



Allegheny County Health Department STD/HIV Program

2018 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 19 million new cases of STDs occur in the United States each year. The direct medical costs of STDs to our healthcare system are approximately \$16 billion.¹ 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 2018. 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 5,655 cases reported in 2018. The rate of 464.1 cases per 100,000 in 2018 represents a 10% increase from 2017. Chlamydial infections disproportionately affect blacks with a rate 11 times that of whites among cases with known race. Approximately 40% of all cases of chlamydial infection are reported in young women between the ages of 15 and 24 years.

In 2018, there were 2,057 cases of gonorrhea reported in Allegheny County for a rate of 168.8 per 100,000, an increase of 16% over the 2017 rate of 145.6 per 100,000 in 2017. The rate of gonococcal infections was 12 times greater among blacks than whites among cases with known race. The 20-29 year age group accounts for a large proportion (52%) of reported infections among both males and females.

During the past decade, the rate of primary and secondary (P&S) syphilis peaked in 2015 with a rate of 10.3 per 100,000 (127 reported cases). The rate in 2018 was 4.8 per 100,000 in 2018 (58 reported cases), similar to the 2017 rate of 4.6 per 100,000 (57 reported cases). In 2018, 54 (93%) cases of P&S syphilis were in males.

In 2018 there were 85 new HIV infections reported in Allegheny County, 6 fewer than in 2017 (7.0 versus 7.4 cases per 100,000 population), and there were 38% fewer new infections than in 2015 (139 cases, 11.3 cases per 100,000 population). A higher rate of newly diagnosed HIV infections was

¹ Owusu-Edusei Jr, K., Chesson, H. W., Gift, T. L., et al. (2013). The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. *Sexually Transmitted Diseases*, 40(3), 197-201.

observed among black residents (30.6 per 100,000 population) compared with white residents (2.5 per 100,000 population). 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 STDs 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.

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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

Chlamydial infection

- Many chlamydial 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 2018, 1,758,668 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.² Even though symptoms of chlamydia are usually mild or absent, if left untreated chlamydial infections 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 undergo annual chlamydia screening.³

In 2018 the rate of chlamydial infections in Allegheny County increased by 10% compared to 2017

Incidence Rates of Chlamydia

The incidence of chlamydia in Allegheny County increased in 2018 after a decline between 2016 and 2017 (Figures 1,2). The rate of 464.1 cases per 100,000 in 2018 represents a 10% increase from 423.1 per 100,000 in 2017 (Figure 1, Tables 1, 2).

Chlamydia Cases by Sex and Age Group

During 2018, 60% of reported chlamydia cases were in females (Figure 2, Table 3). The incidence rate among women (541.2 cases per 100,000 females) in Allegheny County was approximately 42% higher than the rate among men (380.9 cases per 100,000 males), reflecting a larger number of women screened for CT in accordance with screening guidelines.

Adolescents and young adults are at highest risk for acquiring chlamydia

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 2018 were among those aged 15–24 years, accounting for 72% of all reported chlamydial infections in women. (Figure 2 and Table 6). Among men, reported infections were highest in those aged 20–29 years, accounting for 63% of all male cases. The disproportionate infection rates among younger women may be attributed to

² Satterwhite, C. L., Torrone, E., Meites, E. et al. (2013). Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sexually transmitted diseases*, 40(3), 187-193.

³ STD Facts – Chlamydia. <https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm> Accessed December 2, 2019

several factors, such as screening programs that target younger women, greater biologic susceptibility of younger women to chlamydial infection and risky sexual behavior.

Chlamydia Cases by Race and ZIP Code of Residence

Chlamydia incidence rates were highest among blacks in 2018 (Table 4). For reported cases with known race, the rate among blacks (1,548.6 cases per 100,000 population) was 11 times the rate among whites (140.1 cases per 100,000 population).

Black females in the 15-24-year age group are disproportionately affected, representing 18% of CT cases in 2018 but only 1% of the total population in Allegheny County (Table 6). Understanding and addressing the STD disparities, 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 3. 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 2018, 7,053 patients were screened for CT at the ACHD STD clinic and 3,116 at affiliated screening sites countywide (Table 7). Among those screened at the STD clinic, 10.7% tested positive for chlamydia, and at affiliated community sites, 8.7% tested positive (Table 7).

*Chlamydia
incidence rates are
11 times higher in
blacks than in
whites*

Chlamydia Data Figures and Tables

Figure 1: Number of Reported Chlamydia Cases in Allegheny County, 2009-2018

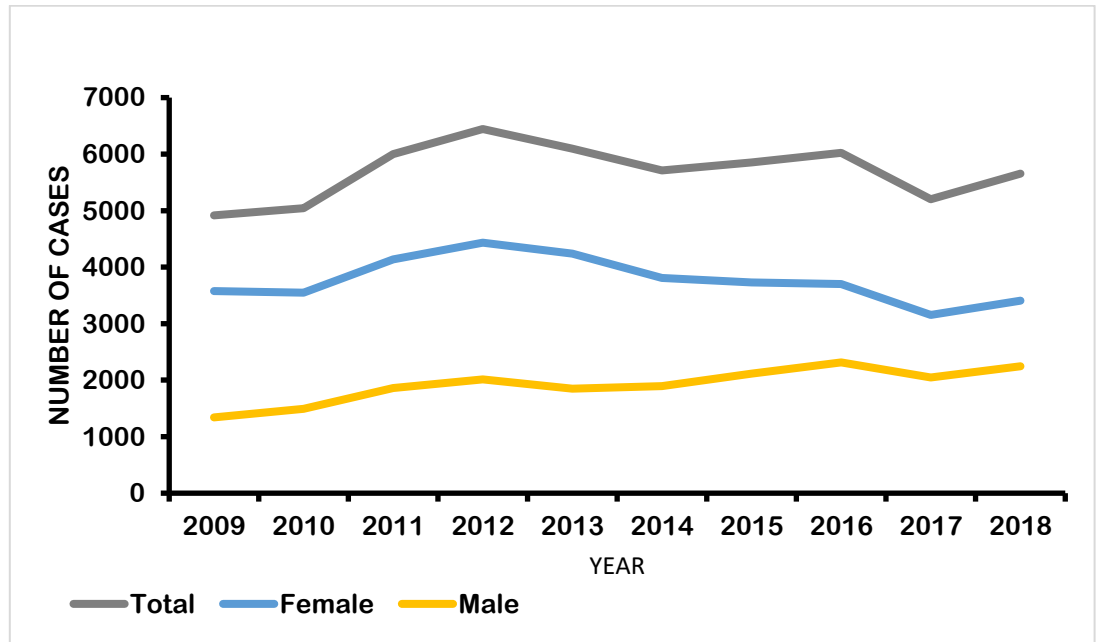


Figure 2: Incidence Rates* of Chlamydial Infection by Age Group and Sex in Allegheny County, 2018

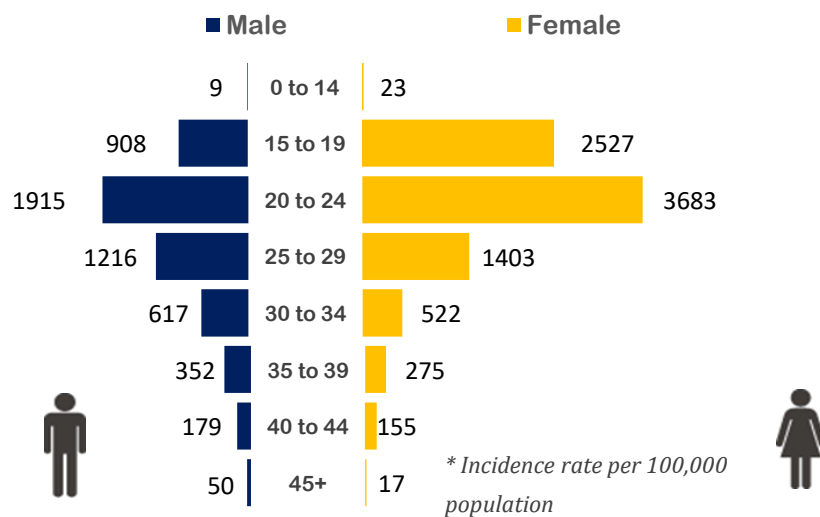


Table 1: Incidence Rates of Chlamydial Infection in United States, Pennsylvania and Allegheny County, 2009-2018*

Year	United States [#]	Pennsylvania [#]	Allegheny County
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	452.2	395.6	462.8
2015	475.0	418.1	475.2
2016	494.7	444.7	488.8
2017	524.6	441.5	423.1
2018	539.9	463.4	464.1

* Incidence per 100,000 population

[#] Source: CDC STD Surveillance Reports

Table 2: Reported Cases and Incidence Rates of chlamydia infection in Allegheny County, 2009-2018*

Year	Number of Reported Cases	Estimated Population [∞]	Incidence Rate*
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	5,708	1,233,480	462.8
2015	5,845	1,230,052	475.2
2016	6,014	1,230,360	488.8
2017	5,203	1,229,605	423.1
2018	5,655	1,218,452	464.1

* Incidence per 100,000 population

[∞] Based on U.S. Census Bureau estimated population data

Table 3: Reported Cases and Incidence Rates* of Chlamydial Infection by Sex in Allegheny County, 2017-2018

Gender	2017			2018		
	Reported Cases	Estimated Population [∞]	Rate*	Reported Cases	Estimated Population [∞]	Rate*
Female	3,154	636,428	495.6	3,407	629,556	541.2
Male	2,049	593,177	345.4	2,243	588,896	380.9
Unknown	0	n/a	n/a	5	n/a	n/a
Total	5,203	1,229,605	423.1	5,655	1,218,452	464.1

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 4: Reported Cases and Incidence Rates* of Chlamydial Infection by Race in Allegheny County, 2017-2018

Race	2017			2018		
	Reported Cases	Estimated Population [∞]	Rate*	Reported Cases	Estimated Population [∞]	Rate*
Black	2,508	158,779	1579.6	2,531	163,433	1548.6
White	1,329	987,932	134.5	1,367	975,555	140.1
Other	67	82,894	80.8	89	79,464	112.0
Unknown	1,299	n/a	n/a	1,668	n/a	n/a
Total	5,203	1,229,605	423.1	5,655	1,218,452	464.1

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 5: Reported Chlamydia Cases by Race in Allegheny County, 2014-2018

Race	2014	2015	2016	2017	2018
Black	3,065 (53.7%)	2,902 (49.6%)	2,782 (46.3%)	2,508 (48.2%)	2,531 (44.8%)
White	1,415 (24.8%)	1,518 (26.0%)	1,446 (24.0%)	1,329 (25.5%)	1,367 (24.2%)
Other	70 (1.2%)	92 (1.6%)	100 (1.7%)	67 (1.3%)	89 (1.6%)
Unknown	1,158 (20.3%)	1,333 (22.8%)	1,686 (28.0%)	1,299 (25.0%)	1,668 (29.5%)
Total	5,708	5,845	6,014	5,203	5,655

Table 6: Reported Cases of Chlamydial Infection by Age Group, Race and Sex in Allegheny County, 2018

Age Group	Black		White		Unknown		Other		Total		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Total
0-14	13	5	4	1	4	3	0	0	21	9	30
15-19	477	205	154	21	247	97	6	2	884	325	1,209
20-24	556	341	340	147	475	216	26	10	1397	714	2,111
25-29	275	257	176	159	197	147	11	17	659	580	1,239
30-34	95	127	77	97	63	67	3	1	238	292	530
35-39	45	46	27	58	34	30	0	6	106	140	246
40-44	16	20	14	19	17	19	4	0	51	58	109
45 +	17	36	13	59	21	27	0	3	51	125	176
Total	1,494	1,037	805	561	1,058	606	50	39	3,407	2,243	5,650*

*There were 5 individuals who were of unknown sex and thus not included in this table. Four were of unknown race (2 were 20-24, 1 25-29, 1 30-34) and one was white (20-24)

Figure 3: Rate of reported chlamydial infections by ZIP code of residence, Allegheny County, 2018

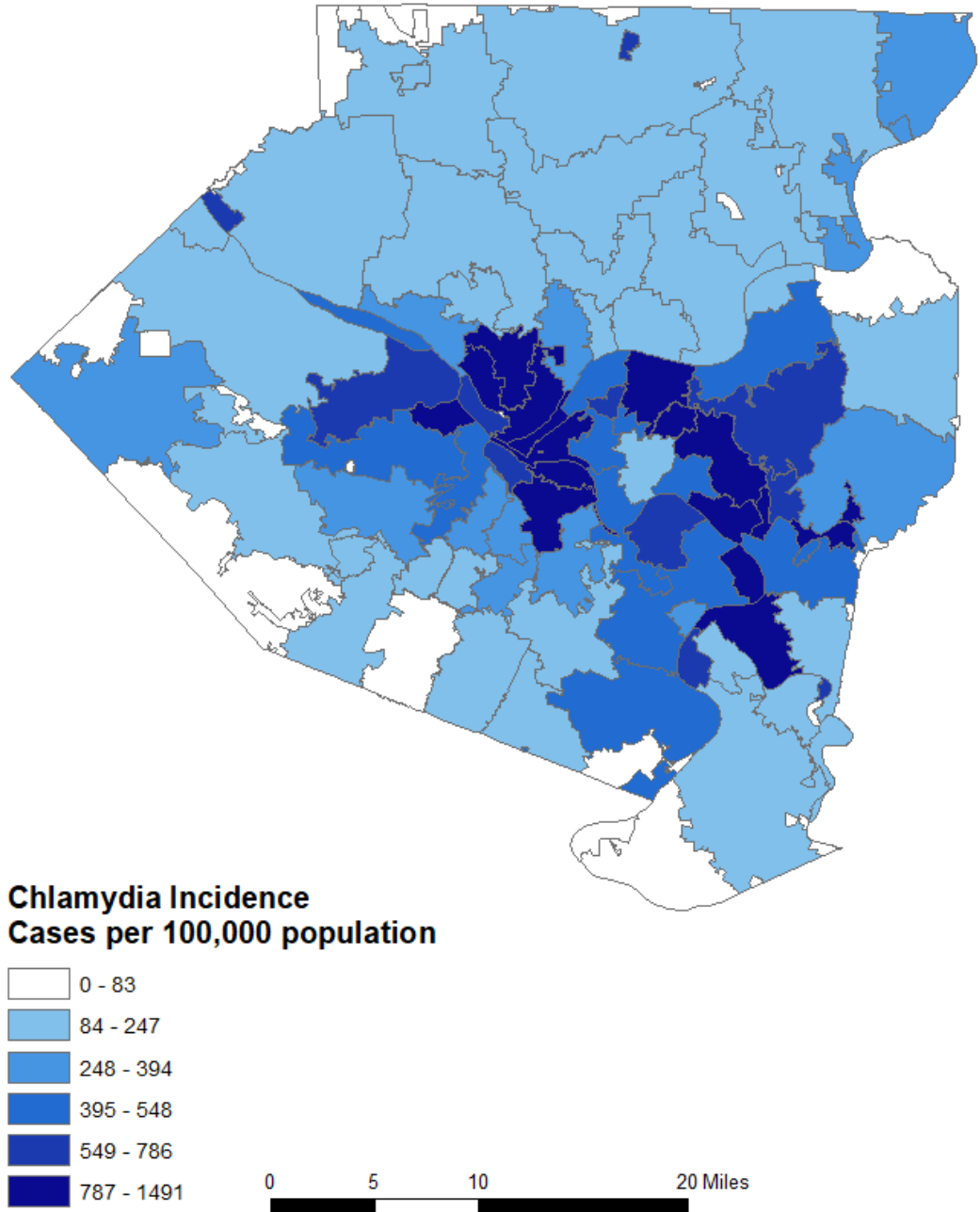


Table 7: Chlamydia Screening- ACHD and Affiliated Facilities, Allegheny County, 2013-2018

Clinic		Total* Screened	Total Positive	Positive %
2013	STD Clinic	11,475	1,257	11.0%
	All Others	11,188	796	7.1%
	2013 Total	22,663	2,053	9.1%
2014	STD Clinic	9,834	1,079	11.0%
	All Others	8,466	570	6.7%
	2014 Total	18,300	1,649	9.0%
2015	STD Clinic	7,154	805	11.3%
	All Others	11,050	756	6.8%
	2015 Total	18,204	1,561	8.6%
2016	STD Clinic	9,065	990	10.9%
	All Others	5,493	433	7.9%
	2016 Total	14,558	1,423	9.8%
2017	STD Clinic	9,232	987	10.7%
	All Others	4,120	316	7.7%
	2017 Total	13,352	1303	9.8%
2018	STD Clinic	7,053	752	10.7%
	All Others	3,116	270	8.7%
	2018 Total	10,169	1,022	10.1%

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 15-29 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 2018, 583,405 gonorrhea cases were reported to the CDC, a rate of 179.1 cases per 100,000, which represents an increase of 5% compared with 2017 (Table 8). This increase was observed across the nation in all age groups and in both males and females, but larger among males. In Pennsylvania, the rate was 124.1 cases per 100,000 population, a 4% increase from the 2017 rate of 119.0 cases per 100,000 population.

In Allegheny County, the incidence rate of gonorrhea increased by 16% from 2017 to 2018

In Allegheny County, the reported incidence of gonorrhea was much higher than in the state of PA during 2009-2018. Until 2017, the county rates for gonorrhea were higher than in the US. As in PA and the US, the number of gonorrhea cases increased in Allegheny County from 2017 to 2018 (Tables 8,9). During 2018, 2,057 cases were reported for a rate of 168.8 per 100,000 population, 16% higher than the 2017 rate of 145.6 cases per 100,000 population but similar to the rate observed in 2016 (164.3 per 100,000).

Gonorrhea by Sex and Age Group

From 2009-2014, more cases of gonorrhea were reported among females than in males in Allegheny County. However, starting in 2015, when the number of cases was approximately equal by sex, and continuing through to 2018, a shift occurred such that more reported cases now occur in males, with 63% of cases reported in 2018 occurring

in males. In Allegheny County gonorrhea incidence among males was 218.7 cases per 100,000 compared with 121.8 cases per 100,000 among females (Table 10). The rate of gonorrhea was highest among those 20-29 years old for males and 15-24 years old for females (Figure 5).

Gonorrhea by Race and ZIP Code

In Allegheny County in 2018, of 1,666 reported gonorrhea cases with known race, 1,079 (65%) were in the black population. For cases with known race, the incidence rate among blacks was nearly 12 times the rate among whites (660.2 and 56.3 cases per 100,000 population, respectively) (Table 11). However, the increase in incidence between 2017 and 2018 was more pronounced in the white population (25% increase) compared to the black population (0.3% increase). Education, outreach programs and effective targeted screening programs are important to decrease the morbidity in the black population.

Some areas of the city of Pittsburgh and immediately adjacent municipalities had the highest rates of reported gonorrhea in the county (Figure 6).

Gonorrhea Screening in Allegheny County

In 2018, 7,053 individuals were screened for gonorrhea in the STD Clinic and 3,116 were screened at other community sites supported by the ACHD's STD program. Among those screened at the STD clinic, 5.2% tested positive for gonorrhea, and at affiliated community sites, 2.1% tested positive for gonorrhea (Table 14).

Gonorrhea Data Figures and Tables

Figure 4: Number of Reported Gonorrhea Cases in Allegheny County, 2009-2018

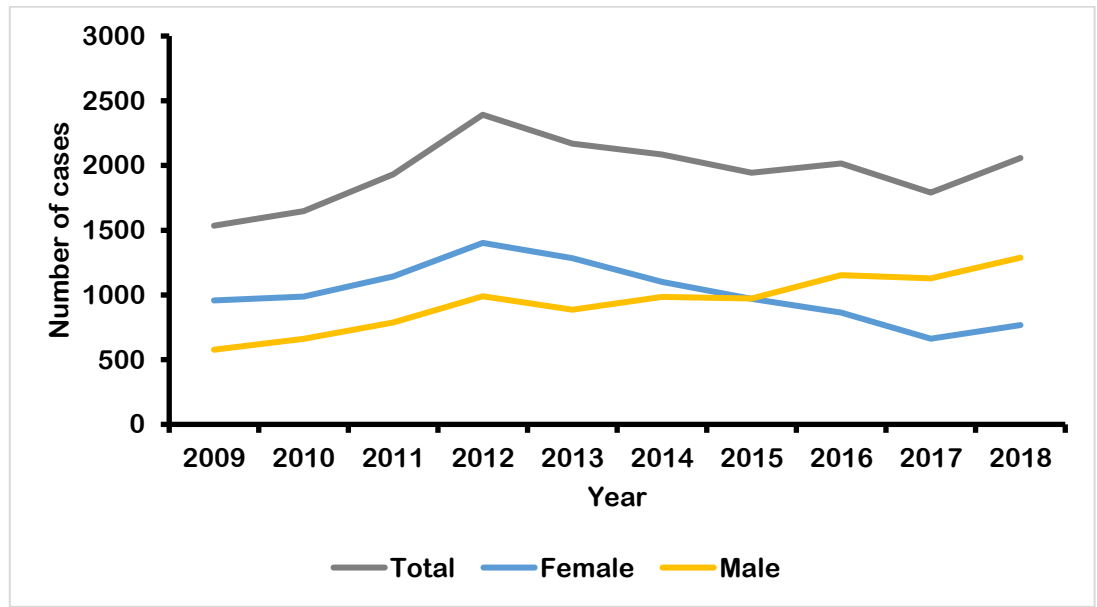
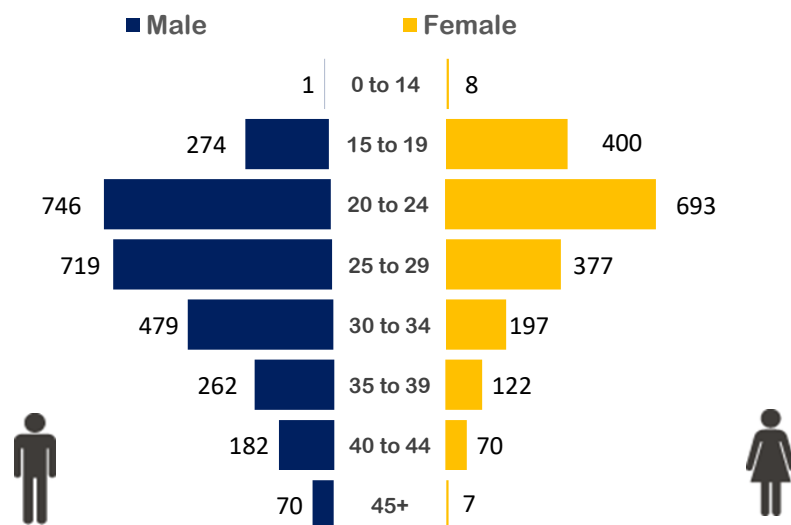


Figure 5: Incidence Rates* of Gonorrhea by Age Group and Sex in Allegheny County, 2018



* Incidence rate per 100,000 population

Table 8: Incidence Rates of Gonorrhea in United States, Pennsylvania and Allegheny County 2009-2018*

Year	United States [#]	Pennsylvania [#]	Allegheny County
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	109.8	99.4	169.0
2015	123.0	99.9	158.1
2016	145.0	114.2	164.3
2017	170.6	119.0	145.6
2018	179.1	124.1	168.8

* Incidence per 100,000 population

Source: CDC STD Surveillance Reports

Table 9: Reported Cases and Incidence Rates of Gonorrhea in Allegheny County, 2009-2018*

Year	Number of Reported Cases	Estimated Population [∞]	Incidence Rate*
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	2,016	1,230,360	163.8
2017	1,790	1,229,605	145.6
2018	2,057	1,218,452	168.8

* Incidence per 100,000 population

∞ Based on U.S. Census Bureau estimated population data

Table 10: Reported Cases and Incidence Rates* of Gonorrhea by Sex in Allegheny County, 2017-2018

Sex	2017			2018		
	Reported Cases	Estimated Population ^α	Rate*	Reported Cases	Estimated Population ^α	Rate*
Female	662	636,428	104.0	767	629,556	121.8
Male	1,128	593,177	190.2	1,288	588,896	218.7
Unknown	0	n/a	n/a	2	n/a	n/a
Total	1,790	1,229,605	145.6	2,057	1,218,452	168.8

*Incidence per 100,000 population

^αBased on U.S. Census Bureau estimated population data

Table 11: Reported Cases and Incidence Rates* of Gonorrhea by Race in Allegheny County, 2017-2018

Race	2017			2018		
	Reported Cases	Estimated Population ^α	Rate*	Reported Cases	Estimated Population ^α	Rate*
Black	1,045	158,779	658.1	1,079	163,433	660.2
White	444	987,932	44.9	549	975,555	56.3
Other	35	82,894	42.2	38	79,464	47.8
Unknown	266	n/a	n/a	391	n/a	n/a
Total	1,790	1,229,605	145.6	2,057	1,218,452	168.8

*Incidence per 100,000 population

^αBased on U.S. Census Bureau estimated population data

Table 12: Reported Gonorrhea Cases by Race in Allegheny County, 2014-2018

Race	2014	2015	2016	2017	2018
Black	1,416 (67.9%)	1,239 (63.7%)	1,229 (61.0%)	1,045 (58.4%)	1,079 (52.4%)
White	418 (20.1%)	418 (21.5%)	449 (22.3%)	444 (24.8%)	549 (26.7%)
Other	10 (0.5%)	22 (1.1%)	33 (1.6%)	35 (2.0%)	38 (1.8%)
Unknown	240 (11.5%)	265 (13.6%)	305 (15.1%)	266 (14.9%)	391 (19.0%)
Total	2,084	1,944	2,016	1,790	2,057

Table 13: Reported Cases of Gonorrhea by Age Group, Race and Sex in Allegheny County, 2018

Age Group	Black		White		Unknown		Other		Total		Total
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
0-14	4	1	2	0	1	0	0	0	7	1	8
15-19	95	63	19	14	25	20	1	1	140	98	238
20-24	153	145	53	72	53	54	4	7	263	278	541
25-29	104	173	35	98	35	58	3	14	177	343	520
30-34	57	98	23	87	10	38	0	4	90	227	317
35-39	18	43	21	31	8	29	0	1	47	104	151
40-44	11	25	8	16	4	18	0	0	23	59	82
45 +	11	77	4	66	6	31	0	3	20	178	198
Total	453	625	165	384	142	248	8	30	767	1,288	2,055*

* There were two individuals who were of unknown sex and thus not included in this table. One was of unknown race (age 20-24) and the other was black (age 25-29).

Figure 6: Rate of reported gonococcal infection by ZIP code of residence, Allegheny County, 2018

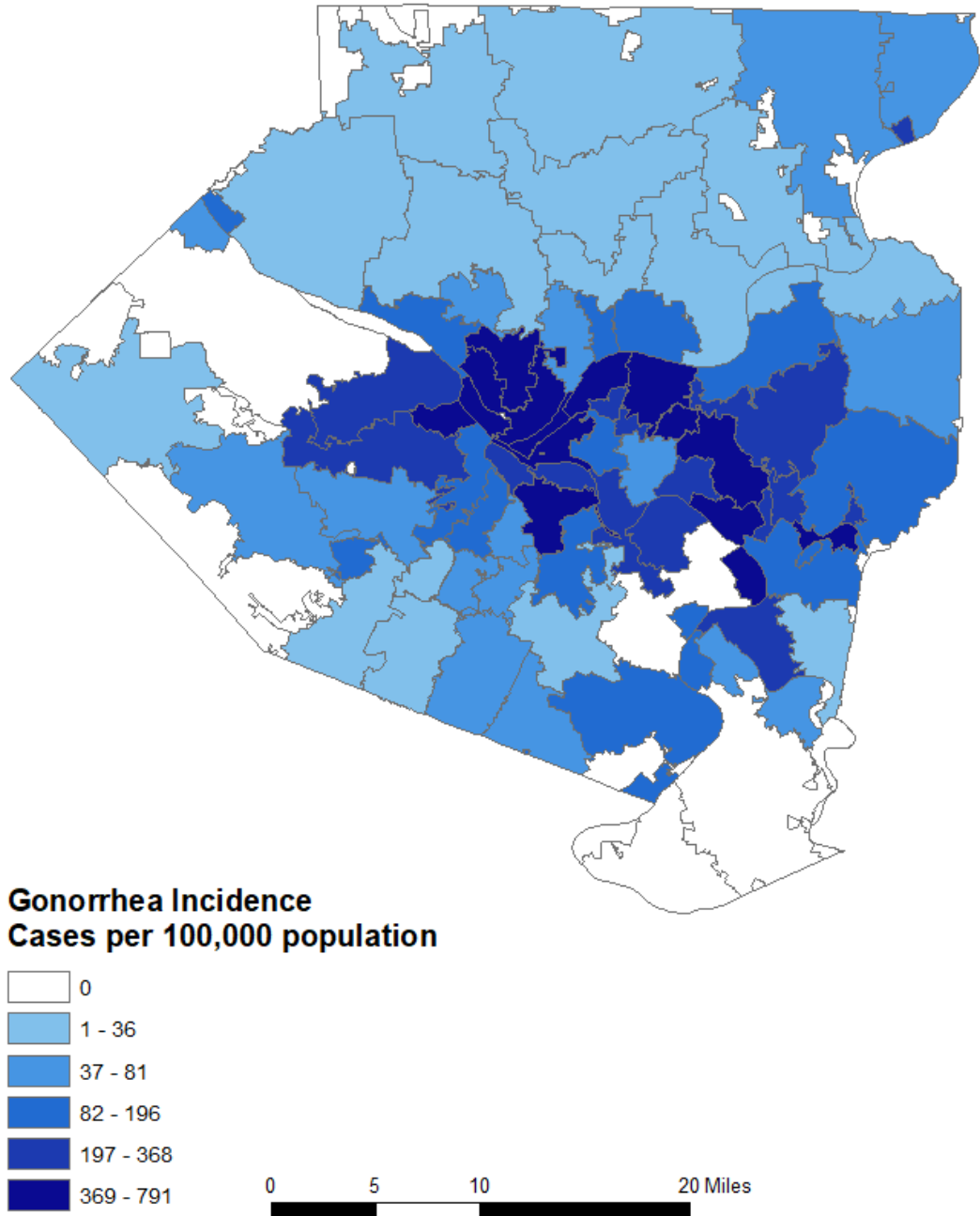


Table 14: Gonorrhea Screening, ACHD and Affiliated Facilities, Allegheny County 2013-2018

Clinic		Total Screened	Total Positive	Positive %
2013	STD Clinic	11,480	656	6.3%
	All Others	11,190	218	2.0%
	2013 Total	22,670	874	3.9%
2014	STD Clinic	9,834	379	3.9%
	All Others	8,466	151	1.8%
	2014 Total	18,300	530	2.9%
2015	STD Clinic	7,154	368	5.1%
	All Others	11,050	169	1.5%
	2015 Total	18,204	537	3.0%
2016	STD Clinic	9,065	474	5.2%
	All Others	5,493	119	2.2%
	2016 Total	14,558	593	4.1%
2017	STD Clinic	9,232	443	4.8%
	All Others	4,120	83	2.0%
	2017 Total	13,352	526	3.9%
2018	STD Clinic	7,053	368	5.2%
	All Others	3,116	65	2.1%
	2018 Total	10,169	433	4.3%

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.

Early Syphilis

Early syphilis includes all cases of syphilis that are early latent, primary, or secondary syphilis. In Allegheny County in the past 10 years, early syphilis peaked at 217 cases in 2015 (17.6 cases per 100,000 population) (Table 15, Figure 8). In 2018, there were 157 cases of early syphilis (12.9 cases per 100,000 population). This incidence rate was a 14% increase over the 2017 incidence rate of 11.3 cases per 100,000 population. Most of this increase was due to an increased number of early latent syphilis cases; there were 82 early latent syphilis cases in 2017 and 99 in 2018 (Table 16). Incidence rates of early syphilis were highest in men who were between 20 and 34 years old (Figure 7).

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 10.8 cases per 100,000 population in 2018, an increase of 15% over 2017 (Table 17). In Pennsylvania, there were 6.2 cases per 100,000 population, the same rate as in 2017 (Table 17). In Allegheny County during the past 10 years, syphilis peaked in 2015 with 127 cases of primary and secondary syphilis (Figure 8, Table 16). In 2018, 58 cases of primary and secondary syphilis were reported (4.8 cases per 100,000 population), compared to 57 cases in 2017 (4.6 cases per 100,000 population).

Syphilis by Age, Sex, Race and ZIP Code of Residence

Syphilis is far more common in men than women, with 54 (93%) of 58 P&S syphilis cases occurring in men (Table 18). The incidence rate of P&S syphilis in men (9.2 cases per 100,000 population) is 15 times higher than the incidence rate in women (0.6 cases per 100,000 population) (Table 18). Of 53 P&S syphilis cases with known race, 39 (74%) were in whites (Table 19). In contrast to chlamydia and gonorrhea, syphilis is not commonly reported among adolescents. Of the 58 cases of P&S syphilis reported in 2018, only 3 were younger than 20 years of age (Table 20). Syphilis cases by zip code of residence are shown in Figure 9. Each dot represents a case but is placed randomly within the ZIP code of residence (not at the actual address).

Risk factors associated with at least 10 cases of early syphilis are presented in Table 21. The most common risk factor was reported sex with a male in the past 12 months, which was reported by 117 of 159 early syphilis cases (74%) and 49 of 58 P&S syphilis cases (84%).

In 2018, 93% of reported P&S syphilis cases in Allegheny County were in men

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. The Pennsylvania Department of Health recommends that women who are pregnant be screened for syphilis three times: at the first prenatal visit, in the third trimester, and at the time of delivery. Prenatal screening is extremely important, as treatment in pregnancy may prevent congenital syphilis. During 2018, 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 in the control of syphilis. ACHD screens at designated sites throughout the county, focusing on at-risk individuals and pregnant women.

Syphilis Data Tables and Figures

Table 15: Reported Cases and Incidence Rates* of Early Syphilis[‡] in Allegheny County 2008-2018

Year	Number of Reported Cases	Estimated Population [∞]	Incidence Rate*
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	217	1,230,459	17.6
2016	177	1,230,360	14.4
2017	139	1,229,605	11.3
2018	157	1,218,452	12.9

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

[‡]Primary, Secondary and Early Latent Syphilis

Table 16: Early Syphilis[‡] Cases by Disease Category and Year of Diagnosis in Allegheny County, 2009-2018

Year	Primary	Secondary	Early Latent	Totals
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	87	90	217
2016	23	62	92	177
2017	18	39	82	139
2018	13	45	99	157

[‡]Primary, Secondary and Early Latent Syphilis

Figure 7: Incidence Rates* of Early Syphilis‡ by Age Group and Sex in Allegheny County, 2018

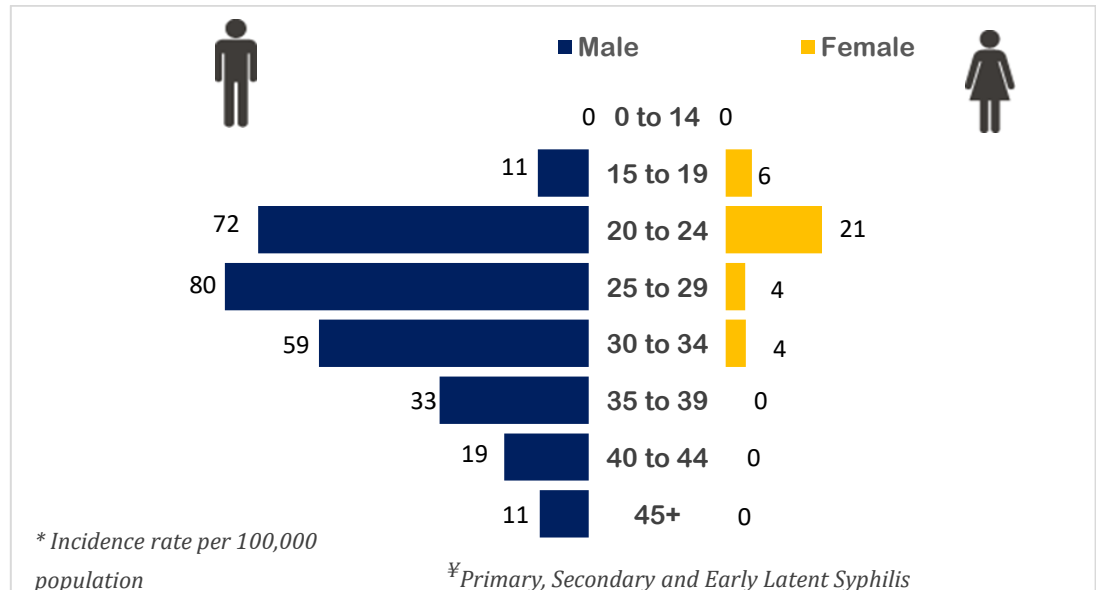


Figure 8: Number of Reported Syphilis Cases in Allegheny County, 2009-2018

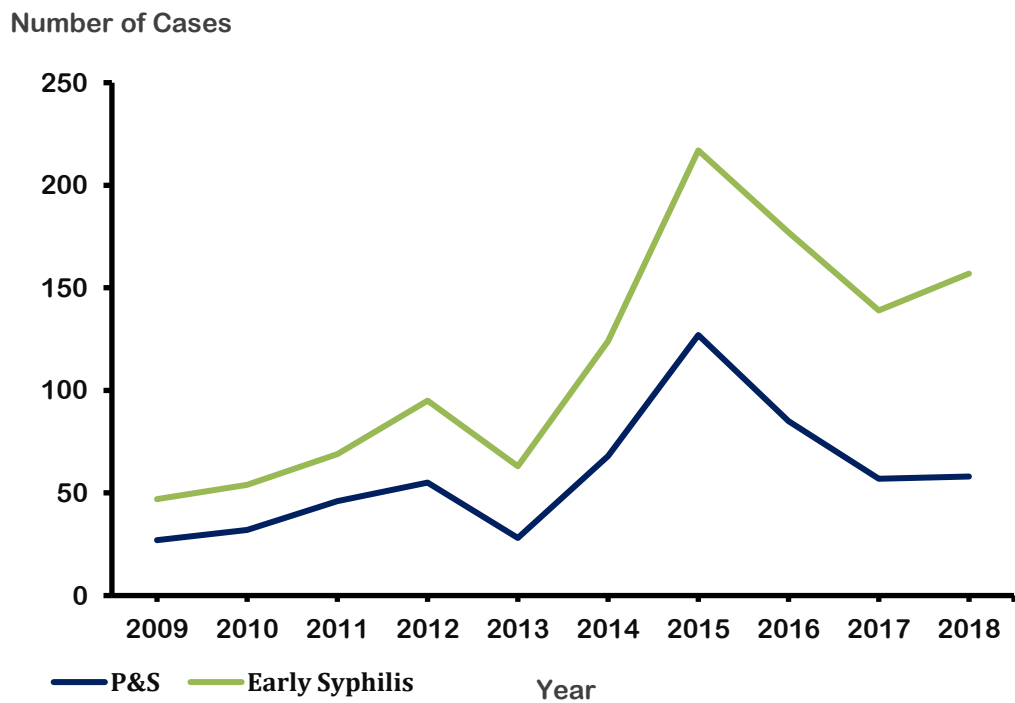


Table 17: Incidence Rates* of P&S Syphilis in United States, Pennsylvania and Allegheny County 2008-2018

Year	United States Incidence#	Pennsylvania Incidence#	Allegheny County Incidence# (Case #)
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	10.3(127)
2016	8.7	5.9	7.0 (85)
2017	9.2	6.2	4.6 (57)
2018	10.8	6.2	4.8 (58)

* Incidence per 100,000 population

Source: CDC STD Surveillance Reports

Table 18: Reported Cases and Incidence Rates* of P&S Syphilis by Sex in Allegheny County, 2017-2018

Gender	2017			2018		
	Reported Cases	Estimated Population [∞]	Rate*	Reported Cases	Estimated Population [∞]	Rate*
Female	4	636,428	0.6	4	629,556	0.6
Male	53	593,177	8.9	54	588,896	9.2
Total	57	1,229,605	4.6	58	1,218,452	4.8

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 19: Reported Cases and Incidence Rates* of P&S Syphilis by Race in Allegheny County, 2017-2018

Race	2017			2018		
	Reported Cases	Estimated Population [∞]	Rate*	Reported Cases	Estimated Population [∞]	Rate*
Black	10	158,779	6.3	8	163,433	4.9
White	41	987,932	4.2	39	975,555	4.0
Other	0	82,894	0.0	6	79,464	7.6
Unknown	6	n/a	n/a	5	n/a	n/a
Total	57	1,229,605	4.6	58	1,218,452	4.8

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 20: Reported Case of P&S Syphilis by Age Group, Race and Sex in Allegheny County – 2018

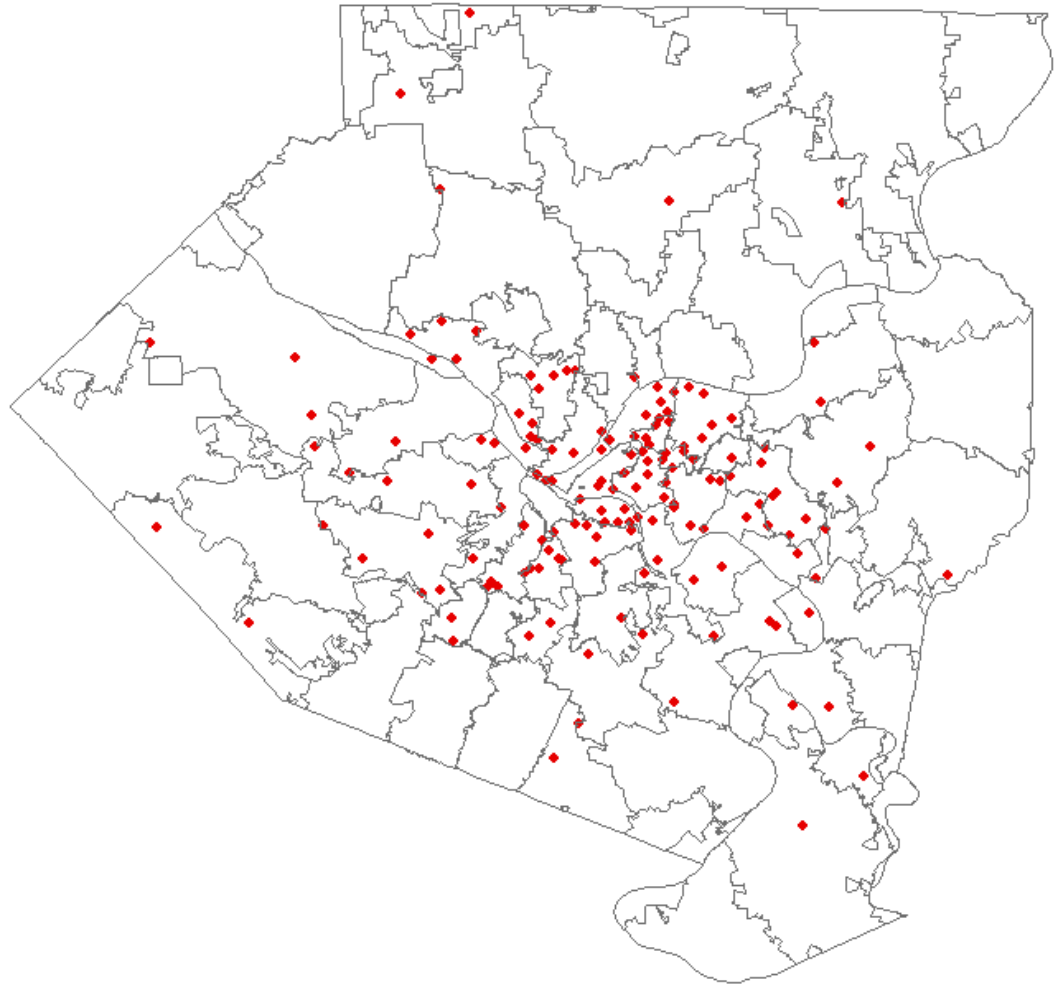
Age Group	Black		White		Other		Unknown		Total		Total
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
0-14	0	0	0	0	0	0	0	0	0	0	0
15-19	0	0	1	2	0	0	0	0	1	2	3
20-24	1	2	1	7	0	0	0	1	2	10	12
25-29	0	3	1	4	0	4	0	1	1	12	13
30-34	0	2	0	7	0	1	0	0	0	10	10
35-39	0	0	0	2	0	1	0	2	0	5	5
40-44	0	0	0	2	0	0	0	0	0	2	2
45 +	0	0	0	12	0	0	0	1	0	13	13
Total	1	7	3	36	0	6	0	5	4	54	58

Table 21: Risk factors associated with at least 10 cases of Early Syphilis[&] in Allegheny County – 2018 (n=157 Early Syphilis; n= 58 P&S Syphilis)

Risk Factor	Early Latent	Primary	Secondary	Total
Sex with a male (last 12 months)	68	11	38	117
Sex- oral (last 12 months)	64	10	34	108
Sex with MSM in the last 12 months	63	11	32	106
Previously tested for HIV	69	7	23	99
Past history of STDs	67	4	27	98
Multiple sex partners (last 12 months)	55	10	29	94
Sex- anal (last 12 months)	51	10	28	89
Sex with an anonymous partner (last 12 months)	43	7	23	73
Use of non-injection drugs (last 12 months)	41	4	18	63
Sex with partner picked-up on internet (last 12 months)	34	6	19	59
If used drugs, sex while high/intoxicated on drugs/alcohol	24	3	10	37
Enrolled in PrEP	20	4	7	31
Sex- vaginal (last 12 months)	13	0	8	21
Sex with a partner infected with HIV/AIDS (last 12 months)	7	1	4	12
Use of sexual enhancement drugs (last 12 months)	7	1	4	12
Sex with an injection drug user (last 12 months)	9	0	3	12
Sex with a female (last 12 months)	6	0	6	12
Ever had tattoo	6	0	4	10

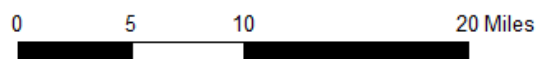
[&]Data based on self-reporting

Figure 9: Syphilis cases by ZIP code of residence, Allegheny County, 2018



**Syphilis Cases
(placed randomly within individual ZIP codes)**

1 dot = 1 case



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. Treatment with antiretroviral therapy (ART) can delay the onset of symptoms of AIDS for many years by reducing the amount of virus present in the blood and can prevent transmission of HIV to others.

HIV Incidence

In Allegheny County the cumulative number of HIV cases reported from 1981 through December 2018 is 4,983. In 2018, there were 85 newly diagnosed cases of HIV reported in Allegheny County, 6 fewer than reported in 2017 and a decline of 54 from the recent peak of 139 cases reported in 2015 (Figure 10, Table 22). Most (87%) newly diagnosed infections occurred in males (Table 23, Figure 11). There were twice as many cases among blacks (50) compared to whites (24) reported in 2018, and the incidence rate among black men was far greater than the rate observed in white men (59.4 versus 4.1 per 100,000 population) (Table 23). The incidence rate among Hispanic men was also high (37.1) with 5 cases among a small Hispanic population. In women, 6 (55%) of the 11 new HIV infections were among blacks (Table 23). Most new infections (61%) occurred among men who have sex with men, 9% among persons with a history of intravenous drug use (IVDU), and 5% among heterosexual persons (Table 24). No cases of pediatric HIV were reported in Allegheny County in 2018 (Figure 11).

AIDS Incidence

In 2018 there were 30 newly diagnosed cases of AIDS reported in Allegheny County, an increase from the 26 cases reported in 2017, but the second lowest annual number observed over the past decade (Table 25, Figure 12). Twenty-five (83%) of new AIDS cases were in males (Table 26). Blacks were the most affected race, with 20 (67%) of all cases (Table 26); three cases (10%) were reported among the Hispanic population. The incidence rate of AIDS among black males and Hispanic males was similar (22.9 vs 22.3 per 100,000 population) (Table 26). Currently, there are 3,180 individuals living with AIDS in Allegheny County (Table 27).

HIV/AIDS Figures and Tables

Figure 10: Number of Reported HIV Cases in Allegheny County, 2009-2018

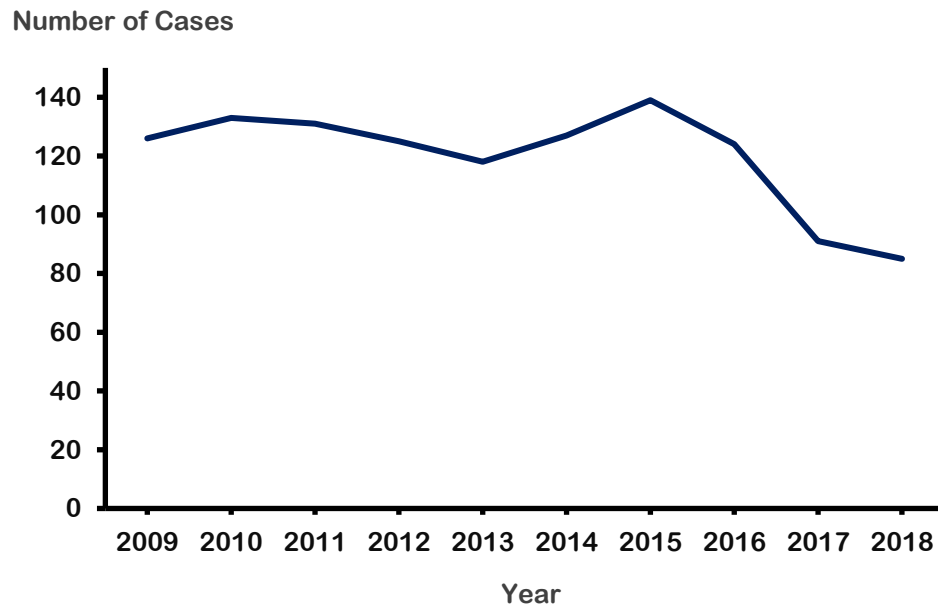


Table 22: Reported HIV Cases and Incidence Rates* in Allegheny County, 2009-2018

Year	New Cases	Estimated Population [∞]	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	118	1,231,527	9.6
2014	127	1,231,255	10.3
2015	139	1,230,459	11.3
2016	124	1,230,360	10.1
2017	91	1,229,605	7.4
2018	85	1,218,452	7.0

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 23: Newly Reported HIV Cases and Incidence Rates* by Sex and Race/Ethnicity in Allegheny County, 2018

Race/Ethnicity	Male	Estimated Population [∞]	Rate*	Female	Estimated Population [∞]	Rate*	Total Cases
Black (non-Hispanic)	44	74,084	59.4	6	86,435	6.9	50
White (non-Hispanic)	19	463,398	4.1	5	491,542	1.0	24
Hispanic	5	13,469	37.1	0	13,093	0.0	5
Other	3	37,945	7.9	0	38,486	0.0	3
Total	74	588,896	12.6	11	629,556	1.7	85

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Figure 11: HIV Cases by Age Group and Sex in Allegheny County, 2018

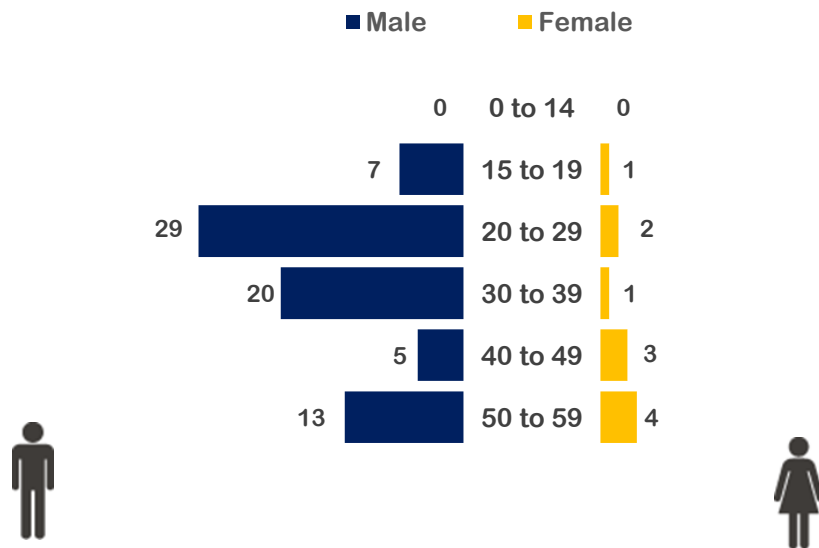


Table 24: Mode of Transmission, Newly Reported HIV Cases, 2018 (n=85)

Category	Number of Cases n (%)
Men who have sex with men (MSM)	52 (61.1)
IDU	8 (9.4)
Heterosexuality	4 (4.7)
MSM & IDU	0 (0.0)
Other/Unknown	21 (24.7)

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

Figure 12: Number of Reported AIDS Cases in Allegheny County, 2009-2018

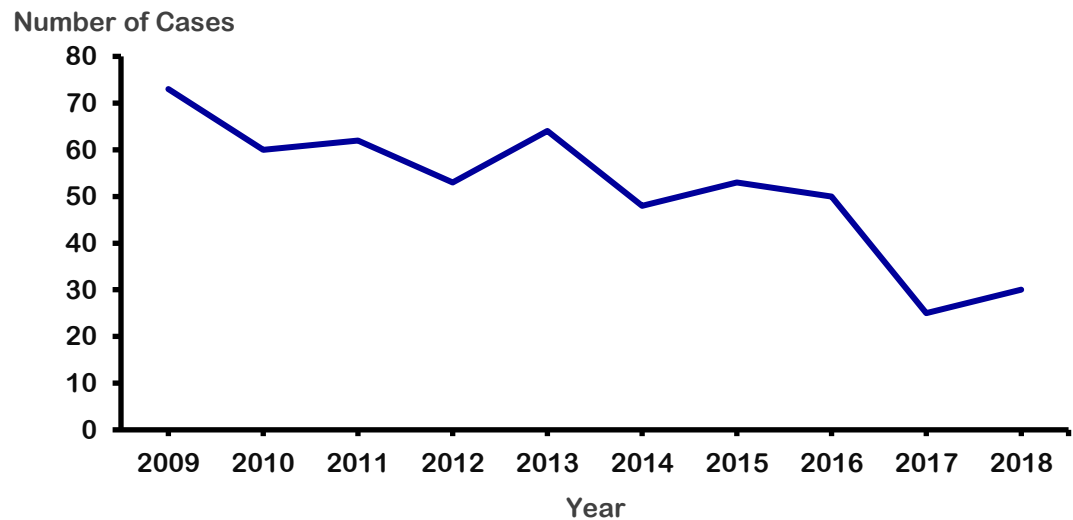


Table 25: Reported Adult AIDS Cases and Incidence Rates* in Allegheny County, 2009-2018

Year	Reported Cases	Estimated Population [∞]	Incidence Rate*
2009	73	1,218,494	6.0
2010	60	1,223,348	4.9
2011	62	1,227,442	5.1
2012	53	1,229,338	4.3
2013	64	1,231,527	5.2
2014	48	1,231,255	3.9
2015	53	1,230,459	4.3
2016	50	1,230,360	4.1
2017	25	1,229,605	2.0
2018	30	1,218,452	2.5

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 26: AIDS Reported Cases and Incidence Rates* by Sex and Race/Ethnicity in Allegheny County, 2018

Race/ Ethnicity	Male	Estimated Population [∞]	Rate*	Female	Estimated Population [∞]	Rate*	Total Cases
Black (non- Hispanic)	17	74,084	22.9	3	86,435	3.4	20
White (non- Hispanic)	2	463,398	0.4	2	491,542	0.4	4
Hispanic	3	13,469	22.3	0	13,093	0.9	3
Other	3	37,945	7.9	0	38,486	0.0	3
Total	25	588,896	4.2	5	629,556	0.8	30

*Incidence per 100,000 population

[∞]Based on U.S. Census Bureau estimated population data

Table 27: AIDS Prevalence by Sex and Race in Allegheny County, 2018

Race	Male	Female	Total
Black (non-Hispanic)	989	349	1,338
White (non-Hispanic)	1,509	131	1,640
Hispanic	59	7	66
Other	119	17	136
Total	2,676	504	3,180

HIV Co-infection

For all newly diagnosed cases of chlamydia, gonorrhea, and syphilis, data on co-infection with HIV was collected. Individuals with either an existing or new HIV diagnosis in addition to newly diagnosed syphilis/gonorrhea/chlamydia were considered co-infected.

Rates of co-infection with HIV among newly diagnosed chlamydia cases have been steadily increasing, from 1.3% in 2013 to 3.1% in 2018 (Table 28). Rates of co-infection among new gonorrhea cases are generally higher than those among new chlamydia cases and also are generally increasing, from 4.6% in 2013 to 7.7% in 2018 (Table 28). Rates of HIV co-infection among new syphilis cases were the highest of any STD in 2018, with 34.6% of those with early syphilis being co-infected with HIV. However, co-infection with HIV among those with early syphilis has generally been on the decline (with slight year-to-year variation); 49.2% of new early syphilis cases in 2013 were co-infected with HIV (Table 28).

The high rates of HIV co-infection among people with STDs carries important health concerns. Having HIV and another STD may increase the risk of HIV transmission to HIV-uninfected sexual partners. Choosing less-risky sexual behaviors, including reducing the number of sexual partners, avoidance of sex under the influence of alcohol or drugs, and consistent condom use are important steps to reduce to risk of STDs and HIV.

HIV Co-infection Figures and Tables

Table 28: Percentage of those with Chlamydia, Gonorrhea, and Syphilis co-infected with HIV in Allegheny County, 2013-2018

Disease	2013	2014	2015	2016	2017	2018
Chlamydia	1.3%	1.9%	2.0%	2.4%	2.6%	3.1%
Gonorrhea	4.6%	5.1%	6.4%	6.7%	8.3%	7.7%
Early Syphilis [‡]	49.2%	37.9%	46.8%	44.8%	31.9%	34.6%

[‡]Primary, Secondary and Early Latent Syphilis

Risk Reduction Guide

SCREENING

- Get tested for HIV and other STDs on a regular basis. A brief overview of STD testing recommendations can be found at:

<https://www.cdc.gov/std/prevention/screeningreccs.htm> .

- The CDC recommends that everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine health care. For those with specific risk factors, the CDC recommends getting tested for HIV at least once a year.

- Free, confidential HIV and STD screening is available at the ACHD STD health clinic and other organizations throughout the County:

<https://www.alleghenycounty.us/Health-Department/Health-Services/STD-and-HIV-AIDS-Program/index.aspx>

http://www.aidsfreepittsburgh.org/hiv_testing.php

PREVENTION

Use Condoms

- If you decide to have sex, use a new latex condom and lubricant for each act of intercourse. The condom forms a barrier between you and your partners' sexual fluids that may transmit HIV or other STDs. Consistent and correct use of condoms provides a high level of protection.

- Free condoms are available for community organizations through the ACHD Condom Distribution Program (<https://www.alleghenycounty.us/Health-Department/Health-Services/STD-and-HIV-AIDS-Program/Condom-Distribution-Program.aspx>) and can be obtained at the ACHD Public Health Clinic, emailing CDP@alleghenycounty.us or calling 412-578-8343.

PrEP to Prevent HIV

- Pre-Exposure Prophylaxis (PrEP) is a medication that is taken daily to lower chances of getting HIV. It is designed for individuals who are at high risk for getting HIV. Taking PrEP before you are exposed to HIV can reduce your risk of contracting the disease.

- Taking PrEP daily reduces the risk of getting HIV from sex by more than 90%. Among people who inject drugs, it reduces the risk by more than 70%. Your risk of getting HIV from sex can be even lower if you combine PrEP with condoms and other prevention methods.

- For more information on PrEP, visit the PrEP Pittsburgh website (<http://preppgh.com>) or contact the ACHD STD/HIV Health Educator by calling 412-578-8343.

Use Sterile Syringes and Works

- People who use drugs can access sterile injection supplies through Prevention Point Pittsburgh's syringe exchange program at various 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.

TREATMENT

- In recent years, an overwhelming body of clinical evidence has firmly established the HIV Undetectable=Untransmittable, or U=U, concept as scientifically sound. U=U means that people with HIV who achieve and maintain an undetectable viral load—the amount of HIV in the blood—by taking antiretroviral therapy (ART) daily as prescribed cannot sexually transmit the virus to others (<https://www.nih.gov/news-events/news-releases/science-clear-hiv-undetectable-equals-untransmittable>).
- Other STDs: If you test positive, getting an STD is not the end! Many STDs are curable and all are treatable. If either you or your partner is infected with an STD that can be cured, both of you need to start treatment immediately to avoid getting re-infected.

Glossary

ASYMPTOMATIC	Having no signs or symptoms of a disease. Many STDs are asymptomatic at some time during the phase of the disease process.
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 infertility 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 with or 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 initial lesions have disappeared. Secondary syphilis can cause a broad spectrum of skin conditions including various rashes, mucous patches, and loss of hair. Secondary syphilis will also disappear with or without treatment. 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 and at delivery. 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