syphilis is also an infectious stage of the disease.

**EARLY LATENT  
SYPHILIS**

An asymptomatic infectious stage within one year of the initial infection.

**LATE LATENT  
SYPHILIS**

Late latent syphilis is the stage in which no clinical signs or symptoms are present. This stage is defined as being over one year and can extend beyond 20 years.

**CONGENITAL  
SYPHILIS**

Syphilis in the newborn. Infants are infected by their mothers during pregnancy. This is a preventable condition, which is extremely serious and results in syphilitic stillbirth approximately 40% of the time. Pregnant females in Pennsylvania are required to have a syphilis blood test performed on their first prenatal visit and they should be rescreened in the third trimester if indicated. If detected early enough, the mother's infection can be easily treated, resulting in a healthy pregnancy and baby.

**ALLEGHENY COUNTY HEALTH DEPARTMENT**

Blakey Center  
Public Health Clinic  
*1908 Wylie Avenue (Middle Hill)*  
*Pittsburgh, PA 15219*  
*412-578-8081*

*Walk-In, Free, Confidential Testing and Treatment*

**Clinic Hours**

Monday	8:30 AM to 3:30 PM
Tuesday	8:30 AM to 3:30 PM
Wednesday	12:30 PM to 7:30 PM
Thursday	8:30 AM to 3:30 PM
Friday	8:30 AM to 3:30 PM

*Closed on the following holidays: New Year's Day, Martin Luther King Day, Presidents' Day, Primary Election Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day*