

ALLEGHENY COUNTY
HEALTH DEPARTMENT

HIV/AIDS
EPIDEMIOLOGIC
PROFILE
2012-2021



ALLEGHENY COUNTY HIV/AIDS EPIDEMIOLOGIC PROFILE, 2012-2021

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INTRODUCTION

Human Immunodeficiency Virus (HIV) is a virus that attacks the body's immune system by destroying cells that fight disease and infection. HIV is typically spread by exposure to body fluids or tissue from an infected individual; sex and injection drug use are the most common routes of transmission. If left untreated, HIV can lead to Acquired Immune Deficiency Syndrome (AIDS), the most severe stage of HIV infection. AIDS leads to debilitating infections that occur due to a badly damaged immune system. There is currently no effective cure for HIV, thus the infection lasts throughout life once acquired. However, with proper medical care, such as highly active antiretroviral treatments (HAART), HIV can be controlled, and individuals can live a long and healthy life without transmitting the disease to others.

The purpose of this report is to provide the general public, healthcare providers and researchers with updated information on the burden of the HIV epidemic in Allegheny County. These data are used to monitor trends in the epidemic and identify groups who may be disproportionately affected by the disease for prevention and outreach efforts.

HIV/AIDS CASES

In 2021, 89 new cases of HIV¹ were diagnosed among Allegheny County residents, up from 79 new cases diagnosed in 2020. Table 1 shows the number of new HIV diagnoses from 1982 through 2015, from 2016 through 2020, and in 2021. Most new cases of HIV were diagnosed among males since the start of the epidemic in 1982, with 85% of new cases diagnosed among males in 2021. Historically, fewer Black/African American persons were newly diagnosed with HIV; however, since 2016, Black persons have made up more than 50% of all new diagnoses. Additionally, men who have sex with men (MSM) have consistently been the largest group with newly diagnosed HIV, with over 60% of cases since 2016. The current number of people living with HIV/AIDS (PLWHA) in Allegheny County is also shown by demographic groups (Table 1). The current number of people living with HIV/AIDS (PLWHA) in Allegheny County is estimated to be approximately 3,600.

Of the 89 new HIV cases in 2021, 27% were diagnosed as AIDS within 90 days of the initial HIV infection diagnosis, otherwise known as a concurrent case (Table 2). Individuals who are concurrently diagnosed with HIV and AIDS receive care in later stages of the HIV infection, leading to worse health outcomes and an increased risk of death. A higher percentage of females (46%) were concurrently diagnosed with HIV and AIDS compared to males (24%), and a higher percentage (43%) of heterosexuals were concurrently diagnosed compared to men who have sex with men (MSM) (18%).

Although the number of new HIV cases has declined overall since 2012, the number of new HIV diagnoses among both males and females increased from 2020 to 2021. Figure 1 shows that new diagnoses among males dropped from 2015 through 2019 but increased in 2020 and 2021. New cases among females have been relatively stable, with a slight increase in 2021.

Most (65%) of the new HIV diagnoses in 2021 were among persons ages 25 to 44 years (Table 1). There were no perinatal or pediatric cases observed in 2021. The number of new cases among those 15-24 years, 55-64 years, and 65+ years decreased from 2020 to 2021 (Figure 2). Cases in other age groups increased from 2020 to 2021. Between 2016-2021, trends varied widely between age groups. Individuals 25-34 years have consistently had the largest burden of new HIV diagnoses, except in 2017. Individuals 15-24 years had the second highest number of new HIV diagnoses consistently, except in 2017 when they had the highest number, and in 2021, when those 35-44 years surpassed them.

From 2020 to 2021, there was an increase in the number of new HIV diagnoses among Non-Hispanic Black, Non-Hispanic White, and Hispanic individuals, as shown in Figure 3. Non-Hispanic Black persons made up the largest group of new diagnoses in 2021 with 52 (58%) cases (Table 1). The number of new diagnoses among Non-Hispanic White individuals increased from 25 in 2020 to 30 in 2021.

¹ Newly diagnosed HIV cases are persons who were residents of Allegheny County at the time of diagnosis in the given calendar year

New HIV diagnoses among MSM increased in 2021 after declining from 2019 to 2020 (Figure 4). MSM diagnoses continued to account for the largest proportion (62%) of new HIV cases in 2021 (Table 1). New cases of HIV among those with heterosexual contact also increased from 21 diagnoses in 2020 to 28 diagnoses in 2021. New cases among heterosexuals have steadily increased since 2018.

In 2021, the rate of new HIV diagnoses among Black males (57.2 per 100,000 population) exceeded rates among males of any other racial or ethnic group and was more than 9 times higher than the rate of new diagnoses among White males (6.0 per 100,000 population) (Table 3). The overall rate among males was 12.6 per 100,000 population, while the overall rates among females was 2.0 per 100,000 population. Among females, Black females had the highest rate of new diagnoses in 2021 (11.7 per 100,000 population) compared to females of any other racial or ethnic group.

Males between 25-34 years of age had the highest rate of new HIV diagnoses in 2021 (34.1 per 100,000 population) compared to males in any other age group (Table 4). The highest rate among females was in those from 35-44 years (8.8 per 100,000 population).

HIV/AIDS-RELATED HOSPITALIZATIONS

From 2011 through 2020, there were a total of 6,258 hospitalizations in Allegheny County for which HIV-related codes were designated as a primary or secondary diagnosis (Table 5, Figure 5). The number of hospitalizations per year ranged from 529 to 674. Most of the hospitalizations were at a general acute care hospital, with about 6% of annual hospitalizations at psychiatric hospitals; less than 1% of hospitalizations occurred at specialty general, long-term acute care, or rehabilitation hospitals, respectively. The most common code in the 10-year period was noted as ‘Asymptomatic human immunodeficiency virus (HIV) infection status,’ followed by the code for ‘HIV disease.’ See Appendix for information on data source and analysis methodology.

Among the 6,258 HIV-related hospitalizations in 2011-2020, 49% occurred in individuals 50+ years, while 47% occurred in those 20-49 years. A large disparity was observed between racial groups; Black individuals accounted for 57% of these hospitalizations, while White persons only accounted for 41%. Males accounted for most HIV-related hospitalizations in this period (71%).

HIV-related hospitalizations comprised an average of 0.38% of all hospitalizations between 2011-2020, ranging from 0.34% of hospitalizations in 2012 to 0.43% of hospitalizations in 2019 (Table 5).

Although there were fewer hospitalizations of any cause among males as compared to females, there were more HIV-related hospitalizations among males. HIV-related hospitalizations accounted for 0.62% of hospitalizations in males, but 0.20% of hospitalizations in females.

From 2011 to 2020, the number of hospitalizations for any cause among White persons was more than 4 times greater than the number of hospitalizations among Black individuals. However, the percentage of hospitalizations with an HIV diagnosis for Black persons (1.18%) was almost 6 times greater than that for White persons (0.20%).

From 2011 to 2020, HIV-related hospitalizations decreased among individuals 20-49 years, but increased in individuals 50+ years. More than twice as many hospitalizations among 20-49-year-olds were HIV/AIDS-related (0.74%) as compared to hospitalizations among individuals 50+ years (0.30%).

The number of hospitalizations per 100,000 population was highest among Black males, followed by Black females in 2016-2020. The rate in Black males was 6.5 times higher than the rate in White males, while the rate in Black females was 19.4 times higher than the rate in White females (Figure 6).

Table 6 shows the most common zip codes of residence for patients with HIV-related hospitalizations from 2011 through 2020. Of the 6,258 HIV-related hospitalizations in that period, the five most common neighborhoods of these patients were around the areas of Wilksburg, East Allegheny, and East Liberty.

Major depressive disorder was the most common primary diagnosis code for HIV-related hospitalizations in which HIV was noted as a secondary diagnosis code; 100 (3%) of the 2,976 hospitalizations from 2016 to 2020 met these criteria. Additional primary diagnoses included shortness of breath (3%), pneumonia (2%), alcohol dependence with withdrawal (2%), and sepsis (2%).

Most (65%) of the 6,258 HIV-related hospitalizations resulted in discharge to home or self-care, with some (14%) hospitalizations ending in discharge/transfer to home under the care of an organized home health service. Additional hospitalizations (5%) resulted in discharge/transfer to skilled nursing facilities with Medicare certification, or the patient left against medical advice (4%).

HIV/AIDS-RELATED DEATHS

From 2011 through 2020, a total of 165 HIV/AIDS-related deaths occurred among residents of Allegheny County, an average of 17 deaths per year. In 2017, it was estimated that there were 3,479 PLWHA in Allegheny County, making the rate of death approximately 489 deaths per year per 100,000 PLWHA. Figure 7 shows the number of deaths per year with HIV/AIDS as either the underlying cause of death or a contributing cause. The highest number of deaths (28) occurred in 2013, a year in which deaths among Black individuals and those 35-44 years were higher than previous and succeeding years. See Appendix for data abstraction methodology.

Males died from HIV/AIDS-related causes at a rate almost 4 times that of females from 2011 through 2020. The 10-year rate of HIV/AIDS related deaths among males was 22 deaths per 100,000, while the rate among females was 6 deaths per 100,000. Figure 7 shows the number of HIV/AIDS-related deaths by sex assigned at birth.

HIV/AIDS disproportionately contributed to deaths among Black individuals in Allegheny County from 2011 to 2020 compared to White individuals (Figure 8). The 10-year HIV/AIDS-related mortality rate among Black persons was 51 deaths per 100,000, more than six times that of White persons (8 deaths per 100,000); the 10-year rate among individuals of other races was 4 deaths per 100,000. Figure 9 shows the number of HIV/AIDS-related deaths by age group from 2011-2020. The highest number of HIV/AIDS-related deaths occurred in individuals 55-64 years, followed by those 45-54 years.

HIV/AIDS RESOURCES

For more information on the incidence of HIV/AIDS in the U.S. and CDC recommendations for HIV prevention and testing, visit these websites:

- [MMWR Estimated Annual Number of HIV Infections](#)
- [CDC HIV Prevention](#)
- [CDC HIV Testing](#)

Locally, AIDS Free Pittsburgh (AFP) is a public health movement in Allegheny County aimed at ending the HIV epidemic by 2030. It is a collaborative initiative between government agencies, healthcare institutions, and community-based organizations. AFP strives to reduce the incidence of HIV infections in the county and to improve the care of people living with HIV/AIDS. For more information on AFP, visit their [website](#).

For information on HIV testing and resources in Allegheny County, click on these links:

- [Allegheny County Health Department Public Health Clinic](#)
- [Allegheny County Free Condom Distribution Program](#)
- [AIDS Free Pittsburgh HIV Testing](#)
- [AIDS Free Pittsburgh PrEP](#)
- [Prevention Point](#) syringe exchange program

TABLES

Table 1. Newly Diagnosed HIV Cases and People Living with HIV/AIDS in Allegheny County through 2021

Characteristic	New HIV Cases			People Living with HIV
	1982-2015 n (%)	2016-2020 n (%)	2021 n (%)	2021
Total	4,635	432	89	3,616
Sex at Birth				
Male	3,841 (83)	370 (86)	76 (85)	2,947
Female	794 (17)	62 (14)	13 (15)	669
Race				
White	2,273 (49)	145 (34)	30 (34)	1,551
Black/African American	1,950 (42)	238 (55)	52 (58)	1,562
Hispanic	127 (3)	22 (5)	3 (3)	196
Asian/Pacific Islander	34 (1)	4 (1)	0 (0)	41
Native American	1 (0)	0 (0)	1 (1)	1
Multirace	250 (5)	23 (5)	3 (3)	265
Current Age				
<=14	34 (1)	1 (0)	0 (0)	6
15-24	668 (14)	117 (27)	15 (17)	82
25-34	1,619 (35)	142 (33)	34 (38)	615
35-44	1,378 (30)	65 (15)	24 (27)	652
45-54	673 (14)	59 (14)	11 (12)	770
55-64	214 (5)	40 (9)	3 (3)	1,014
>=65	49 (1)	8 (2)	2 (2)	477
Risk Factor				
MSM ^a	2,769 (60)	294 (68)	55 (62)	2,208
IDU ^b	572 (12)	23 (5)	0 (0)	234
MSM & IDU	220 (5)	9 (2)	3 (3)	173
Heterosexual Contact	717 (15)	98 (23)	28 (31)	739
Perinatal Mode	28 (1)	1 (0)	0 (0)	32
Other ^c	69 (1)	0 (0)	0 (0)	15
Unknown Risk	260 (6)	7 (2)	3 (3)	215

^a MSM = Men who have Sex with Men

^bIDU = Injection Drug Use

^cOther = No identified risk or no reported risk

Table 2. Newly Diagnosed HIV Cases and Concurrent AIDS Diagnoses, Allegheny County, 2021

Characteristic	New HIV Cases, N	Concurrent Diagnoses [#] , n (%)
Total	89	24 (27)
Sex at Birth		
Male	76	18 (24)
Female	13	6 (46)
Race		
White	30	9 (30)
Black/African American	52	13 (25)
Hispanic	3	1 (33)
Asian/Pacific Islander	0	0 (0)
Native American	1	1 (100)
Multirace	3	0 (0)
Age		
<=14	0	0 (0)
15-24	15	2 (13)
25-34	34	5 (15)
35-44	24	10 (42)
45-54	11	4 (36)
55-64	3	2 (67)
>=65	2	1 (50)
Risk Factor		
MSM*	55	10 (18)
IDU*	0	0 (0)
MSM/IDU	3	1 (33)
Heterosexual Contact	28	12 (43)
Perinatal Mode	0	0 (0)
Unknown Risk	3	1 (33)

[#]Concurrent diagnosis is defined as AIDS diagnosis within 90 days of initial HIV infection

*MSM = Men who have Sex with Men, IDU = Injection Drug Use

Table 3. Number and Rate of New HIV Diagnoses by Sex and Race, Allegheny County, 2021

Race/Ethnicity	Male	Estimate Population ^α	Rate*	Female	Estimate Population ^α	Rate*	Total Cases
Black (non-Hispanic)	42	73,422	57.2	10	85,404	11.7	52
White (non-Hispanic)	28	467,726	6.0	2	495,205	0.4	30
Hispanic	3	13,438	22.3	0	13,169	0.0	3
Other	3	49,333	6.1	1	40,393	2.5	4
Total	76	603,919	12.6	13	634,171	2.0	89

*Incidence per 100,000 population based on U.S. Census Bureau estimated population data (per demographic variable)

^α Based on U.S. Census Bureau estimated population data from 2020

Table 4. Number and Rate of New HIV Diagnoses by Sex and Age Group, Allegheny County, 2021

Age Group	Male	Estimate Population ^α	Rate*	Female	Estimate Population ^α	Rate*	Total Cases
<=24 Years	15	170,529	8.8	0	166,041	0.0	15
25-34 Years	32	93,919	34.1	2	91,564	2.2	34
35-44 Years	17	82,456	20.6	7	79,359	8.8	24
45-54 Years	7	69,348	10.1	4	70,509	5.7	11
55-64 Years	3	81,869	3.7	0	88,522	0.0	3
>= 65 Years	2	105,798	1.9	0	138,176	0.0	2
Total	76	603,919	12.6	13	634,171	2.0	89

*Incidence per 100,000 population based on U.S. Census Bureau estimated population data (per demographic variable)

^α Based on U.S. Census Bureau estimated population data from 2020

Table 5. Percentage of Hospitalizations with any Primary or Secondary HIV/AIDS-related Code by Year, Allegheny County, 2011 - 2020

Year	HIV/AIDS-related Hospitalizations (n)	Total Hospitalizations (N)	Percentage of Hospitalizations with HIV/AIDS-related code (%)
2011	663	183,202	0.36
2012	604	176,849	0.34
2013	648	174,072	0.37
2014	646	169,046	0.38
2015	634	166,905	0.38
2016	636	164,219	0.39
2017	577	162,381	0.36
2018	674	159,246	0.42
2019	647	151,211	0.43
2020	529	134,591	0.39
Total	6,258	1,641,722	0.38

Table 6. Most Common Zip Codes of Residence for Patients with HIV-related Hospitalizations in Allegheny County, 2011-2020 (N=6,258)

Zip Code	Neighborhood	HIV-Related Hospitalizations	Percent all HIV-Related Hospitalizations
15221	Wilkinsburg, Forest Hills, Braddock Hills	484	7.7%
15212	East Allegheny, North Shore, Brighton Heights	413	6.6%
15206	East Liberty, Larimer, Highland Park, Morningside	325	5.2%
15210	Mt. Oliver, Carrick	315	5.0%
15132	McKeesport, Versailles	314	5.0%
15214	Perry South, Summer Hill, Northview Heights	273	4.4%
15235	Penn Hills, Churchill, Lincoln Park, Eastvue	239	3.8%
15219	Hill District, Downtown	236	3.8%
15208	Point Breeze, Homewood	174	2.8%
15104	Braddock	150	2.4%

FIGURES

Figure 1. Newly Diagnosed HIV Cases by Sex at Birth, Allegheny County, 2012-2021*

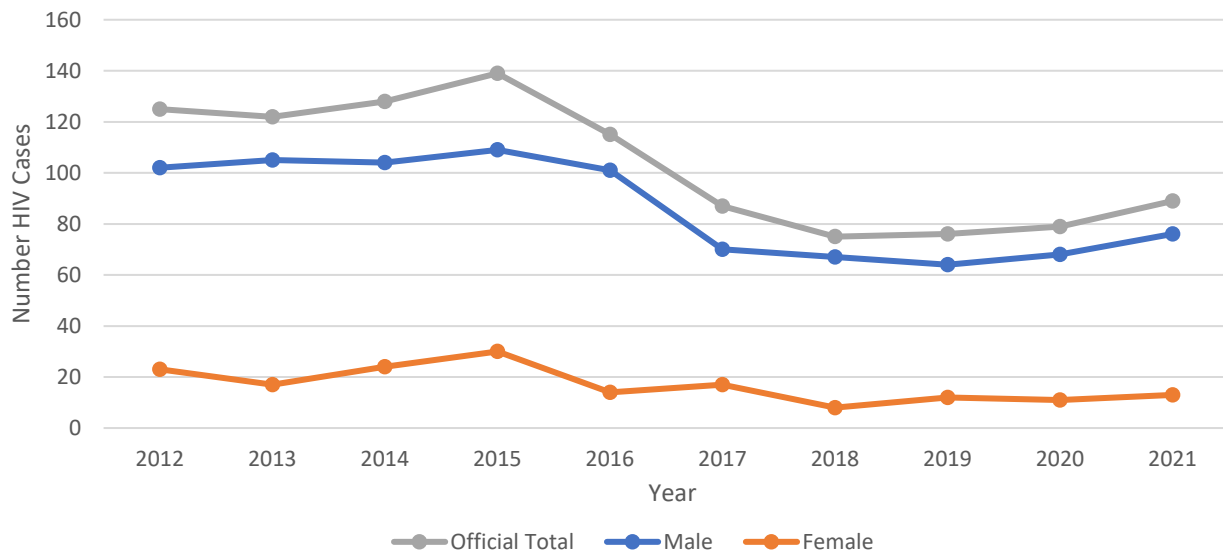


Figure 2. Newly Diagnosed HIV Cases by Age Group, Allegheny County, 2016-2021

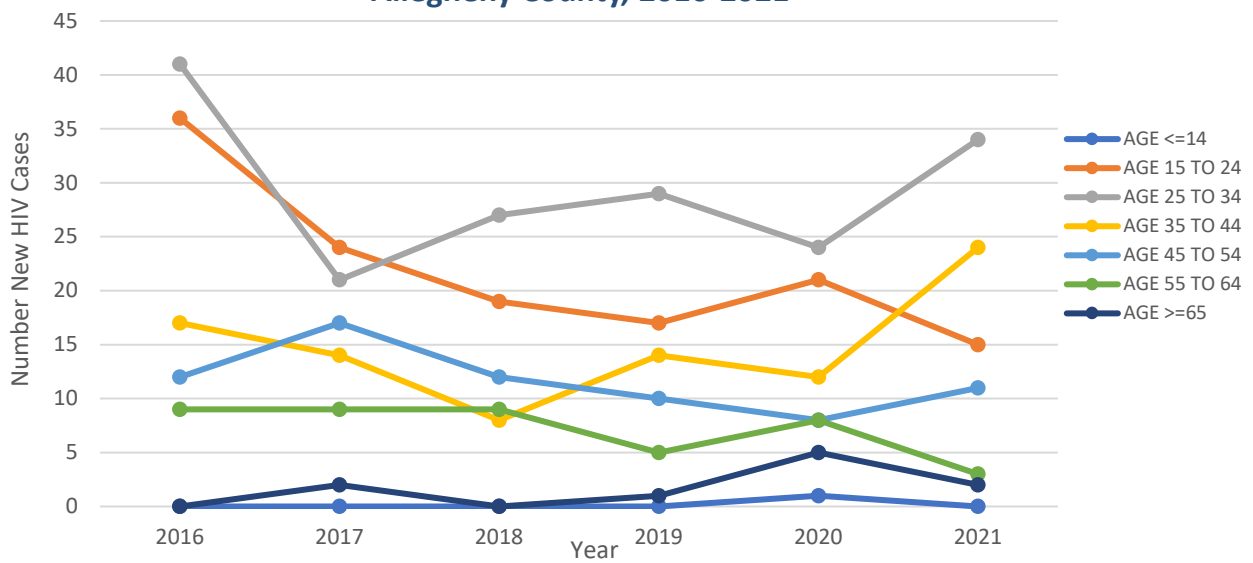
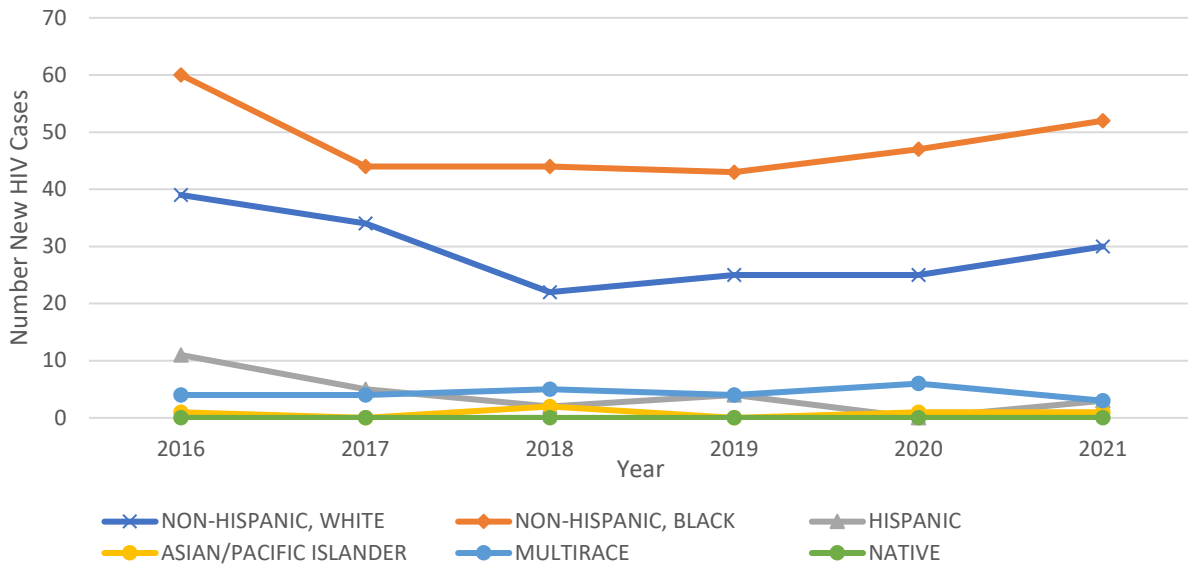
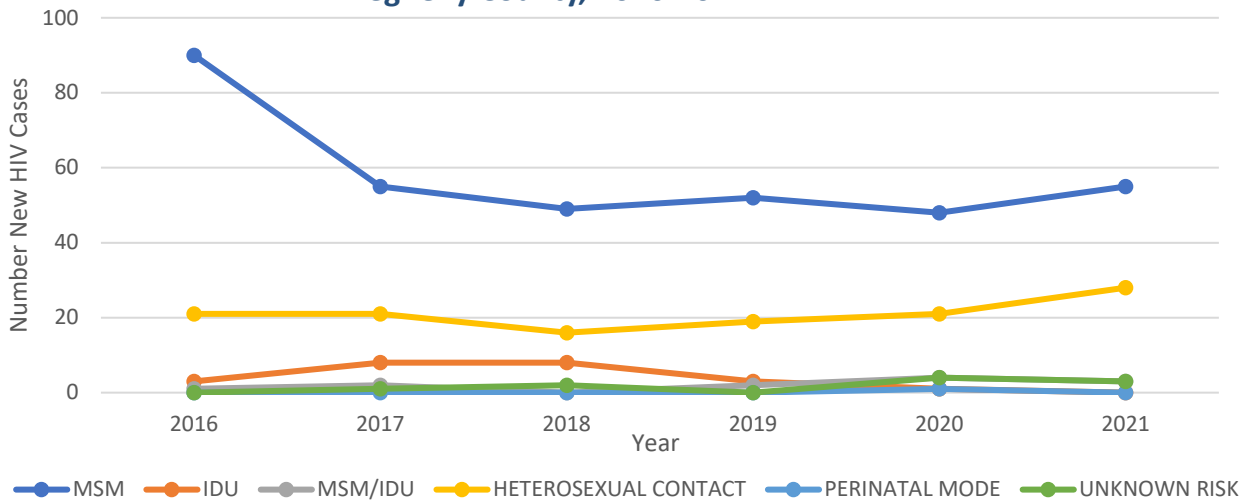


Figure 3. Newly Diagnosed HIV Cases by Race/Ethnicity, Allegheny County, 2016-2021



*Data are presented for the past 6 years to show more recent trends by this specific demographic

Figure 4. Newly Diagnosed HIV Cases by Risk Factor, Allegheny County, 2016-2021



*Data are presented for the past 6 years to show more recent trends by this specific demographic

Figure 5. HIV/AIDS-related Hospitalizations by Year, Allegheny County, 2011-2020

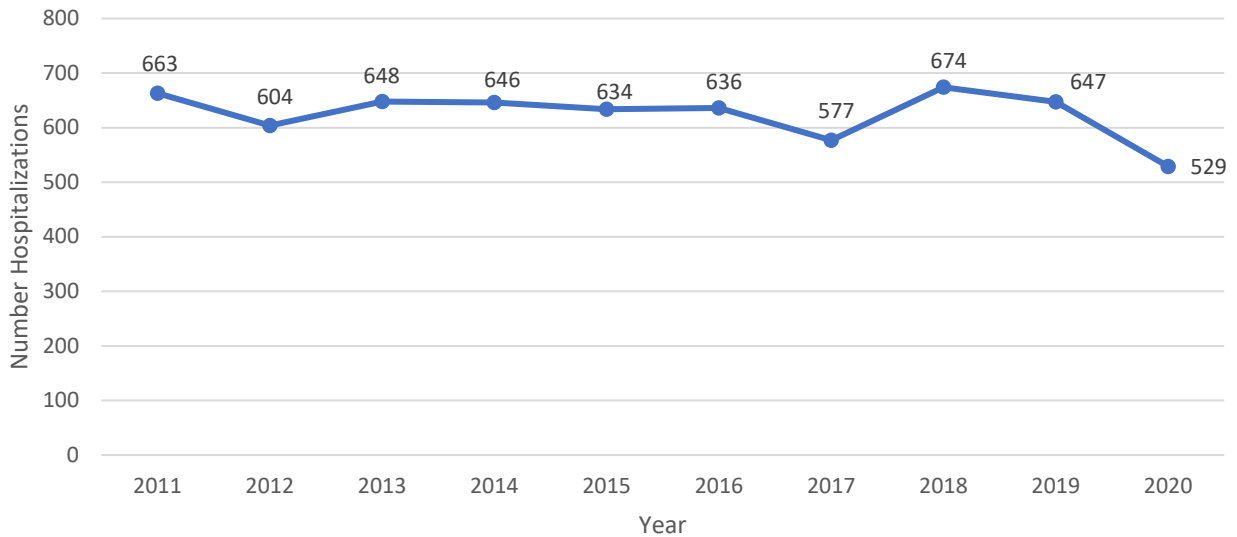
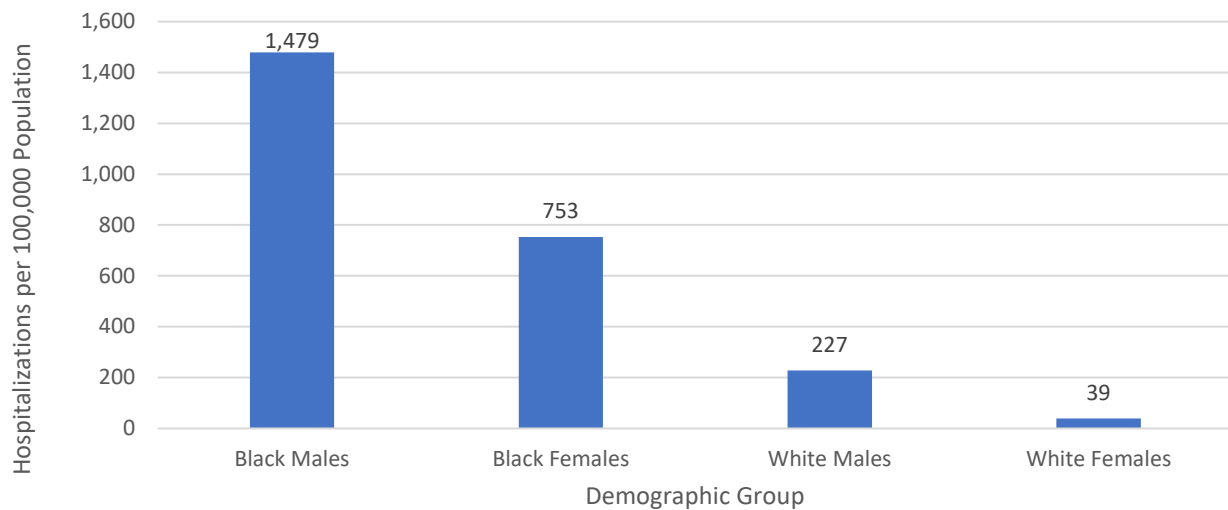
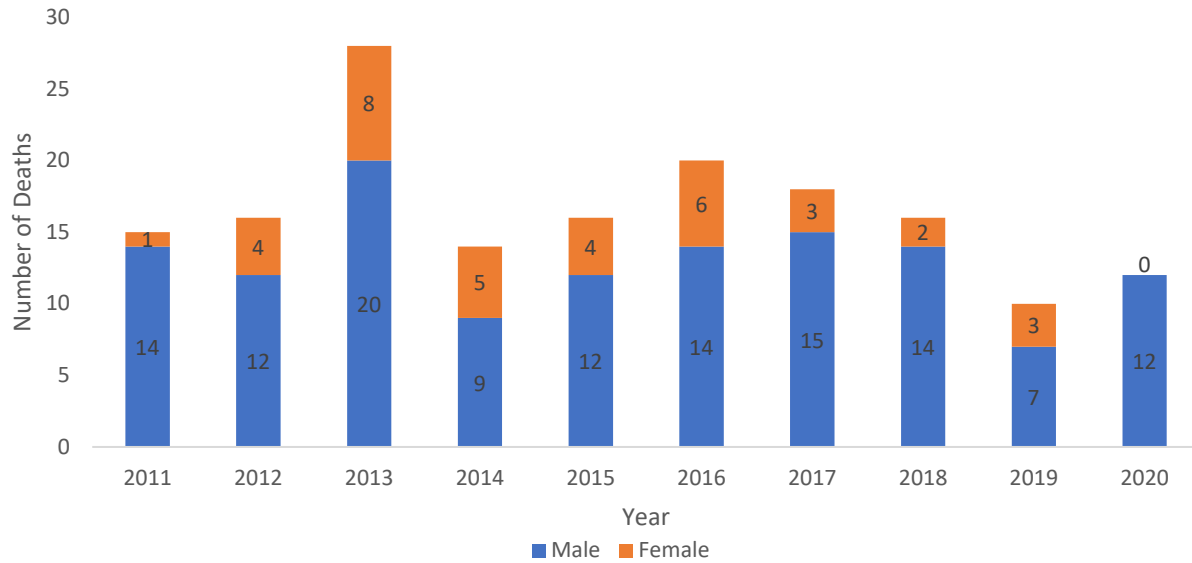


Figure 6. Rate of HIV-Related Hospitalizations per 100,000 Population by Race and Sex, Allegheny County, 2016-2020



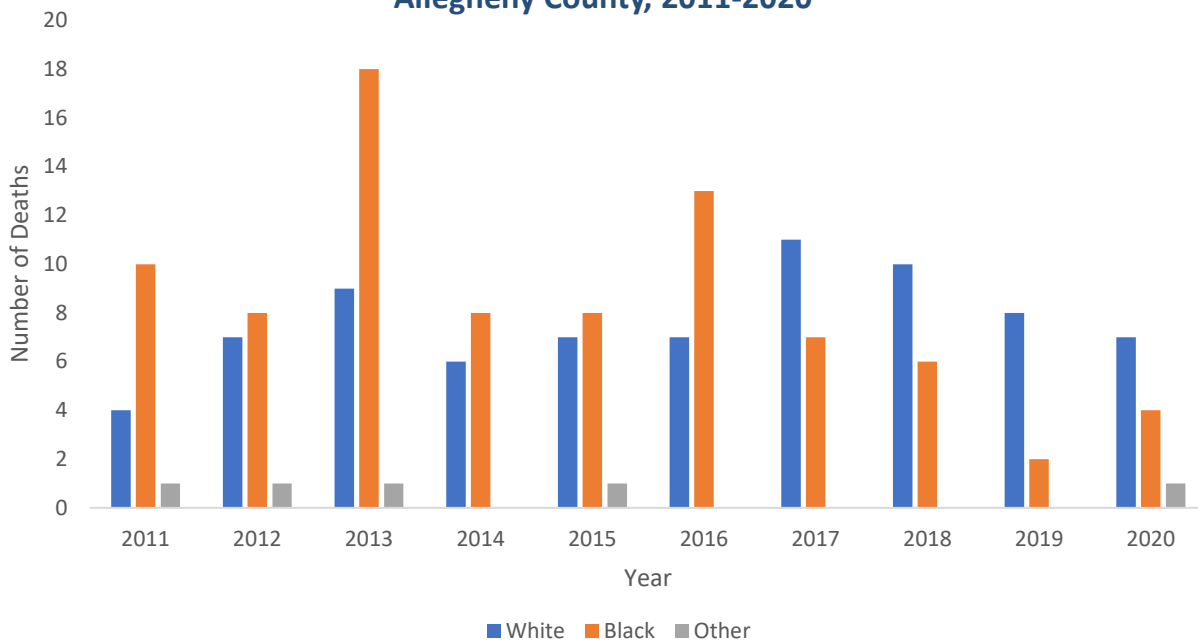
*Data are presented for the 5-year period to show more recent burden by these specific demographic groups

Figure 7. HIV/AIDS-related Deaths by Year and Sex, Allegheny County, 2011-2020

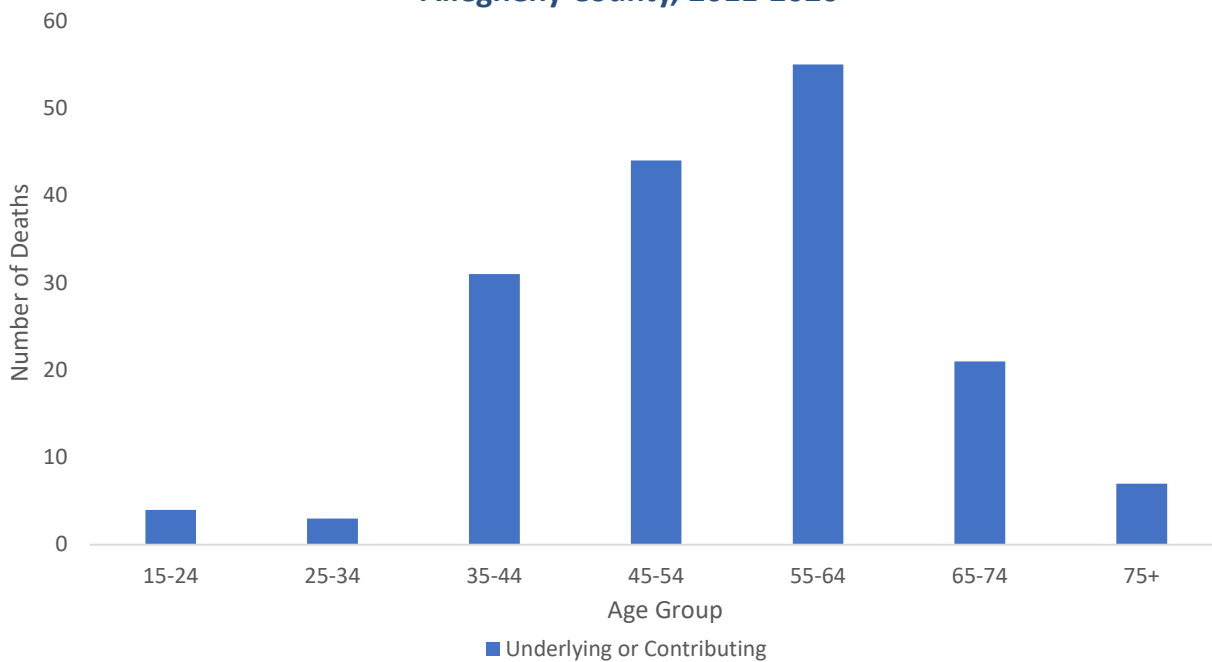


Note: Data from 2020 are preliminary and have not yet been updated with final counts.

Figure 8. HIV/AIDS-Related Deaths by Race, Allegheny County, 2011-2020



**Figure 9. HIV/AIDS-related Deaths by Age Group,
Allegheny County, 2011-2020**



Note: No deaths occurred among those aged 0-14 years.

APPENDIX

HIV/AIDS-Related Hospitalization Methodology

To assess the number of HIV/AIDS-related hospitalizations among Allegheny County residents, we analyzed hospital inpatient discharge data from 2011 through 2020. Data were provided by the Pennsylvania Health Care Cost Containment Council (PHC4), which collects statewide inpatient discharge data from hospitals and ambulatory surgical centers.² PHC4 collects information from the [Uniform Claims and Billing Form](#); most of the data are provided based on Uniform Billing standards. For this analysis, we included all hospitalizations for which an HIV diagnosis code was recorded. Some HIV-related hospitalizations may not be counted if an HIV diagnosis was not listed in these billing codes; conversely, some hospitalizations may be counted even if HIV status was not related to the hospitalization if an HIV code was listed as a diagnosis for the admission.

We analyzed the inpatient discharge data among Allegheny County residents by year to assess the number of hospitalizations related to HIV. Hospitalizations were considered related to HIV if the primary or any secondary diagnosis included an ICD code that designated a condition related to HIV. At the time of writing this report, hospitalization data were available up to 2020; we report on the 10-year period prior. Of note, facilities switched from using ICD-9 codes to using ICD-10 codes in October of 2015. Below is a list of the ICD-9 and ICD-10 codes we used to search for HIV-related hospitalizations before and after October 1, 2015.

ICD-9 Codes:

- 042 - Human immunodeficiency virus [HIV] disease
- 079.53 - Human immunodeficiency virus, type 2 [HIV-2]
- V08 - Asymptomatic human immunodeficiency virus (HIV) infection status

ICD-10 Codes:

- B20 - Human immunodeficiency virus [HIV] disease
- B97.35 - Human immunodeficiency virus, type 2 [HIV 2] as the cause of diseases classified elsewhere
- Z21 - Asymptomatic human immunodeficiency virus [HIV] infection status

² The Pennsylvania Health Care Cost Containment Council (PHC4) is an independent state agency responsible for addressing the problem of escalating health costs, ensuring the quality of health care, and increasing access to health care for all citizens. While PHC4 has provided data for this study, PHC4 specifically disclaims responsibility for any analyses, interpretations or conclusions.

HIV/AIDS-Related Deaths Methodology

To assess the number of HIV/AIDS-related deaths among Allegheny County residents, we analyzed death certificate data from 2011 through 2020. At the time of writing this report, mortality data were available through 2020; we report on the 10-year period prior. Data were abstracted from vital records from the PA Department of Health Bureau of Health Statistics and Registries. Deaths were classified as HIV/AIDS related if the death certificate had HIV/AIDS (ICD-10 codes B20-B24) listed as a cause of death or contributing cause. Population data were taken from the [United States Census Bureau American Community Survey](#) estimates, and estimates for the number of PLWHA were taken from the [PA Annual HIV Surveillance Report](#).