

**ALLEGHENY COUNTY  
HEALTH DEPARTMENT**

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**HIV  
EPIDEMIOLOGIC  
PROFILE**

**2013-2022**

# **HIV EPIDEMIOLOGIC PROFILE, ALLEGHENY COUNTY, PA, 2013-2022**

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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 individual living with HIV; 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 virus 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, Pennsylvania. These data are used to monitor trends in the epidemic and identify groups who may be disproportionately affected for prevention and outreach efforts.

## Newly Diagnosed HIV

In 2022, 72 new diagnoses of HIV were reported among Allegheny County residents, down from 89 new diagnoses in 2021.<sup>1</sup> Most new diagnoses of HIV have occurred among males since the start of the epidemic, with 85% of new diagnoses among males in 2022 (Table 1). Historically, fewer non-Hispanic Black persons were diagnosed with HIV; however, since 2016, non-Hispanic Black persons have accounted for more than 50% of all new diagnoses. Most new HIV diagnoses since 2016 have been among persons aged 15 to 34 years, with 65% of new diagnoses in 2022 among this age group. There were no perinatal or pediatric diagnoses reported in 2022. Men who have sex with men (MSM) have consistently been the largest group with newly diagnosed HIV, accounting for over 60% of diagnoses since 2016.

The number of new diagnoses in males decreased by about 20% from 2021 to 2022, following an increase from 2019 to 2021 (Figure 1). New diagnoses among females have been relatively stable, with a slight decrease in 2022 after an increase from 2020 to 2021.

The number of new diagnoses decreased among all age groups from 2021 to 2022, except for those under 25, for whom new diagnoses increased from 15 to 16 (Figure 2). Between 2017-2022, trends varied widely between age groups. Individuals 25-34 years have consistently had the largest burden of new HIV diagnoses, except in 2017.

From 2021 to 2022, there was a decrease in the number of new HIV diagnoses among non-Hispanic Black and non-Hispanic white individuals, as shown in Figure 3. Non-Hispanic Black persons made up the largest group of new diagnoses in 2022 with 39 (54%).

New HIV diagnoses among MSM decreased by 20% from 2021 to 2022 after an increase from 2020 to 2021 (Figure 4). MSM continued to account for a majority (61%) of new HIV diagnoses in 2022 (Table 1). New diagnoses of HIV among those reporting heterosexual contact decreased by 54% from 28 in 2021 to 13 in 2022. This is the first year new diagnoses have decreased among heterosexuals since 2018.

In 2022, the rate of new HIV diagnoses among Black males (40.9 per 100,000 population) was more than 8 times higher than the rate among white males (5.1 per 100,000 population). The overall rate among males was 10.1 per 100,000 population, while the overall rate among females was 1.7 per 100,000 population. Hispanic females had a higher rate of new diagnoses in 2022 (15.2 per 100,000 population) than females of other racial or ethnic groups.

Males 25-34 years of age had a higher rate of new HIV diagnoses in 2022 (30.9 per 100,000 population) than males in other age groups. The highest rate among females was among those 35-44 years (6.3 per 100,000 population).

### Concurrent Diagnosis

Concurrent diagnosis is defined as an AIDS diagnosis within 90 days of a new HIV diagnosis. Individuals who are concurrently diagnosed with HIV and AIDS receive care in later stages of HIV infection, leading to worse health outcomes and an increased risk of death. Over the past 9 years the percentage of individuals with a concurrent diagnosis peaked in 2019 at 36% but has since decreased (Figure 5). In 2022, 10 (14%) of 72 new HIV diagnoses were concurrently diagnosed with AIDS.

### HIV Care Continuum

The HIV care continuum is an indicator of how well patients remain engaged in care after their HIV diagnosis. Care includes attending clinic visits, starting antiretroviral treatment, and receiving viral load tests to evaluate treatment effectiveness. At the end of 2021 in Allegheny County there were an estimated 3,590 people living with HIV (PLWH) who had been diagnosed in 2020 or earlier. In 2021, 2,612 (73%) of these PLWH had an HIV care visit, which is defined by the CDC as having a CD4 cell count, viral load, or HIV genotyping test within the previous year (Figure 6). Of the 3,590 PLWH, 1,982 (55%) received at least one viral load test in 2021, and 1,834 (51%) were virally suppressed. Among individuals who received at least one viral load test, 93% were virally suppressed.

### HIV-Related Hospitalizations

From 2013 through 2022, there were a total of 6,087 hospitalizations in Allegheny County with HIV as a primary (n= 164) or secondary diagnosis (N= 5,923) (Table 2). The number of hospitalizations per year ranged from 529 to 674. Most of the hospitalizations were at acute care hospitals, with about 7% of annual hospitalizations at psychiatric hospitals; less than 1% of hospitalizations occurred at specialty, long-term acute care, or rehabilitation hospitals. The most common HIV-related ICD codes in the 10-year period were for 'asymptomatic human immunodeficiency virus (HIV) infection status' and 'HIV disease.' See Appendix for information on data source and analysis methodology.

Among the 6,087 HIV-related hospitalizations in 2013-2022, 56% occurred in individuals 50+ years, while 44% occurred in those 20-49 years. A large disparity was observed between racial groups; Black individuals accounted for 58% of HIV-related hospitalizations, while white persons only accounted for 40%. Males accounted for most (71%) HIV-related hospitalizations in this period.

HIV-related hospitalizations comprised an average of 0.38% of all hospitalizations between 2013-2022, ranging from 0.36% of hospitalizations in 2017 to 0.43% of hospitalizations in 2019 (Table 2).

Although there were fewer hospitalizations of any cause among males compared to females, there were more HIV-related hospitalizations among males. HIV-related hospitalizations accounted for 0.64% of hospitalizations among males, but 0.20% of hospitalizations among females.

From 2013 to 2022, the number of hospitalizations for any cause among white persons was more than 4 times greater than the number of hospitalizations among Black persons, but the number of HIV-related hospitalizations was greater for Black persons. The percentage of hospitalizations with an HIV diagnosis among Black persons (1.22%) was almost 6 times greater than the percentage among white persons (0.21%).

From 2013 to 2022, HIV-related hospitalizations decreased among individuals 20-49 years, but increased among individuals 50+ years; however, more than twice as many hospitalizations among 20-49-year-olds were HIV-related (0.71%) as compared to hospitalizations among individuals 50+ years (0.35%).

The number of HIV-related hospitalizations per 100,000 population was highest among Black males, followed by Black females in 2018-2022 (Figure 7). The rate in Black males was 7.5 times higher than the rate in white males, while the rate in Black females was 20.1 times higher than the rate in white females.

Table 3 shows the most common zip codes of residence for patients with HIV-related hospitalizations from 2013 through 2022. Of the 6,087 HIV-related hospitalizations in that period, the five most common zip codes of residence were in the areas of Wilkesburg, North Shore, and McKeesport.

There was a wide range of primary diagnoses for hospitalizations with HIV as a secondary diagnosis. Of the 2,946 hospitalizations from 2018 to 2022, 93 (3%) had alcohol dependence with withdrawal as the primary diagnosis. Additional primary diagnoses included shortness of breath (3%), major depressive disorder (2%), sepsis (2%), and pneumonia (2%).

## HIV-Related Deaths

From 2013 through 2022, a total of 164 HIV-related deaths occurred among residents of Allegheny County, an average of 16 deaths per year. The average annual HIV-related mortality rate is 1.3 per 100,000 population. Figure 8 shows the number of deaths per year with HIV 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 source and methodology.

Males died from HIV-related causes at a rate almost 4 times that of females from 2013 through 2022. The average annual rate of HIV-related deaths among males was 2.1 deaths per 100,000, while the rate among females was 0.6 deaths per 100,000 during this 10-year period.

HIV disproportionately contributed to deaths among Black individuals in Allegheny County from 2013 through 2022 compared to white individuals (Figure 9). The average annual HIV-related mortality rate

among Black persons was 5.3 deaths per 100,000, more than six times that of white persons (0.8 deaths per 100,000).

Figure 10 shows the rate of HIV-related deaths by age group from 2013 through 2022. The highest rate of HIV-related deaths occurred in individuals 55-64 years, followed by those 45-54 years.

## HIV DISEASE Resources

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

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

Locally, AIDS Free Pittsburgh (AFP) is a public health movement 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 Allegheny County and to improve the care of people living with HIV. 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. New HIV Diagnoses and People Living with HIV in Allegheny County**

Characteristic	New HIV Diagnoses			People Living with HIV
	1982-2015 n (%)	2016-2021 n (%)	2022 n (%)	2022
<b>Total</b>	<b>4,635</b>	<b>521</b>	<b>72</b>	<b>3,734</b>
Sex at Birth				
Male	3,841 (83)	446 (86)	61 (85)	3,045
Female	794 (17)	75 (14)	11 (15)	689
Race/Ethnicity				
Non-Hispanic White	2,273 (49)	175 (34)	24 (33)	1,589
Non-Hispanic Black	1,950 (42)	290 (56)	39 (54)	1,589
Hispanic	127 (3)	25 (5)	ND <sup>d</sup>	218
Asian/Pac Isl/Native Amer	35 (1)	5 (1)	0 (0)	42
Multirace	250 (5)	26 (5)	ND	296
Age at Diagnosis (years)				
<=14	34 (1)	ND	0 (0)	7
15-24	668 (14)	132 (25)	16 (22)	78
25-34	1,619 (35)	176 (34)	31 (43)	618
35-44	1,378 (30)	89 (17)	15 (21)	715
45-54	673 (14)	70 (13)	6 (8)	742
55-64	214 (5)	43 (8)	ND	1,013
>=65	49 (1)	ND	ND	561
Risk Factor				
MSM <sup>a</sup>	2,769 (60)	349 (67)	44 (61)	2,280
IDU <sup>b</sup>	572 (12)	23 (4)	ND	240
MSM & IDU	220 (5)	12 (2)	ND	173
Heterosexual Contact	717 (15)	126 (24)	13 (18)	757
Perinatal Mode	28 (1)	ND	0 (0)	35
Other <sup>c</sup>	329 (7)	ND	10 (14)	249

<sup>a</sup> MSM = Men who have Sex with Men

<sup>b</sup>IDU = Injection Drug Use

<sup>c</sup>Other = No identified risk or no reported risk

<sup>d</sup>ND = Not displayed due to small numbers (1-4)



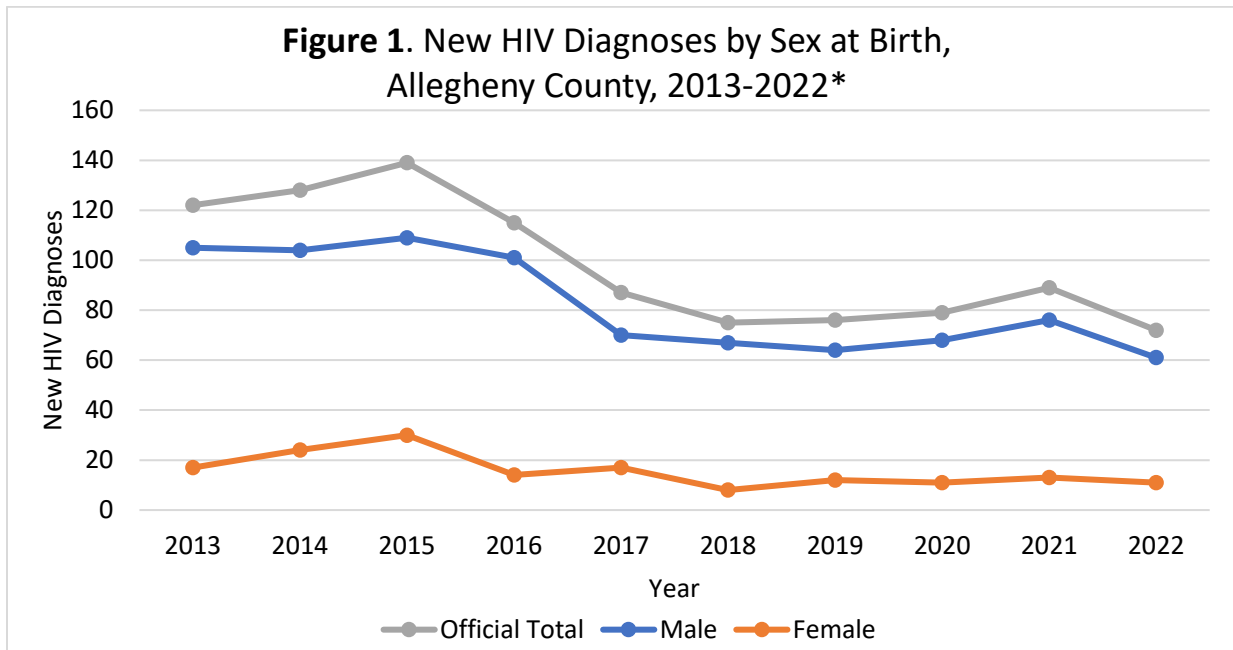
**Table 2.** Percentage of Hospitalizations with any Primary or Secondary HIV Code by Year, Allegheny County, 2013-2022

Year	HIV DISEASE-related Hospitalizations (n)	Total Hospitalizations (N)	Percentage of Hospitalizations with HIV DISEASE-related code (%)
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
2021	562	136,150	0.41
2022	534	126,793	0.42
<b>Total</b>	<b>6,087</b>	<b>1,544,614</b>	<b>0.39</b>

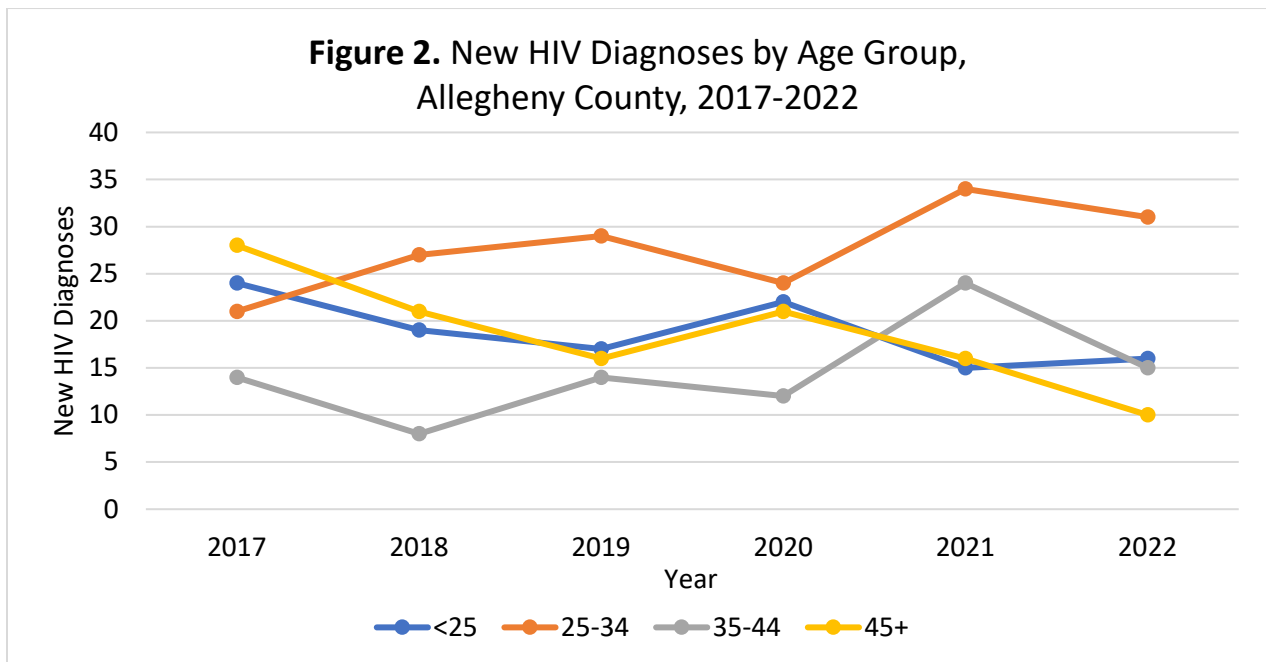
**Table 3.** Most Common Zip Codes of Residence for Patients with HIV-Related Hospitalizations in Allegheny County, 2013-2022 (N=6,087)

Zip Code	Neighborhood	HIV-Related Hospitalizations	Percent all HIV-Related Hospitalizations
15221	Wilkesburg, Forest Hills, Braddock Hills	474	7.8%
15212	East Allegheny, North Shore, Brighton Heights	398	6.5%
15132	McKeesport, Versailles	340	5.6%
15206	East Liberty, Larimer, Highland Park, Morningside	311	5.1%
15210	Mt. Oliver, Carrick	303	5.0%
15214	Perry South, Summer Hill, Northview Heights	300	4.9%
15235	Penn Hills, Churchill, Lincoln Park, Eastvue	244	4.0%
15219	Hill District, Downtown	214	3.5%
15208	Point Breeze, Homewood	184	3.0%
15104	Braddock	145	2.4%

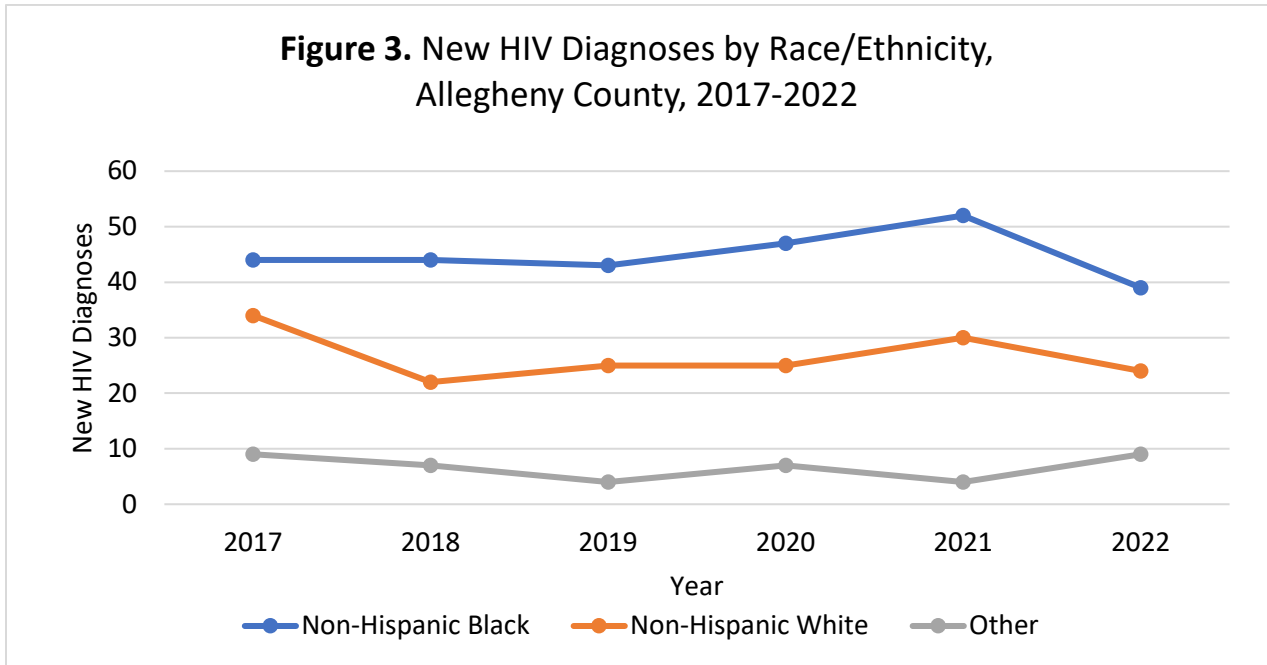
Figures



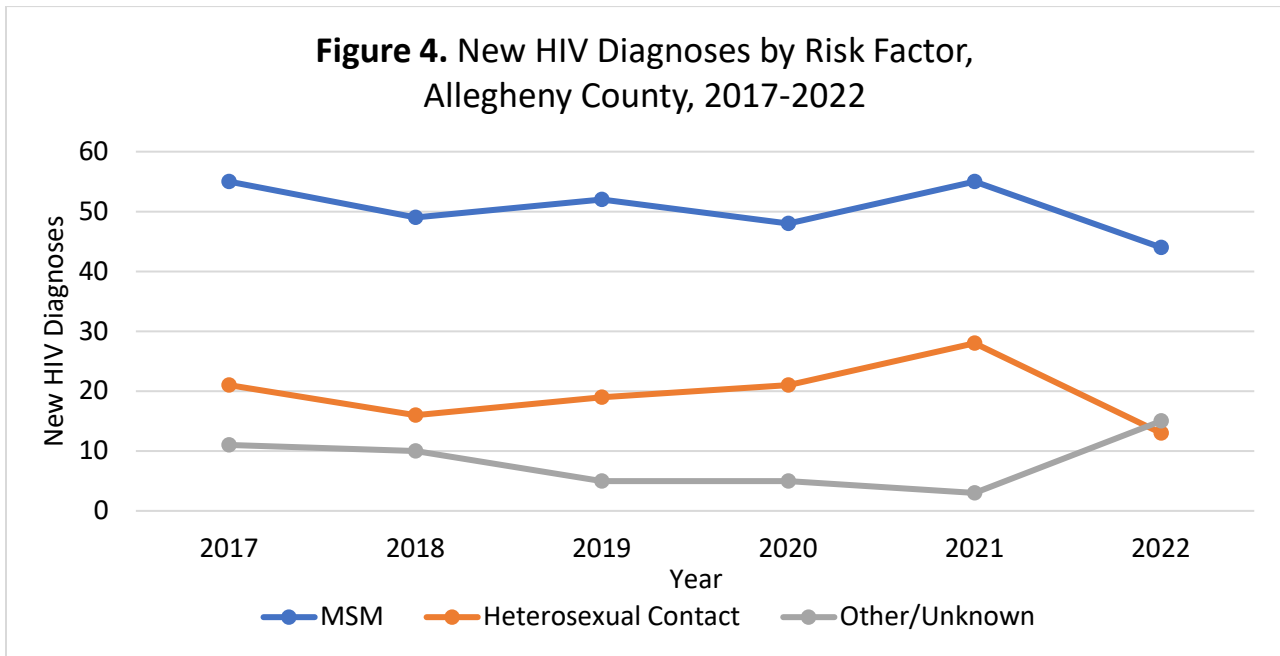
**\*NOTE:** In 2018-2022, individuals diagnosed with HIV who reside in Allegheny County, but were first diagnosed in a foreign country, were no longer included in the count of new HIV diagnoses in Allegheny County, as done previously. PA Department of Health retroactively applied this methodology to data from 2018-2019. It is currently unknown how these new methods impact case counts prior to 2018 and thus, it is difficult to draw conclusions about any trends before and after the change in methodology. The official total reflects these changes.



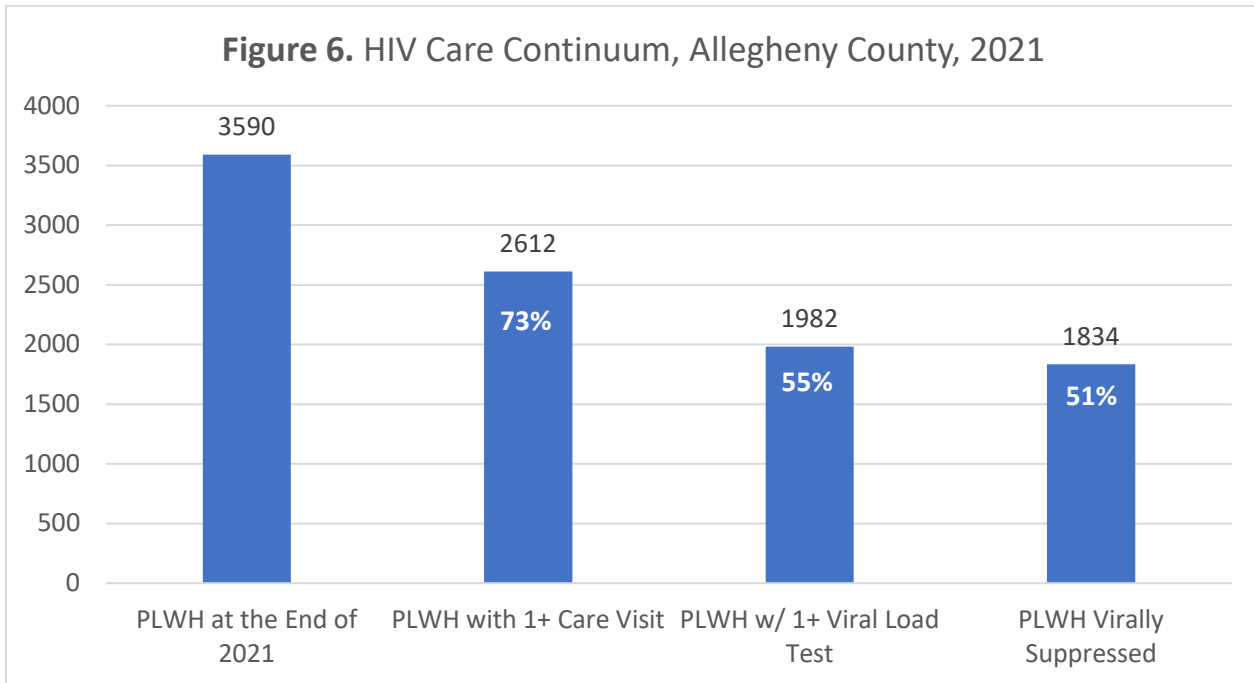
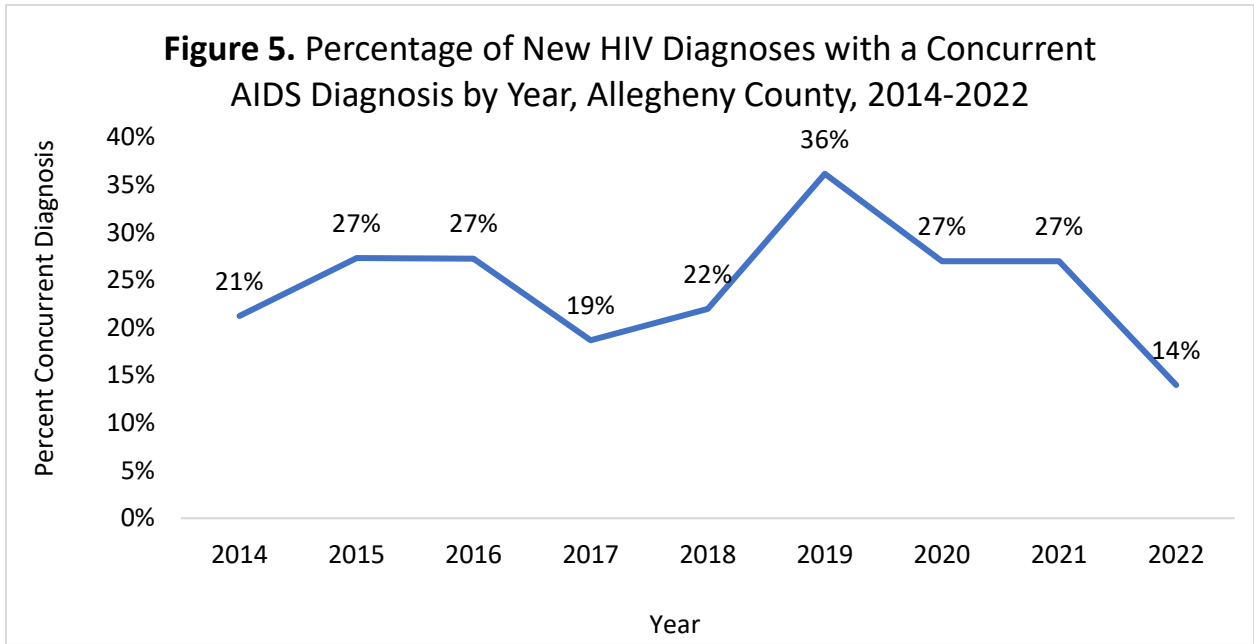
\*Data are presented for the past 6 years to show more recent trends by this specific demographic



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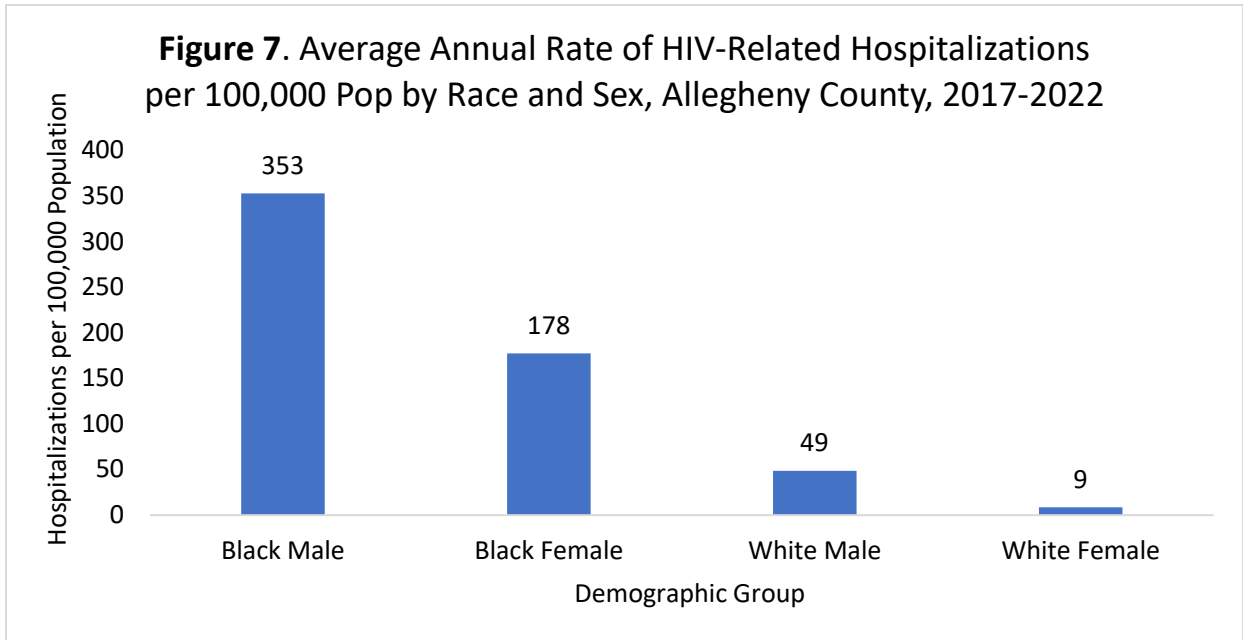


\*Data are presented for the past 6 years to show more recent trends by this specific demographic

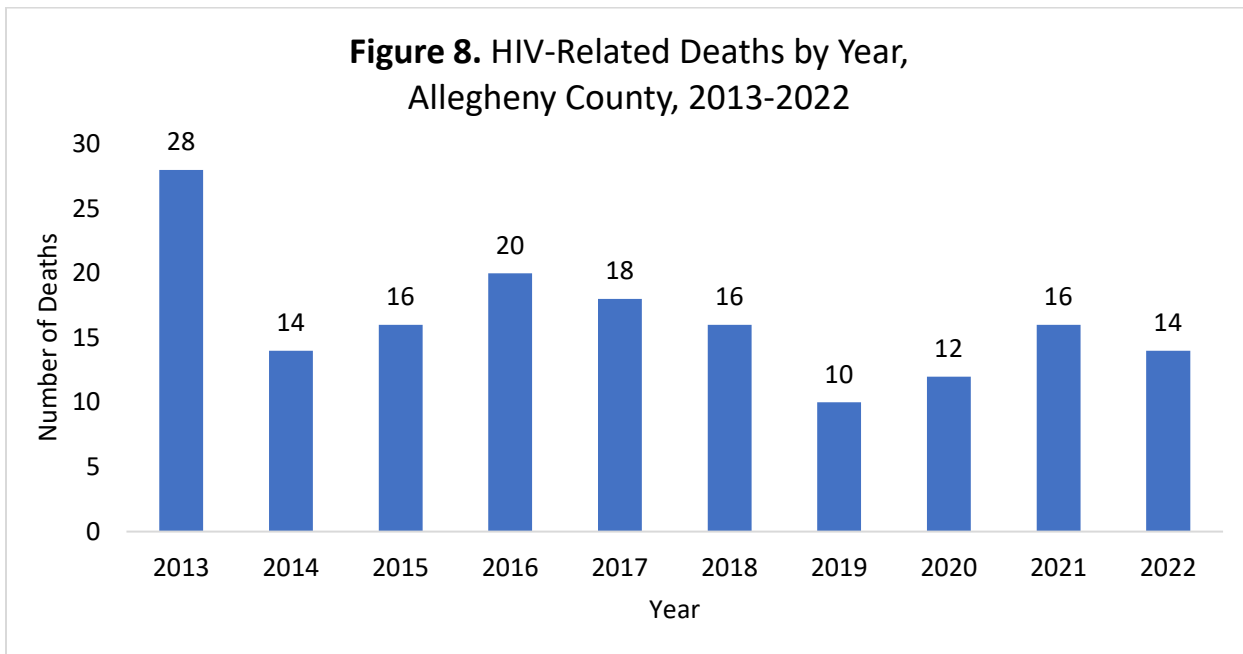


\*PLWH at end of 2021= PLWH diagnosed by end of year 2020 and alive at the end of 2021

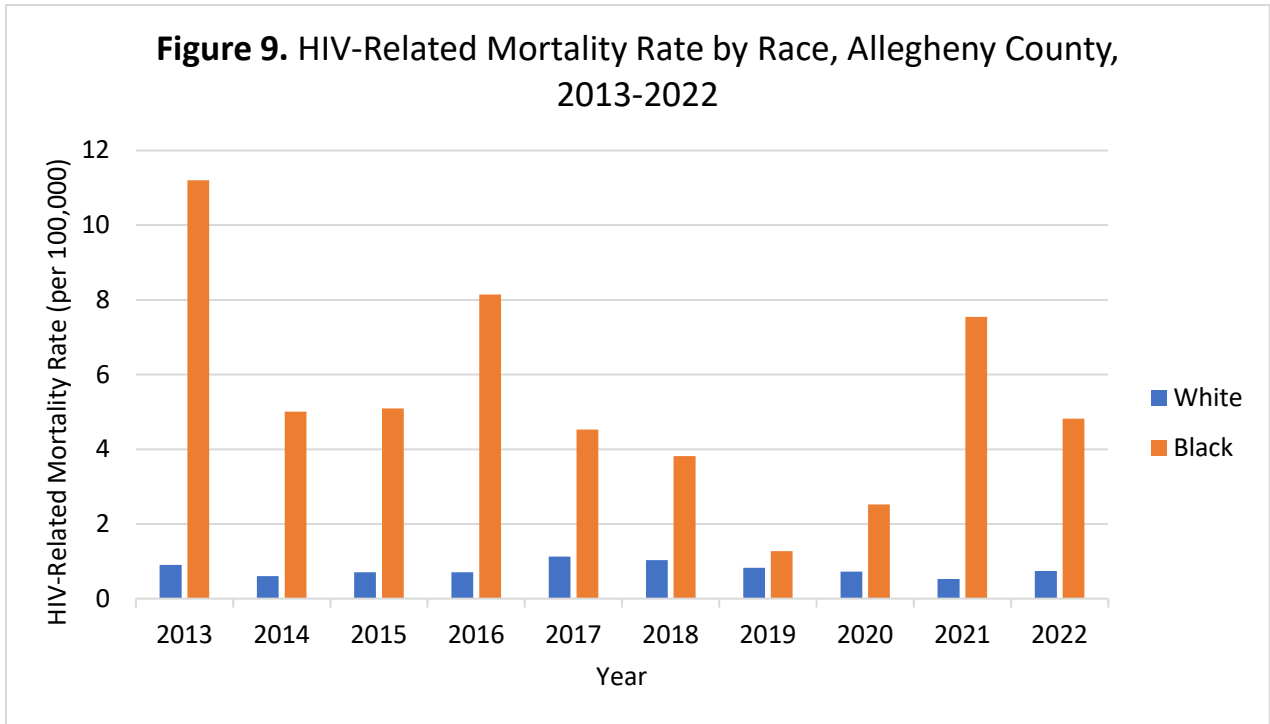
\*1+ Care Visit = documentation of  $\geq 1$  CD4 or VL or HIV-1 genotype test during the calendar year.



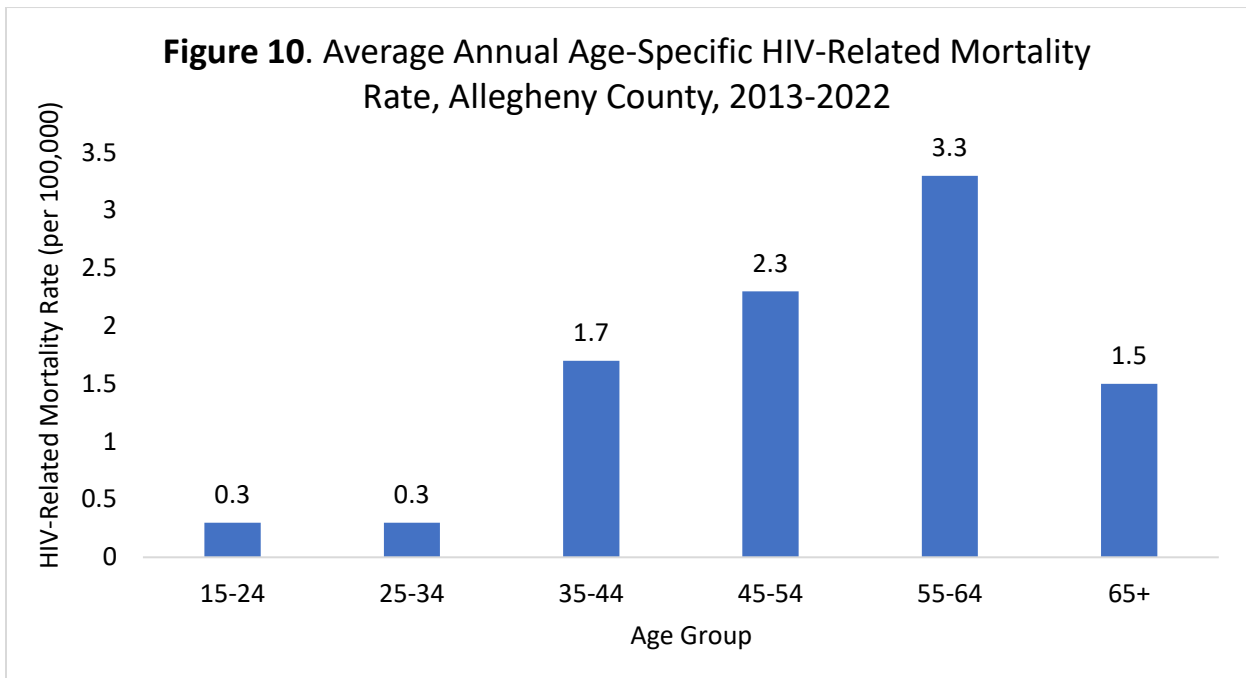
\*Data are presented for the 5-year period to show more recent burden by these specific demographic groups



**Note:** Data from 2021 and 2022 are preliminary and have not yet been updated with final counts.



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

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## Appendix

### **HIV-Related Hospitalization Methodology**

To assess the number of HIV-related hospitalizations among Allegheny County residents, we analyzed hospital inpatient discharge data from 2013 through 2022. Data were provided by the Pennsylvania Health Care Cost Containment Council (PHC4), which collects statewide inpatient discharge data from hospitals and ambulatory surgical centers. 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 2022; 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

### **HIV-Related Deaths Methodology**

To assess the number of HIV-related deaths among Allegheny County residents, we analyzed death certificate data from 2013 through 2022. Data were abstracted from vital records from the PA Department of Health Bureau of Health Statistics and Registries. Deaths were classified as HIV-related if the death certificate had HIV disease (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 PLWH were taken from the [PA Annual HIV Surveillance Report](#).