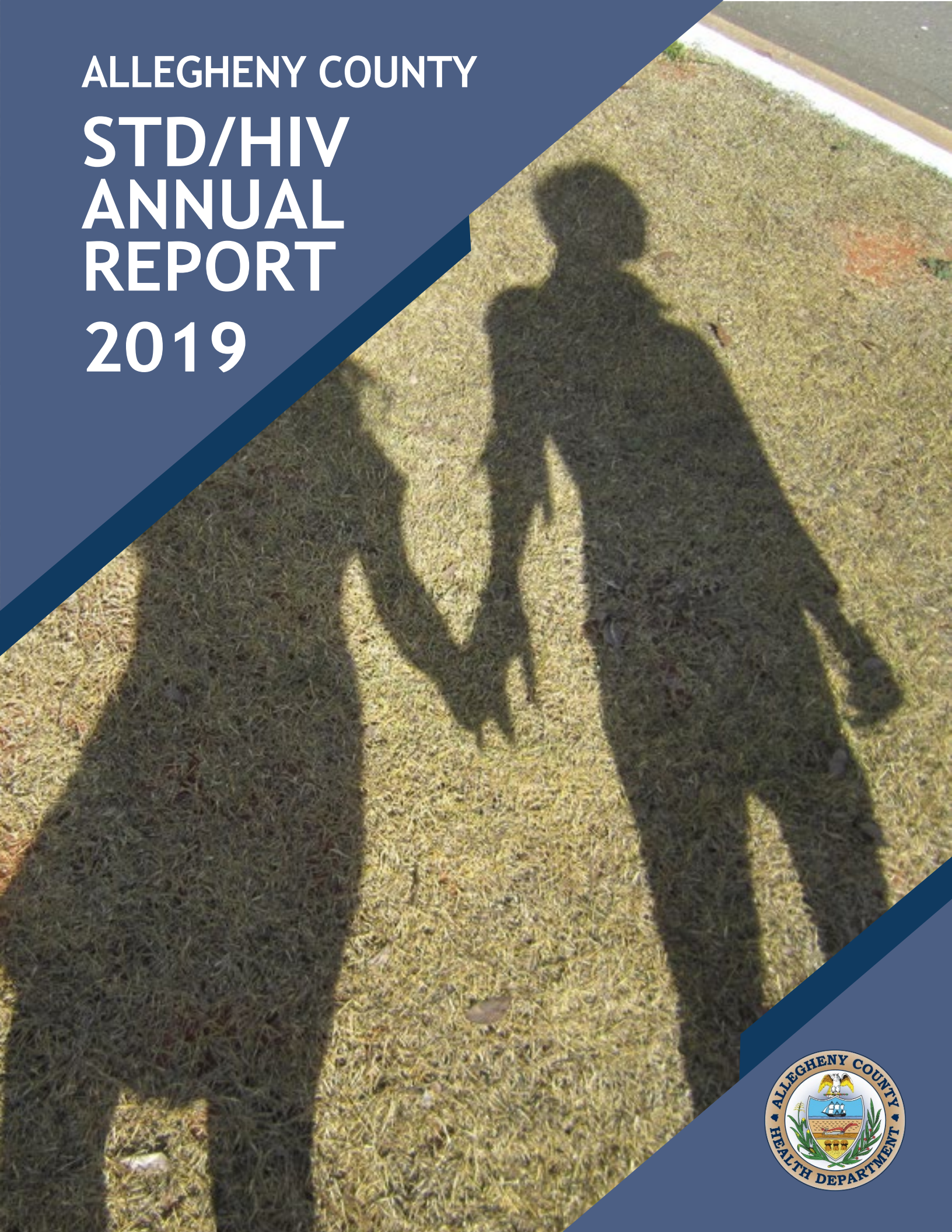
ALLEGHENY COUNTY

STD/HIV ANNUAL REPORT 2019



ALLEGHENY COUNTY HEALTH DEPARTMENT

ALLEGHENY COUNTY STD/HIV ANNUAL REPORT 2019

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STD data supplied by
Pennsylvania Department of Health (PA DOH)

and

Centers for Disease Control and Prevention (CDC)

Population data supplied by
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Allegheny County Health Department's Administration Building in downtown Pittsburgh

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 over 26 million new cases of STDs occur in the United States each year.[1] The direct medical costs of STDs to our healthcare system are approximately $16 billion.[2] 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 2019. 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 6,281 cases reported in 2019. The rate of 516.5 cases per 100,000 in 2019 represents an 11% increase from 2018. Chlamydial infections disproportionately affect blacks with a rate 13 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 2019, there were 1,908 cases of gonorrhea reported in Allegheny County for a rate of 156.9 per 100,000 population, a decrease of 7% over the 2018 rate of 168.8 per 100,000 population in 2018. The rate of gonococcal infections was 11 times greater among blacks than whites among cases with known race. The 20- 29 year age group accounts for about half (49%) of all reported infections.

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[1] Kriesel K, Spicknall IH, Garganoet JW al. Sexually Transmitted Infections Among US Women and Men: Prevalence and Incidence Estimates, 2018. Sexually Transmitted Diseases 2021:,DOI:10.1097/OLQ.0000000000001355

[2] Owusu-Edusei K, Chesson HW, Gift TL et al. The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008.Sexually Transmitted Diseases 2013; 40(3): 197-201

After a few years of decrease or no change, the rate of primary and secondary (P&S) syphilis increased in 2019.The rate in 2019 was 5.8 per 100,000 (71 cases), a 21% increase over the 2018 rate of 4.8 per 100,000 (58 cases). In 2019, 69 (97%) cases of P&S syphilis were in males. The rate of early syphilis (primary, secondary and early latent) also increased by 16% to 15.0 per 100,000 (183 cases), an increase from the 2018 rate of 12.9 per 100,000 (157 cases).

In 2019 there were 94 new HIV infections reported in Allegheny County, 12 more than in 2018 (7.7 versus 6.7 cases per 100,000). Most of this increase was due to an increase in cases among women, with 18 cases among women in 2019 compared to 8 in 2018. Additionally, there was a large increase in the number of AIDS cases reported in 2019, with 33 cases in 2019 compared to 20 cases in 2018.

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 isessential to increase public awareness and reduce the burden of STDs and HIV/AIDs in Allegheny County.

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Director, STD Program
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Abbreviations

ACHD	Allegheny County Health Department
AIDS	Acquired Immunodeficiency Syndrome
CDC	Centers for Disease Control and Prevention
CT	*Chlamydia trachomatis*
GC	*Neisseria gonorrhoeae*
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

CHLAMYDIAL INFECTION

Chlamydial Infection

Chlamydia trachomatis (CT) is the most commonly reported notifiable bacterial STD in both Allegheny County and the United States. At the time of writing, the CDC has not yet released national STD data for 2019. It is estimated that nearly 4 million infections occur annually in the US, but many infections remain undetected and untreated because they are asymptomatic.[3] Symptoms of chlamydia are often mild or absent, but 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.[3,4]

MANY CHLAMYDIAL INFECTIONS REMAIN UNDETECTED AND UNTREATED BECAUSE A LARGE PROPORTION OF INFECTED INDIVIDUALS ARE ASYMPTOMATIC.

IN 2019 THE RATE OF CHLAMYDIAL INFECTIONS IN ALLEGHENY COUNTY INCREASED BY 11% COMPARED TO 2018.

Incidence Rates of Chlamydia

The incidence of chlamydia in Allegheny County increased in 2019 (Figure 1). The rate of cases 516.5 per 100,000 in 2019 represents an 11% increase from 464.1 per 100,000 in 2018 (Figure 1, Tables 1, 2).

Chlamydia Cases by Sex and Age Group

During 2019, 59% of reported chlamydia cases were in females (Figure 2, Table 3). The incidence rate among women (595.3 cases per 100,000 females) in Allegheny County was approximately 38% higher than the rate among men (432.0 cases per 100,000 males), reflecting a larger number of women screened for CT in accordance with screening guidelines.[4]

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 2019 were among those aged 15–24 years, accounting for 67% 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 56% of all male cases.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 sexual risk behavior.

ADOLESCENTS AND YOUNG ADULTS ARE AT HIGHEST RISK FOR ACQUIRING CHLAMYDIA.

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[3]CDC. STD Facts – Chlamydia. https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm Accessed Dec 2, 2019

[4]CDC. 2105 Sexually Transmitted Diseases Treatment Guidelines: Chlamydial Infections. https://www.cdc.gov/std/tg2015/chlamydia.htm Accessed April 9, 2021

Chlamydia cases by race and zip code of residence

Chlamydia incidence rates were highest among blacks in 2019 (Table 4). For reported cases with known race, the rate among blacks (1,736.9 cases per 100,000 population) was nearly 13 times the rate among whites (137.8 cases per 100,000 population). For most cases of chlamydia, gonorrhea and syphilis, ethnicity is unknown and not includedin this report.

Black females in the 15-24-year age group are disproportionately affected by chlamydial infection, representing 18% of all 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. The three ZIP codes with highest rates of chlamydial infection were 15222 (Downtown/Strip District), 15112 (East Pittsburgh/Chalfant), and 15104 (Braddock, North Braddock, Rankin).

CHLAMYDIA INCIDENCE RATES ARE NEARLY 13 TIMES HIGHER IN BLACKS THAN IN WHITES.

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 2019, 7,096 patients were screened for CT at the ACHD STD clinic and 3,111 at affiliated screening sites countywide (Table 7). Among those screened at the STD clinic, 10.2% tested positive for chlamydia, and at affiliated community sites, 8.7% tested positive (Table 7).

Chlamydia Data Figures and Tables

Figure 1: Number of Reported Chlamydia Cases in Allegheny County, 2010-2019

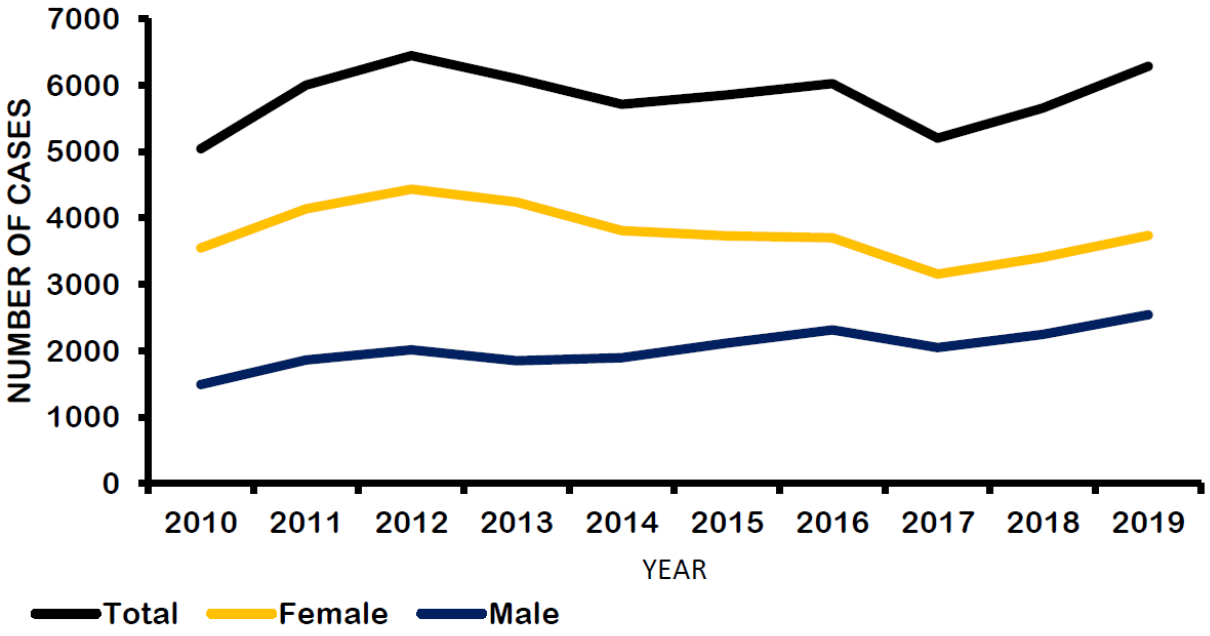


Figure 2: Incidence Rates* of Chlamydial Infection by Age Group and Sex in Allegheny County, 2019

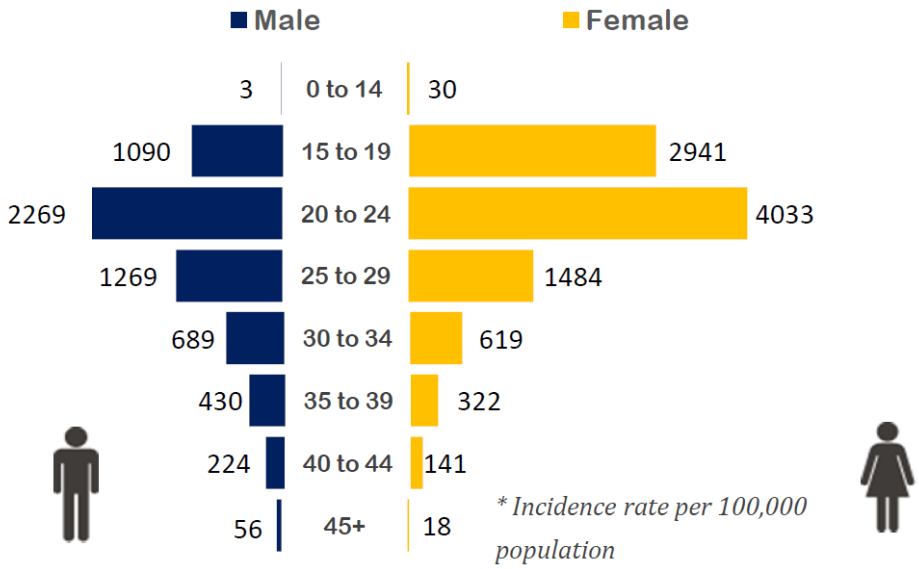


Table 1: Incidence Rates* of Chlamydial Infection in United States, Pennsylvania and Allegheny County, 2010-2019

Year	United States#	Pennsylvania#	Allegheny County
2010	423.6	374.1	412.1
2011	457.6	416.3	488.7
2012	456.7	431.6	523.5
2013	446.6	407.8	494.0
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
2019	552.8	482.2	516.5

** Incidence per 100,000 population*

 # Source: CDC STD Surveillance Reports

Table 2: Reported Cases and Incidence Rates* of Chlamydia Infection in Allegheny County, 2010-2019

Year	Number of Reported Cases	Estimated Population∝	Incidence Rate*
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
2019	6,281	1,216,045	516.5

**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, 2018-2019

Gender	2018			2019		
	Reported Cases	Estimated Population∝	Incidence Rate**	Reported Cases	Estimated Population∝	Incidence Rate**
Female	3,407	629,556	**541.2**	3,736	627,610	**595.3**
Male	2,243	588,896	**380.9**	2,542	588,435	**432.0**
Unknown	5	n/a	**n/a**	3	n/a	**n/a**
Total	5,655	1,218,452	**464.1**	6,281	1,216,045	**516.5**

∝Based on U.S. Census Bureau estimated population data; n/a= not available

***Incidence per 100,000 population*

Table 4: Reported Cases and Incidence Rates of Chlamydial Infection by Race in Allegheny County, 2018-2019

Race	2018			2019		
	Reported Cases	Estimated Population∝	Incidence Rate**	Reported Cases	Estimated Population∝	Incidence Rate**
Black	2,549	157,323	**1,620.2**	2,838	163,394	**1,736.9**
White	1,387	971,262	**142.8**	1,338	971,169	**137.8**
Other	102	89,867	**113.5**	142	81,482	**174.3**
Unknown	1,617	n/a	**n/a**	1,963	n/a	**n/a**
Total	5,655	1,218,452	**464.1**	6,281	1,216,045	**516.5**

∝Based on U.S. Census Bureau estimated population data; n/a= not available

***Incidence per 100,000 population*

Table 5: Reported Chlamydia Cases by Race in Allegheny County, 2015-2019

Race	2015	2016	2017	2018	2019
Black	2,913 (49.8%)	2,782 (46.3%)	2,508 (48.2%)	2,549 (45.1%)	2,838 (45.2%)
White	1,542 (26.4%)	1,452 (24.1%)	1,335 (25.7%)	1,387 (24.5%)	1,338 (21.3%)
Other	98 (1.7%)	108 (1.8%)	75 (1.4%)	102 (1.8%)	142 (2.3%)
Unknown	1,292 (22.1%)	1,672 (27.8%)	1,285 (24.7%)	1,617 (28.6%)	1,963 (31.3%)
Total	**5,845**	**6,014**	**5,203**	**5,655**	**6,281**

Table 6: Reported Cases of Chlamydial Infection by Age Group, Race and Sex in Allegheny County, 2019

Age Group	Black		White		Unknown		Other		Total		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Total
0-14	17	2	5	0	6	1	0	0	28	3	**31**
15-19	514	243	161	33	318	101	17	3	1,010	380	**1,390**
20-24	593	382	313	163	555	265	37	28	1,498	837	**2,335**
25-29	328	269	144	137	193	168	17	21	682	595	**1,277**
30-34	121	136	73	109	89	83	6	8	289	335	**624**
35-39	57	56	25	73	44	46	1	2	127	177	**304**
40-44	23	32	11	22	13	19	0	2	47	75	**122**
45 +	24	41	15	54	16	43	0	2	55	140	**195**
Total	**1,677**	**1,161**	**747**	**591**	**1,234**	**726**	**78**	**66**	**3,736**	**2,542**	**6,278 ***

**There were 3 individuals who were of unknown sex and thus not included in this table. All 3 were of unknown race, two were age 20-24 and one was age 35-39.*

Figure 3: Rate of reported Chlamydial Infections by ZIP code of residence, Allegheny County, 2019

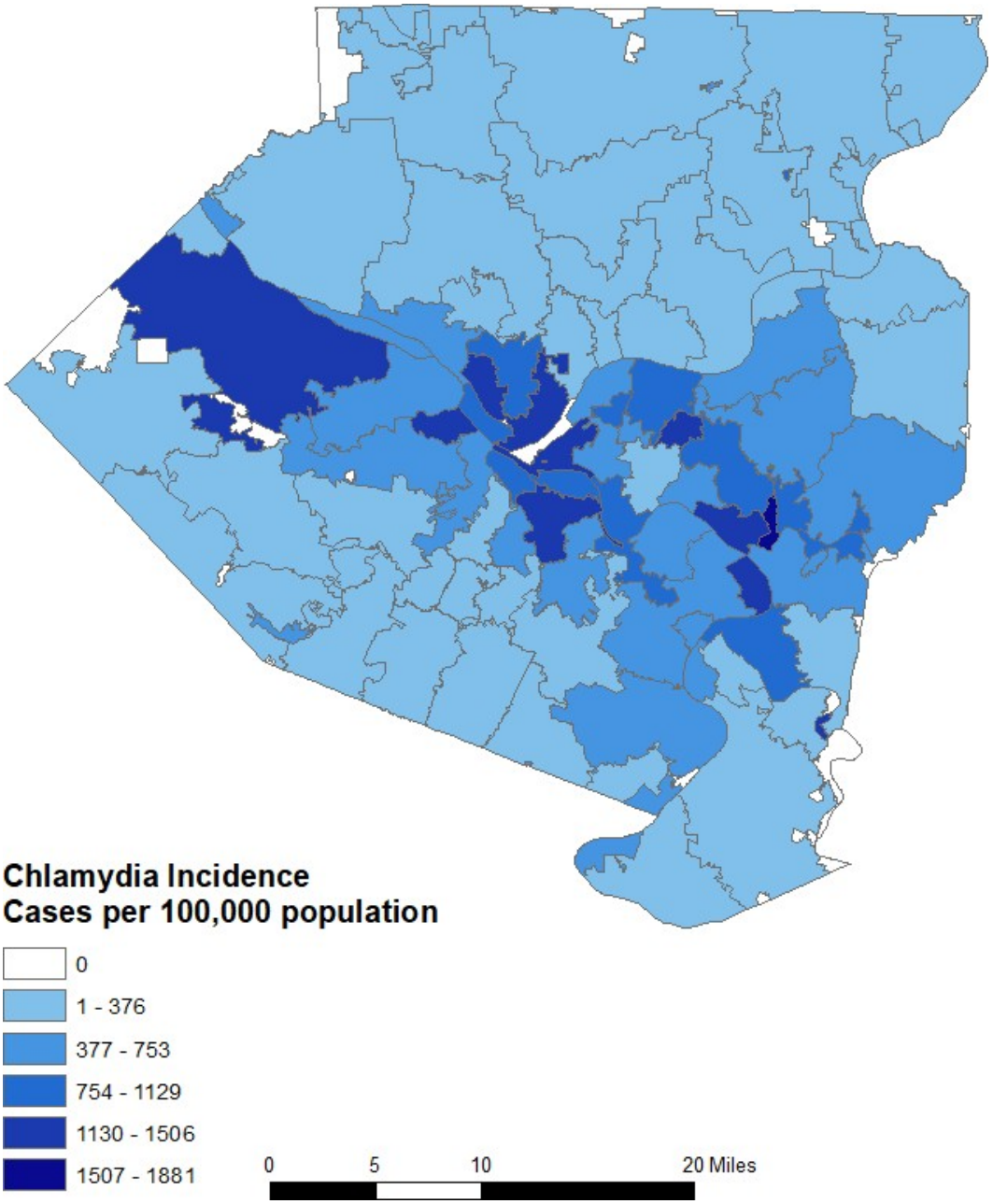


Table 7: Chlamydia Screening- ACHD and Affiliated Facilities, Allegheny County, 2014-2019

Year	Clinic	Total* Screened	Total Positive	Positive %
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%**
2019	STD Clinic	7,096	721	10.2%
	All Others	3,111	265	8.5%
	2019 Total	**10,207**	**986**	**9.7%**

GONORRHEA

GONORRHEA

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. Antimicrobial resistance of *Neisseria gonorrhoeae* continues to be a global concern. Gonorrhea prevention and control is essential to limit the spread of the organism and prevent antibiotic resistance.

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. At the time of writing, the CDC has not yet released national STD data for 2019. In Pennsylvania, the rate was 125.6 cases per 100,000 population, a very slight increase from the 2018 rate of 124.1 cases per 100,000 population.

In Allegheny County, gonorrhea cases decreased from 2018 to 2019. (Figure 4, Table 9).During 2019, 1,908 cases were reported for a rate of 156.9 per 100,000 population, 7% lower than the 2018 rate of 168.8 cases per 100,000 population (Tables 8,9).

IN ALLEGHENY COUNTY, THE INCIDENCE RATE OF GONORRHEA DECREASED BY 7% FROM 2018 TO 2019.

Gonorrhea by Sex and Age Group

In Allegheny County in 2019, 65% of cases reported occurred in males. Gonorrhea incidence among males was 210.6 cases per 100,000 compared with 106.6 cases per 100,000 among females (Table 10). Gonorrhea incidence rates were highest among those 20-34 years of age for males and 15-29 years for females (Figure 5).

Gonorrhea by Race and ZIP Code

In Allegheny County in 2019, of 1,528 reported gonorrhea cases with known race, 967 (63%) were in the black population (Table 11). For cases with known race, the incidence rate among blacks was nearly 11 times the rate among whites (591.8 and 54.4 cases per 100,000 population, respectively). However, the decrease in incidence rate between 2018 and 2019 was more pronounced in the black population (14.5% decrease) compared to the white population (3.6% decrease). From 2015 through 2019, the number of cases among whites has increased, whereas cases among blacks have decreased (Table 12).

Rates of reported gonococcal infection by ZIP code of residence are shown in Figure 6. The three ZIP codes with highest rates of gonococcal infection were 15208 (Point Breeze/Homewood), 15222 (Downtown/Strip District), and 15110 (Duquesne).

Gonorrhea Screening in Allegheny County

In 2019, 7,096 individuals were screened for gonorrhea in the STD Clinic and 3,111 were screened at other community sites supported by the ACHD's STD program. Amongthose screened at the STD clinic, 4.0% tested positive for gonorrhea, and at affiliated community sites, 2.4% tested positive for gonorrhea (Table 14).

Gonorrhea Data Figures and Tables

Figure 4: Number of Reported Gonorrhea Cases in Allegheny County, 2010-2019

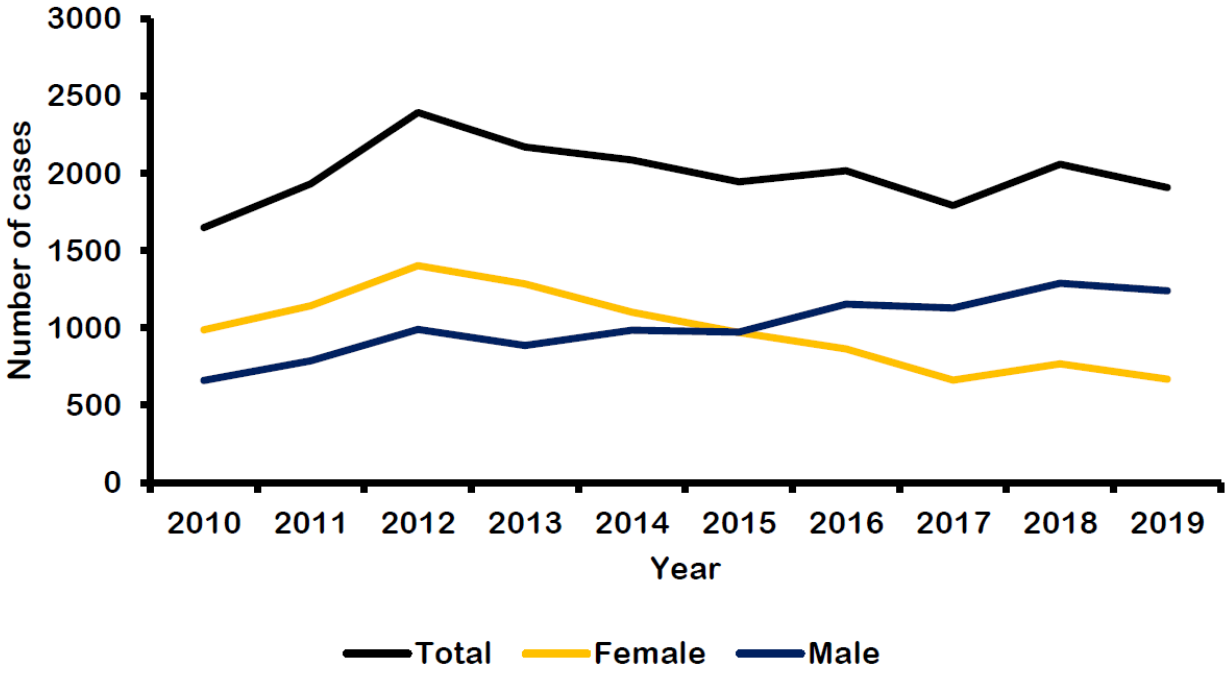
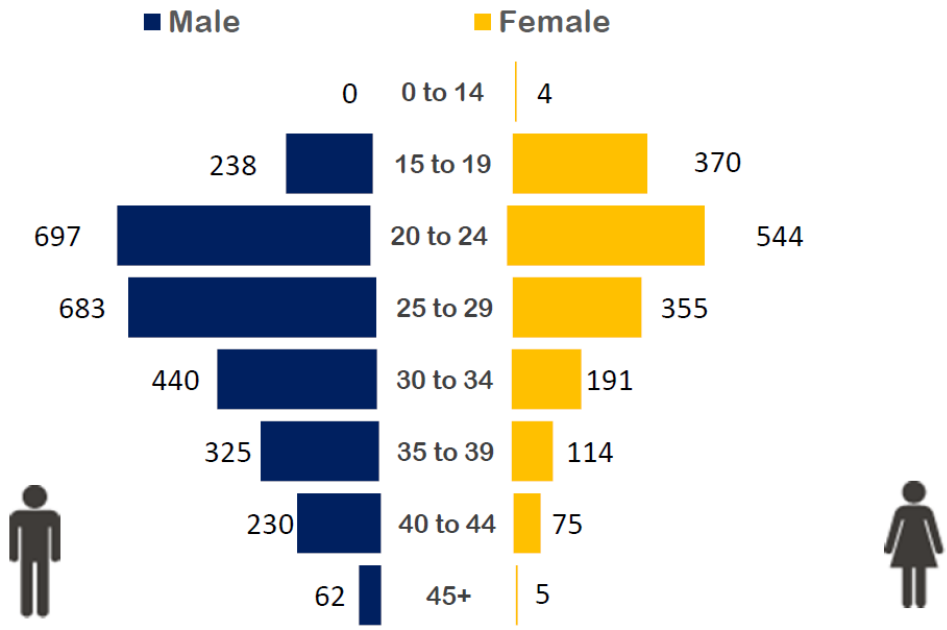


Figure 5: Incidence Rates* of Gonorrhea by Age Group and Sex in Allegheny County, 2019



** Incidence rate per 100,000 population*

Table 8: Incidence Rates* of Gonorrhea in United States, Pennsylvania and Allegheny County 2010-2019

Year	United States#	Pennsylvania#	Allegheny County
2010	100.2	101.4	134.7
2011	103.3	108.4	157.3
2012	106.7	120.8	194.3
2013	105.3	108.7	175.9
2014	109.8	99.4	168.9
2015	123.0	99.9	158.0
2016	145.0	114.2	163.8
2017	170.6	119.0	145.6
2018	179.1	124.1	168.8
2019	188.4	125.6	156.9

** Incidence per 100,000 population*

 # Source: CDC STD Surveillance Reports

Table 9: Reported Cases and Incidence Rates* of Gonorrhea in Allegheny County, 2010-2019

Year	Number of Reported Cases	Estimated Population∝	Incidence Rate*
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
2019	1,908	1,216,045	156.9

**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, 2018-2019

Sex	2018			2019		
	Reported Cases	Estimated Population∝	Incidence Rate**	Reported Cases	Estimated Population∝	Incidence Rate**
Female	767	629,556	**121.8**	669	627,610	**106.6**
Male	1,288	588,896	**218.7**	1,239	588,435	**210.6**
Unknown	2	n/a	**n/a**	0	n/a	**n/a**
Total	2,057	1,218,452	**168.8**	1,908	1,216,045	**156.9**

∝*Based on U.S. Census Bureau estimated population data; n/a= not available*

***Incidence per 100,000 population*

Table 11: Reported Cases and Incidence Rates of Gonorrhea by Race in Allegheny County, 2018-2019

Race	2018			2019		
	Reported Cases	Estimated Population∝	Incidence Rate**	Reported Cases	Estimated Population∝	Incidence Rate**
Black	1,089	157,323	**692.2**	967	163,394	**591.8**
White	548	971,262	**56.4**	528	971,169	**54.4**
Other	49	89,867	**54.5**	33	81,482	**40.5**
Unknown	371	n/a	**n/a**	380	n/a	**n/a**
Total	2,057	1,218,452	**168.8**	1,908	1,216,045	**156.9**

∝*Based on U.S. Census Bureau estimated population data; n/a= not available*

***Incidence per 100,000 population*

Table 12: Reported Gonorrhea Cases by Race in Allegheny County, 2015-2019

Race	2015	2016	2017	2018	2019
Black	1,232 (63.4%)	1,231 (61.1%)	1,035 (57.8%)	1,089 (52.9%)	967 (50.7%)
White	428 (22.0%)	465 (23.1%)	455 (25.4%)	548 (26.7%)	528 (27.7%)
Other	25 (1.3%)	36 (1.8%)	48 (2.7%)	49 (2.4%)	33 (1.7%)
Unknown	259 (13.3%)	284 (14.1%)	252 (14.1%)	371 (18.0%)	380 (19.9%)
Total	**1,944**	**2,016**	**1,790**	**2,057**	**1,908**

Table 13: Reported Cases of Gonorrhea by Age Group, Race and Sex in Allegheny County, 2019

Age Group	Black		White		Unknown		Other		Total		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Total
0-14	3	0	1	0	0	0	0	0	4	0	**4**
15-19	86	64	19	4	21	14	1	1	127	83	**210**
20-24	118	131	43	64	38	55	3	7	202	257	**459**
25-29	103	143	36	96	22	70	2	11	163	320	**483**
30-34	47	90	26	82	15	39	1	3	89	214	**303**
35-39	33	43	6	52	6	36	0	3	45	134	**179**
40-44	7	25	10	31	8	20	0	1	25	77	**102**
45 +	4	70	5	53	5	31	0	0	14	154	**168**
Total	**401**	**566**	**146**	**382**	**115**	**265**	**7**	**26**	**669**	**1,239**	**1,908**

Figure 6: Rate of reported gonococcal infection by ZIP code of residence, Allegheny County, 2019

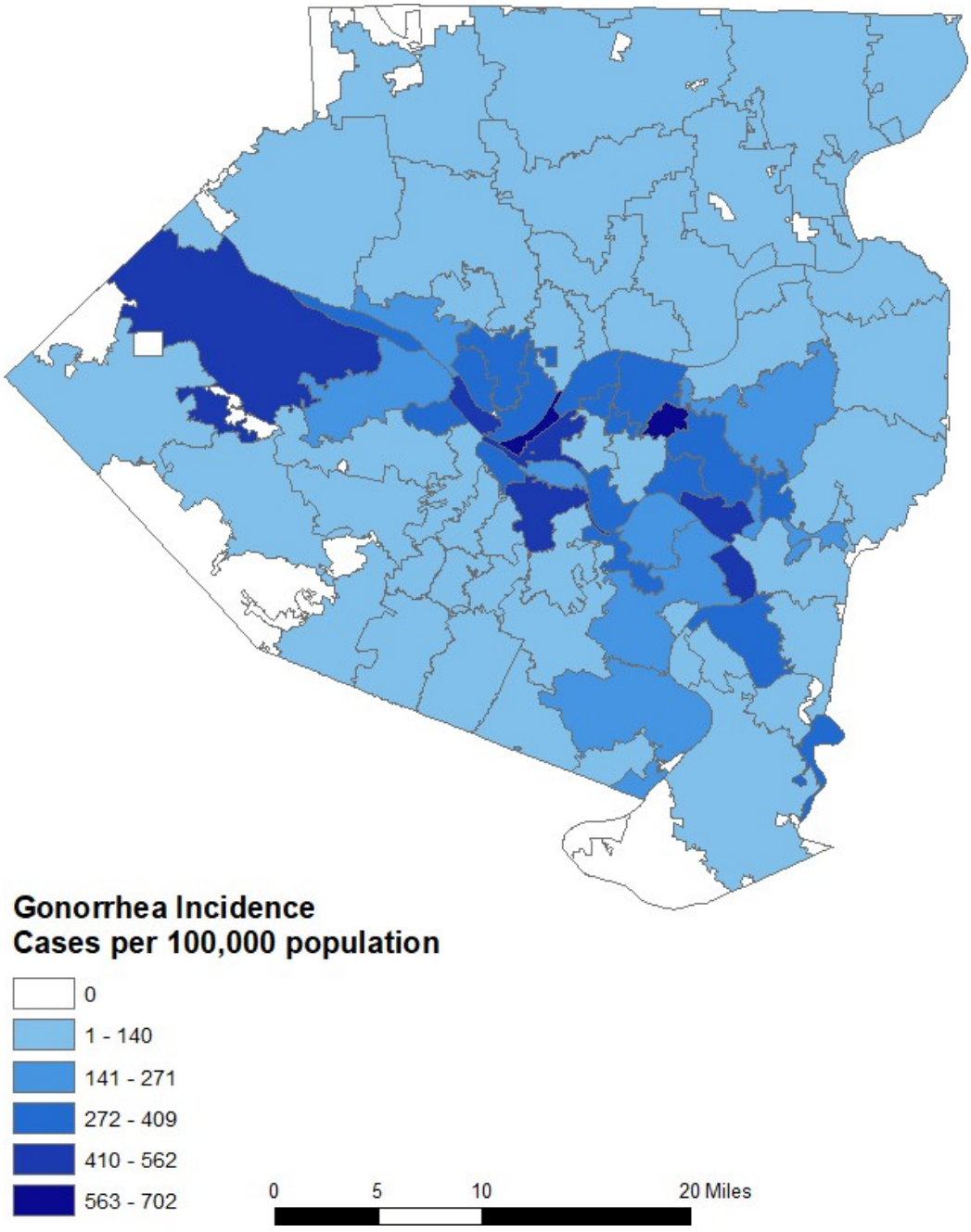


Table 14: Gonorrhea Screening, ACHD and Affiliated Facilities, Allegheny County 2014- 2019

	Clinic	Total Screened	Total Positive	Positive %
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%**
2019	STD Clinic	7,096	282	4.0%
	All Others	3,111	75	2.4%
	2019 Total	**10,207**	**357**	**3.5%**

SYPHILIS

SYPHILIS

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.

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 increasing problem nationwide, particularly in urban areas. The U.S. incidence rate has increased almost every year since 2000. At the time of writing, the CDC had not yet released national STD data for 2019. In Pennsylvania, there were 7.8 cases of P&S syphilis per 100,000 population, a 26% increase over the2018 rate of 6.2 per 100,000 (Table 15). In Allegheny County during the past 10 years, P&S syphilis peaked in 2015 with a rate of 10.3 per 100,000 (127 cases) (Figure 7, Table 15). In 2019, 71 cases of primary and secondary syphilis were reported (5.8 cases per 100,000 population), compared to 58 cases in 2018 (4.8 cases per 100,000 population).

IN 2019, 97% OF REPORTED PRIMARY AND SECONDARY SYPHILIS CASES IN ALLEGHENY COUNTY WERE IN MEN.

Primary and Secondary Syphilis by Age, Sex, and Race

Syphilis is far more common in men than women, with 69 (97%) of 71 P&S syphilis cases occurring in men in 2019 (Table 16). The incidence rate of primary and secondary syphilis in men (11.7 cases per 100,000 population) is 39 times higher thanthe incidence rate in women (0.3 cases per 100,000 population). Of 68 primary and secondary syphilis cases with known race in 2019, 40 (56%) were in whites (Table 17), similar to the 39 cases in whites reported in 2018. Most of the increase in 2019 was dueto a large increase in cases among blacks, with 8 cases in 2018 and 27 cases in 2019. Incontrast to chlamydia and gonorrhea, syphilis is not commonly reported among adolescents. Of the 71 cases of P&S syphilis reported in 2019, none were younger than 20 years of age (Table 18).

Early Syphilis

Early syphilis includes all cases of syphilis that are primary, secondary or earlylatent. In Allegheny County in the past 10 years, early syphilis peaked at 216 cases in 2015 (17.6 cases per 100,000 population) (Table 19, Figure 7). In

2019, there were 183 cases of early syphilis (15.0 cases per 100,000 population), a 16% increase over the 2018 incidence rate of 12.9 cases per100,000 population (Tables 19,20). Incidence rates of early syphilis were highest in men who were between 20 and 34 years old (Figure 8).

Risk Factors Associated with Syphilis

Risk factors associated with early syphilis and primary and secondary syphilis are presented in Table 21. The most common risk factor was having sex with a male in thepast 12 months, which was reported by 146 of 183 early syphilis cases (80%) and 59 of71 primary and secondary syphilis cases (83%).

Early Syphilis Cases by ZIP code

Early syphilis cases by zip code of residence are shown in Figure 9. Each dot representsa case but is placed randomly within the ZIP code of residence (not at the actual address).

Congenital Syphilis

DURING 2019, THERE WERE **NO CASES** OF CONGENITAL SYPHILIS REPORTED IN ALLEGHENY COUNTY.

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 in high-risk areas who are pregnant be screened for syphilis three times: atthe 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 2019, there were no cases of congenital syphilis reported in Allegheny County. The last congenital syphilis case was reported in 2015.

Syphilis Screening in Allegheny County

Early detection, complete reporting, and intensive investigation and treatment of sex partners are keys in the control of syphilis. ACHD coordinates syphilis screening at thePublic Health Clinic and at designated sites throughout the county. At the STD clinic in 2019, 7,593 RPR tests were performed with 313 (4.1%) positive.

Syphilis Data Tables and Figures

Table 15: Incidence Rates* of P&S Syphilis in United States, Pennsylvania and Allegheny County 2010-2019

Year	United States Incidence#	Pennsylvania Incidence#	Allegheny County Incidence# (Case #)
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)
2019	11.9	7.8	5.8 (71)

* *Incidence per 100,000 population*

Source: CDC STD Surveillance Reports

Figure 7: Number of Reported Syphilis Cases in Allegheny County, 2010-2019

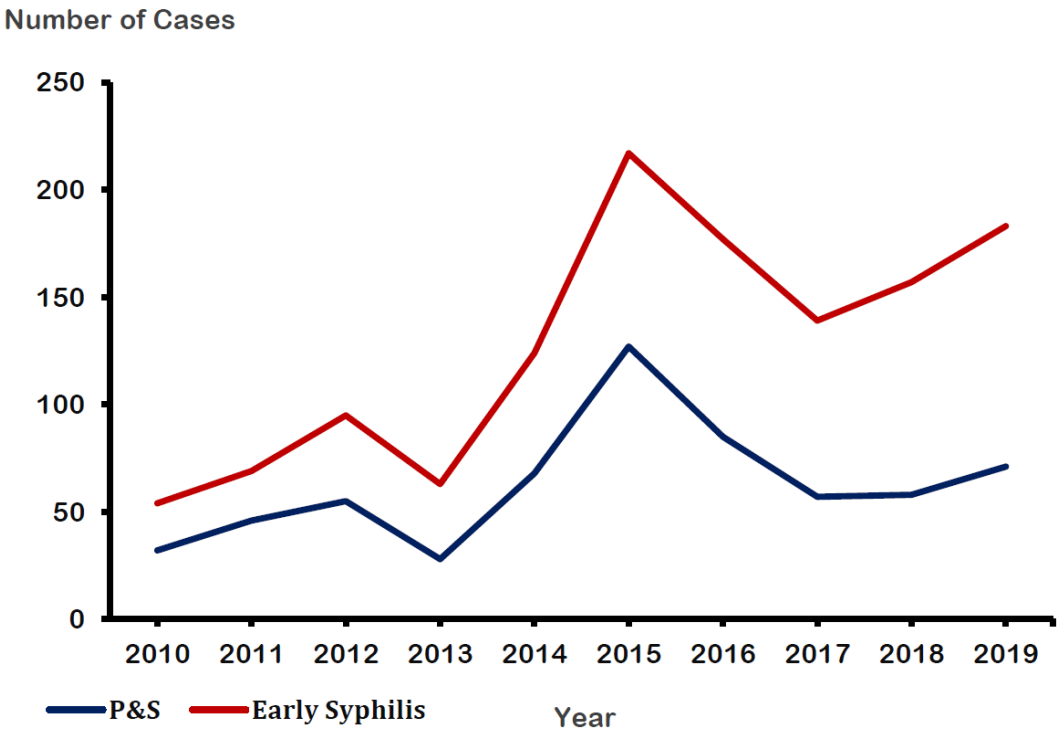


Table 16: Reported Cases and Incidence Rates of P&S Syphilis by Sex in Allegheny County, 2018-2019

Gender	2018			2019		
	Reported Cases	Estimated Population ∝	Incidence Rate**	Reported Cases	Estimated Population ∝	Incidence Rate**
Female	4	629,556	**0.6**	2	627,610	**0.3**
Male	54	588,896	**9.2**	69	588,435	**11.7**
Total	58	1,218,452	**4.8**	71	1,216,045	**5.8**

∝*Based on U.S. Census Bureau estimated population data*

***Incidence per 100,000 population*

Table 17: Reported Cases and Incidence Rates of P&S Syphilis by Race in Allegheny County, 2018-2019

Race	2018			2019		
	Reported Cases	Estimated Population∝	Incidence Rate**	Reported Cases	Estimated Population∝	Incidence Rate**
Black	8	163,433	**4.9**	27	163,394	**16.5**
White	39	975,555	**4.0**	40	971,169	**4.1**
Other	6	79,464	**7.6**	1	81,482	**1.2**
Unknown	5	n/a	**n/a**	3	n/a	**n/a**
Total	58	1,218,452	**4.8**	71	1,216,045	**5.8**

∝*Based on U.S. Census Bureau estimated population data; n/a= not available*

***Incidence per 100,000 population*

Table 18: Reported Case of P&S Syphilis by Age Group, Race and Sex in Allegheny County - 2019

Age Group	Black		White		Other		Unknown		Total		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Total
0-14	0	0	0	0	0	0	0	0	0	0	**0**
15-19	0	0	0	0	0	0	0	0	0	0	**0**
20-24	0	6	2	4	0	0	0	0	2	10	**12**
25-29	0	10	0	6	0	1	0	1	0	18	**18**
30-34	0	6	0	7	0	0	0	2	0	15	**15**
35-39	0	4	0	6	0	0	0	0	0	10	**10**
40-44	0	0	0	2	0	0	0	0	0	2	**2**
45 +	0	1	0	13	0	0	0	0	0	14	**14**
Total	**0**	**27**	**2**	**38**	**0**	**1**	**0**	**3**	**2**	**69**	**71**

Table 19: Reported Cases and Incidence Rates* of Early Syphilis¥ in Allegheny County 2010-2019

Year	Number of Reported Cases	Estimated Population∝	Incidence Rate*
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	216	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
2019	183	1,216,045	15.0

**Incidence per 100,000 population*

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

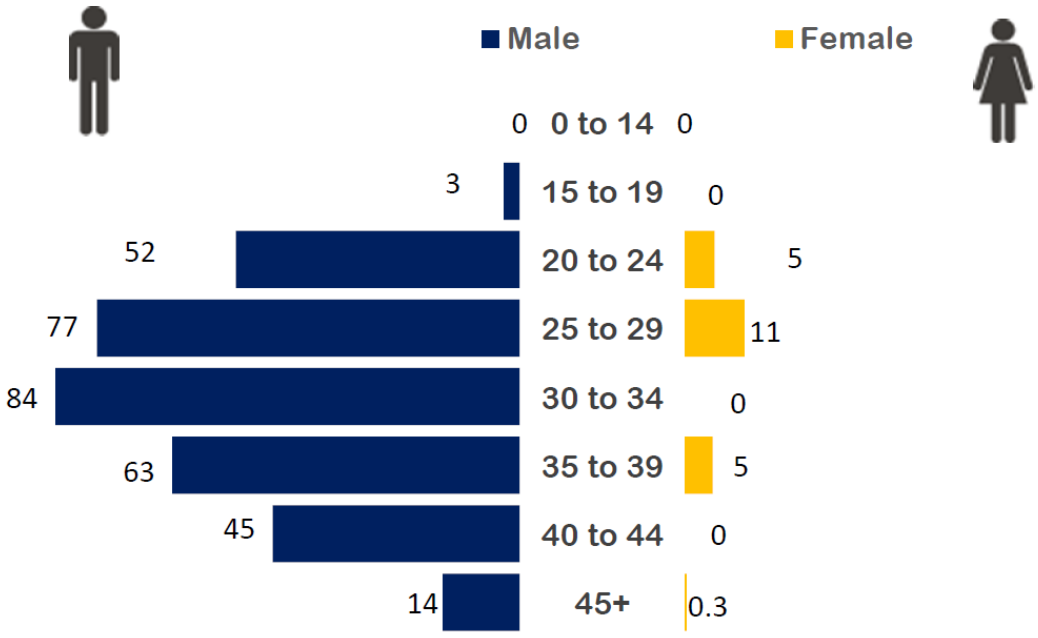
¥Primary, Secondary and Early Latent Syphilis

Table 20: Early Syphilis¥ Cases by Disease Category and Year of Diagnosis in Allegheny County, 2010-2019

Year	Primary	Secondary	Early Latent	Totals
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	89	216
2016	23	62	92	177
2017	18	39	82	139
2018	13	45	99	157
2019	29	42	112	183

¥*Primary, Secondary and Early Latent Syphilis*

Figure 8: Incidence Rates* of Early Syphilis¥ by Age Group and Sex in Allegheny County, 2019



** Incidence rate per 100,000 population*

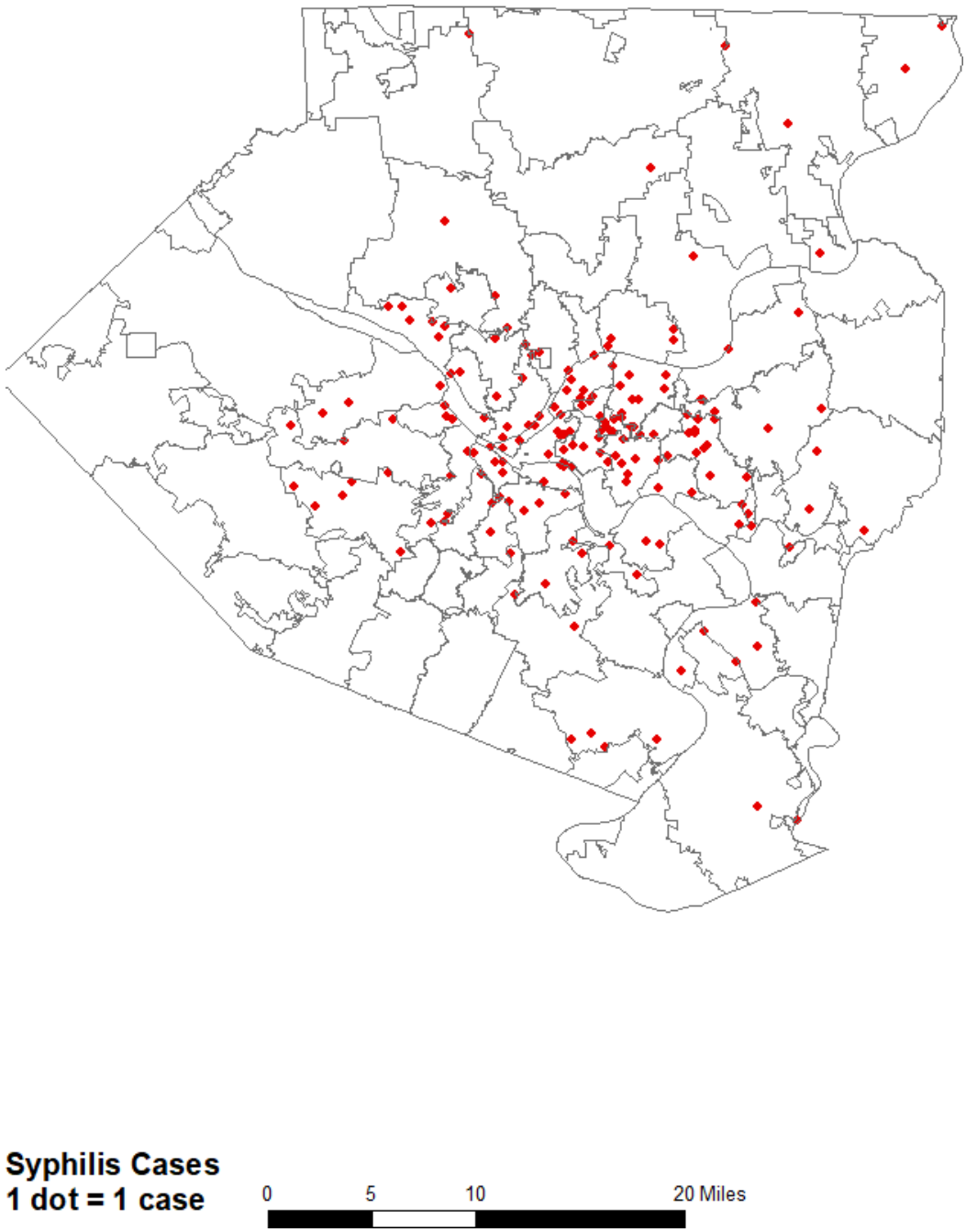
¥*Primary, Secondary and Early Latent Syphilis*

Table 21: Risk factors associated with Early Syphilis[&] in Allegheny County - 2019

Risk Factor	Early Latent (n=112)	Primary & Secondary (n=71)	Total (n=183)
Sex with a male (last 12 months)	87	59	146
Sex with men who have sex withmen in the last 12 months	81	57	138
Sex- oral (last 12 months)	76	56	132
Previously tested for HIV	78	53	131
Past history of STDs	77	54	131
Sex- anal (last 12 months)	67	55	122
Multiple sex partners (last 12months)	57	48	105
Sex with an anonymous partner(last 12 months)	49	30	79
Use of non-injection drugs (last 12months)	35	27	62
Enrolled in Pre-exposureprophylaxis (PrEP)	39	21	60
Sex with partner picked-up oninternet (last 12 months)	35	22	57
Never used condom when havingsex (last 12 months)	29	18	47
If used drugs, sex while high/intoxicated on drugs/alcohol	18	13	31
Sex- vaginal (last 12 months)	17	9	26
Sex with a partner infected withHIV/AIDS (last 12 months)	14	12	26
Sex with a female (last 12 months)	10	7	17
Use of sexual enhancement drugs(last 12 months)	7	0	7
Use of injection drugs (last 12months)	6	1	7
Ever had tattoo	2	2	4
Sex with an injection drug user(last 12 months)	3	0	3

[&]*Data based on self-reporting*

Figure 9: Early Syphilis cases by ZIP code of residence, Allegheny County, 2019*



**Note; dots placed randomly inside individual zip codes.*

HIV/AIDS

HIV/AIDS

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 prevent or delay the onset of symptoms of AIDS for many years by reducing the amount of virus present in the blood. By reducing the amount of HIV in a person's blood, ART can reduce or prevent the transmission of HIV to others.

HIV Incidence

In 2019, there were 94 newly diagnosed cases of HIV reported in Allegheny County, 12 more than reported in 2018 but a decline of 45 from the recent peak of 139 cases reported in 2015 (Figure 10, Table 22). Most (81%) newly diagnosed infections occurred in males (Table 23, Figure 11). The incidence rate among black men was far greater than the rate observed in white men (56.6 versus 6.1 per 100,000 population) (Table 23). The incidence rate among Hispanic men was also high (21.5) with 3 cases among a small Hispanic population. In women, 11 (61%) of the 18 new HIV infections were among blacks (Table 23). Most new infections (67%) occurred among men who have sex with men (including those who also were using injection drugs), 7% among persons with a history of intravenous drug use (IDU), and 29% among heterosexual persons (Table 24). No cases of pediatric HIV were reported in Allegheny County in 2019 (Figure 11).

AIDS Incidence

In 2019 in Allegheny County there were 33 newly diagnosed cases of HIV who were diagnosed with AIDS, an increase from the 20 HIV cases with subsequent AIDS reported in 2018 (Figure 12, Table 25). Twenty-two (67%) of new AIDS cases were in males (Table 26). Blacks were the most affected race, with 16 (48%) cases (Table 26); 14 cases (42%) were reported among the White population. The incidence rate of AIDS among non-Hispanic black males was about 7 times higher than in non-Hispanic Whites and about twice as high as among Hispanic males (Table 26). Currently, there are 1,729 individuals living with AIDS in Allegheny County among 3,331 total people living with HIV (Table 27).

HIV/AIDS Figures and Tables

Figure 10: Number of Reported HIV Cases in Allegheny County, 2010-2019

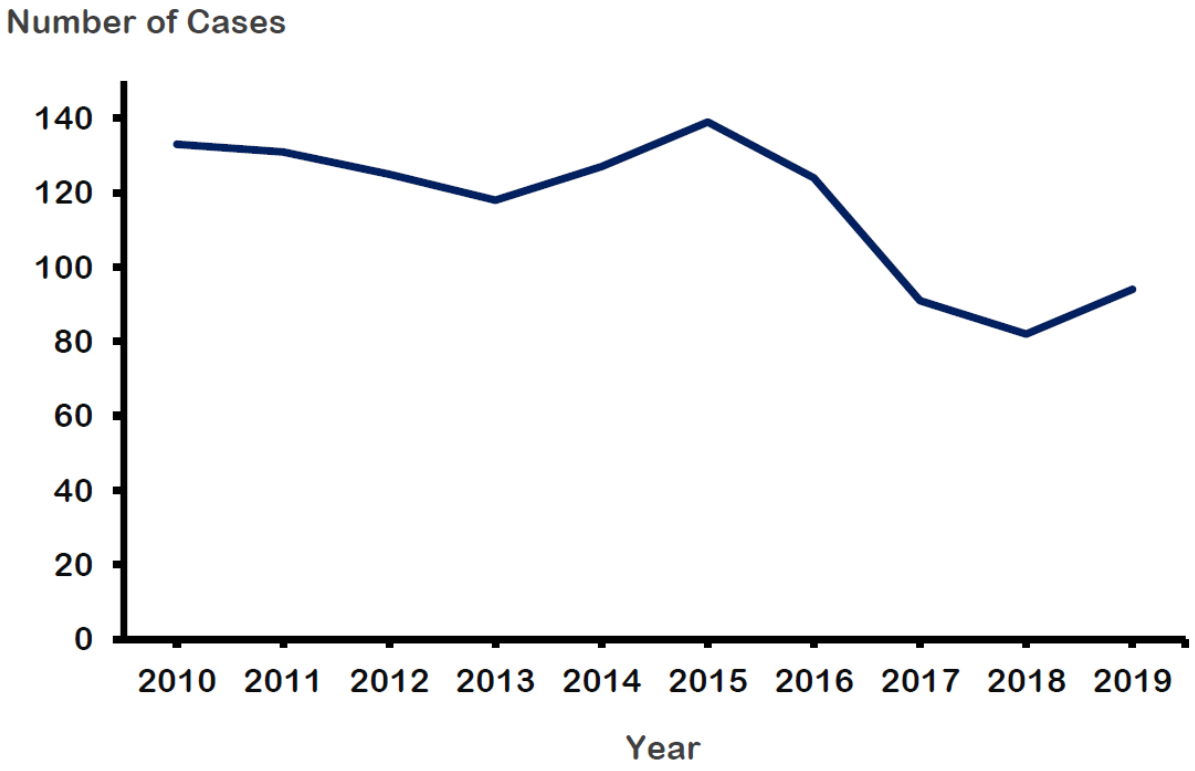


Table 22: Reported HIV Cases and Incidence Rates* in Allegheny County, 2010- 2019

Year	New Cases	Estimated Population∝	Incidence Rate*
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	82	1,218,452	6.7
2019	94	1,216,045	7.7

**Incidence per 100,000 population* *∝Based on U.S. Census Bureau estimated population data*

Note: HIV cases include those concurrently or subsequently diagnosed with AIDS

Table 23: Newly Reported HIV Cases and Incidence Rates* by Sex and Race/Ethnicity in Allegheny County, 2019

Race/ Ethnicity	Male	Estimated Population∝	Rate*	Female	Estimated Population∝	Rate*	Total Cases
Black (non- Hispanic)	42	74,166	**56.6**	11	86,170	**12.8**	**53**
White (non-Hispanic)	28	461,206	**6.1**	5	488,598	**1.0**	**33**
Hispanic	3	13,947	**21.5**	0	13,605	**0.0**	**3**
Other	3	38,987	**7.7**	2	39,366	**5.1**	**5**
Total	76	588,306	**12.9**	18	627,739	**2.9**	**94**

**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, 2019

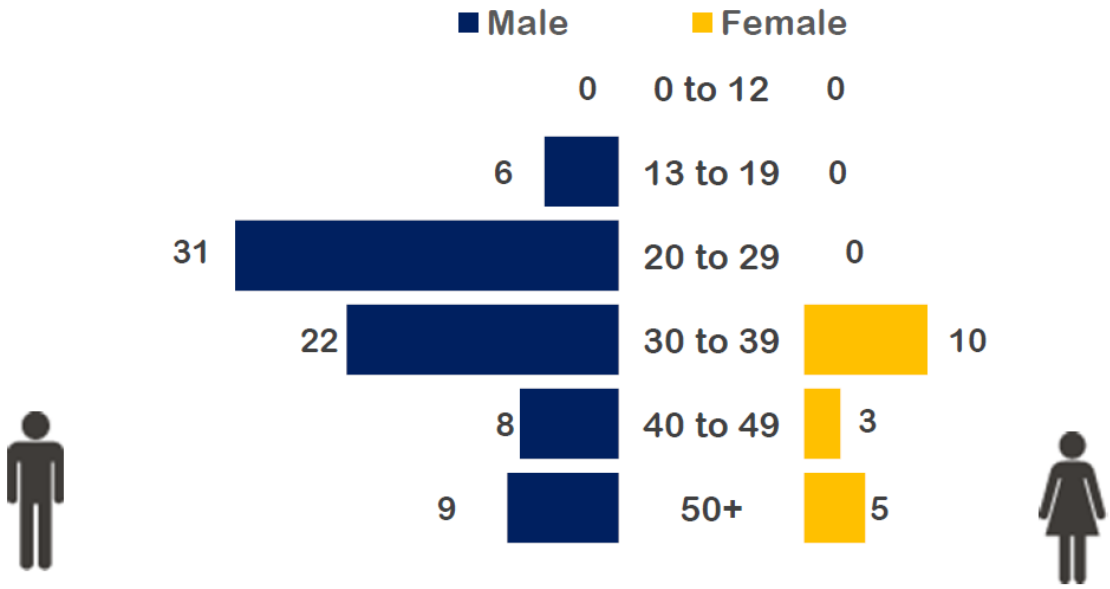


Table 24: Risk Factors in Newly Reported& HIV Cases, 2019 (n=94)

Category	Number of Cases n (%)
Men who have sex with men (MSM)	60 (63.8)
Injecting drug user (IDU)	4 (4.3)
Heterosexuality	27 (28.7)
MSM & IDU	3 (3.2)

&Data based on self-reporting

Figure 12: Number of Reported AIDS Cases in Allegheny County by Year of HIV Diagnosis, 2010-2019

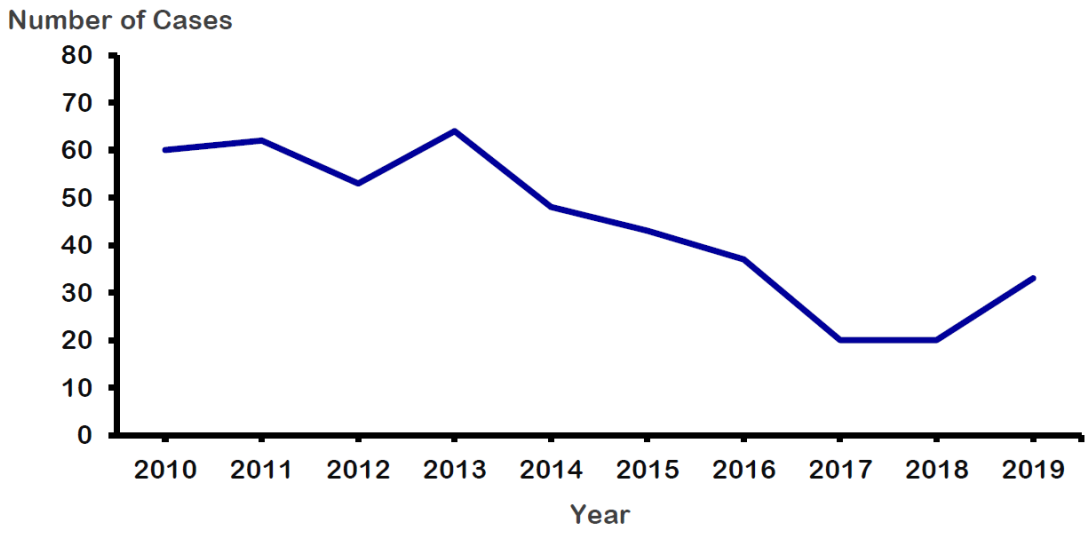


Table 25: Reported Adult AIDS Cases and Incidence Rates* in Allegheny County by Year of HIV Diagnosis, 2010-2019

Year	Reported Cases	Estimated Population∝	Incidence Rate*
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	43	1,230,459	3.5
2016	37	1,230,360	3.0
2017	20	1,229,605	1.6
2018	20	1,218,452	1.6
2019	33	1,216,045	2.7

**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, 2019

Race/ Ethnicity	Male	Estimated Population∝	Rate*	Female	Estimated Population∝	Rate*	Total Cases
Black (non-Hispanic)	11	74,166	14.8	5	86,170	5.8	16
White (non- Hispanic)	10	461,206	2.2	4	488,598	0.8	14
Hispanic	1	13,947	7.2	0	13,605	0.0	1
Other	0	38,987	0.0	2	39,366	5.1	2
Total	22	588,306	3.7	11	627,739	1.8	33

**Incidence per 100,000 population* *∝Based on U.S. Census Bureau estimated population data*

Table 27: HIV/AIDS Prevalence by Sex and Race in Allegheny County, 2019

Race	Male # of HIV cases (# of AIDS cases)	Female # of HIV cases (# of AIDS cases)	Total # of HIV cases (# of AIDS cases)
Black (non-Hispanic)	1,034 (524)	439 (236)	1,473 (760)
White (non-Hispanic)	1,319 (710)	150 (82)	1,469 (792)
Hispanic	139 (54)	15 (6)	154 (60)
Other	197 (100)	38 (17)	235 (117)
Total	2,689 (1,388)	642 (341)	3,331 (1,729)

HIV CO-INFECTION

HIV CO-INFECTION

HIV Co-infection

For all newly diagnosed cases of chlamydia, gonorrhea, and syphilis, individuals with either an existing or new HIV diagnosis are considered co-infected.

The percentage of newly diagnosed chlamydia cases with HIV co-infection during the past five years ranged from 2.0% in 2015 to 3.1% in 2018 (Table 28). In 2019, 2.1% of chlamydia cases were co-infected with HIV. Co-infection among new gonorrhea cases is higher than among new chlamydia cases and is generally increasing, from 6.4% in 2015 to 8.2% in 2019 (Table 28). HIV co- infection among new syphilis cases is higher than for other STDs, with 34.4% ofthose with early syphilis in 2019 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); 46.8% of early syphilis cases in 2015 were co-infected with HIV.

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. Altering sexual risk behaviors, such as 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. Pre-exposure prophylaxis (PrEP) is an important tool to reduce the risk of acquiring HIV (see Risk Reduction Guide)

HIV Co-infection Figures and Tables

Table 28: Percentage of those with Chlamydia, Gonorrhea, and Syphilis co-infected with HIV in Allegheny County, 2015-2019

Disease	2015	2016	2017	2018	2019
Chlamydia	2.0%	2.4%	2.6%	3.1%	2.1%
Gonorrhea	6.4%	6.7%	8.3%	7.7%	8.2%
Early Syphilis¥	46.8%	44.8%	31.9%	34.6%	34.4%

¥*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. Risk factors include a sex partner with HIV, more than one sex partner, injection drug use, sex for money or drugs, STD or TB evaluation/diagnosis, and sex with someone with HIV risk factors.
- 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/hivtesting.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! Most 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 populationduring 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 specifieddisease.

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 causeof 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 StateHarrisburg) 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 withina 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 tohave 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'sDay, Thanksgiving Day, Christmas Day