Integrated HIV Epidemiology Profile

2022-2026

Bureau of Epidemiology

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pennsylvania
DEPARTMENT OF HEALTH

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Disclaimer

The PA Department of Health, Bureau of Epidemiology, Bureau of Communicable Diseases, Division of HIV Disease, and Bureau of Health Statistics and Registries specifically disclaim responsibility for any analyses, interpretations, or conclusions made by the user of this report.

Abbreviations

ADAP   AIDS Drug Assistance Program

AIDS   Acquired immunodeficiency syndrome

BRFSS   Behavioral Risk Factor Surveillance System

CDC   Centers for Disease Control and Prevention

eHARS   enhanced HIV/AIDS Reporting System

HIV   Human Immunodeficiency virus

HRSA   Health Resources and Services Administration

IDU   Injection drug use

IHPCP   Integrated HIV prevention and care plan

MSM   Gay, bisexual, and other men who have sex with men

OMB   Office of Management and Budget

PA-NEDSS   Pennsylvania National Electronic Disease Surveillance System

PLWH   People living with HIV

PWID   People Who Inject Drugs

RWHAP   Ryan White HIV/AIDS Programs

SPBP   Special Pharmaceuticals Benefits Program

STD   Sexually transmitted disease(s)

YRBS   Youth Risk Behavior Survey

Executive Summary

This epidemiologic profile provides information on newly diagnosed HIV disease, people living with HIV (PLWH), HIV diagnosed prevalence rate, mortality among people diagnosed with HIV, care continuum, comorbidities, disparity, and social determinants of health. This information is based on available data resources, and we will continue to update the Integrated HIV prevention and care plan (IHPCP) annually. All analyses are reported up to the year 2020 except for the sections on the HIV care continuum and HIV comorbidities that are reported up to the year 2019. Also, HIV transmission cluster and outbreaks in PA are reported up to the year 2021.

Since the inception of the HIV epidemic through the end of the year 2020, a total of 63,204 people have been diagnosed with HIV disease in the Commonwealth of PA. An estimated 39,909 PLWH are currently residing in PA. The number of PLWH increased from 39,402 at year-end 2016 to 39,909 at year-end 2020. The number of PLWH continues to increase as more people are living longer because of advances in diagnosis, medical treatment, and care.

On the other hand, the number of newly diagnosed HIV disease is declining. In 2011, 1,386 people were newly diagnosed with HIV disease compared to 779 people in 2020. This represents a 43.8% decline in new HIV diagnoses. However, the year 2020 data should be interpreted with caution because of the impact of the COVID-19 pandemic on HIV surveillance and services.

HIV affects people of different ages, sex, race, and ethnicity. Disparities were observed in the newly diagnosed HIV disease rate by sex and race/ethnicity. In 2020, the rate of newly diagnosed HIV disease in PA was 6.1 per 100,000 population overall, but the rate for males (9.8 per 100,000 male population) was almost four times the rate for females (2.5 per 100,000 female population). Also, HIV diagnosis rates were highest among Black/African American males (42.7 per 100,000 Black/African American population) and females (12.6 per 100,000 Black/African American population). Among males, the rate of newly diagnosed HIV disease for Black/African American males was ten times (42.7 per 100,000 Black/African American male population) more than the rates for white males (4.3 per 100,000 white male population). Likewise, Black/African American females had rates that were approximately 16 times (12.6 per 100,000 Black/African American female population) that of white females (0.8 per 100,000 white female population). The overall rate of newly diagnosed HIV disease in Blacks/African Americans (27.1 per 100,000 population) was approximately 11 times the rate for white individuals (2.5 per 100,000 population) and more than twice the rate (12.9 per 100,000) for Hispanics/Latinos.

In comparing numbers of newly diagnosed HIV disease with the sociodemographics of the state, the HIV epidemic disproportionately impacts Blacks/African Americans and Hispanics/Latinos. Blacks/African Americans accounted for almost half (48.5% or 378/779) of all newly diagnosed HIV disease in the year 2020, and 12% of the general population of PA. Hispanics/Latino accounted for 16.6% (129/779) newly diagnosed HIV disease and 7.8% of the general population of PA compared to white people who accounted for 81.6% of the general population of PA and 31.2% (243/779) of newly diagnosed HIV disease in the year 2020. Therefore, 65.1% (507/779) of all newly diagnosed HIV disease in 2020 were among Blacks/African Americans and Hispanics.

The impact of poverty and lack of health insurance on the health and well-being of the population cannot be overemphasized. Social networks and the dynamics of stigma are some of the many factors contributing to health disparities. According to the 2019 American Community Survey 1-Year Estimates, the population of Pennsylvanians determined to be living below the poverty level in the past 12 months was 12% (±0.3%), which is comparable to the level in the entire United States of 12.3% (±0.1%). However, disparities existed by sex and race/ethnicity. More females were in poverty than males (13% versus 10.9%). White individuals also had the lowest poverty level at 9.3% compared to Blacks/African Americans at 24.9%, Hispanic/Latinos at 26.2%, or American Indian/Alaska Natives at 20.4%. The poverty level among Asians was 12.7%, while those persons who identified as having two or more races was 19.3%. Race/ethnicity is not the predisposing or causal factor in disease occurrence, but rather social determinants of health like poverty (lack of income or low income) and lack of insurance (which may limit access to healthcare) impact health outcomes.[1,2]

The annual number of diagnoses of HIV disease has continued to decrease from year to year since the mid-1990s. However, individuals aged 25 to 34 years and men who have sex with men (MSM) are at a higher risk of acquiring HIV. MSM comprised over half (52.2% or 407/779) of all newly diagnosed HIV disease in the year 2020 and 52% (2,593/4,991) from the year 2016 to the year 2020. Among males, MSM accounted for 66% (2,593/3,890) of all newly diagnosed HIV disease from the year 2016 to 2020. Black/African American MSM accounted for 46.2% (1,197/2,593) of the total number of people diagnosed with HIV compared to 18.2% (473/2,593) for Hispanic/Latino MSM or 30.6% (794/2,593) for white MSM.

Individuals aged 25 to 34 years accounted for 36.3% (283/779) of all newly diagnosed HIV disease in the year 2020, and in the five-year period from 2016 to 2020, individuals who were in this age group at the time of diagnosis accounted for 34.5% (1,724/4,991) of all newly diagnosed HIV disease. This age group accounted for the highest proportion of all newly diagnosed HIV disease in all transmission categories. The group also accounted for 39% of the newly diagnosed HIV disease among MSM. Among heterosexual contact, the group accounted for 26.8%, and among MSM & injection drug users (IDU), 49.3%.

By geographic location, in the five-year period from 2016 to 2020, a total of 2,189 (43.9%) newly diagnosed individuals were residents in Philadelphia County at the time of diagnosis. Allegheny County had 447 (9%) residents during this same period. Important epicenters are in and around urban areas throughout the state where 58.8% (2,933) of individuals newly diagnosed with HIV disease were residents in Philadelphia and the surrounding counties of Bucks, Chester, Delaware, and Montgomery.

At the county level, 46% (18,328/39,909) of PLWH at year-end 2020 resided in Philadelphia County with a diagnosed prevalence rate of 1,157 per 100,000 county population compared to 312 per 100,000 population in the entire commonwealth. Some counties had prevalence rates that were higher than the overall PA rate. These counties were: Dauphin, Delaware, Lehigh, Philadelphia, and Union. Information on the PLWH/diagnosed prevalence rate of HIV disease at the county level will assist in making informed decisions regarding HIV prevention and care resource allocation.

Among the 63,204 persons ever diagnosed with HIV disease while residing in PA, the number of cumulative deaths by year-end 2020 was 27,401 (43.4%). These deaths may or may not have occurred in PA. The overall crude mortality rate in 2020 among persons diagnosed with HIV disease was 4.4 per 100,000 population. This rate was higher among males at 6.4 per 100,000 male population than females at 2.4 per 100,000 female population. By race, Blacks/African Americans had a higher death rate of 20.7 per 100,000 population compared to 1.8 per 100,000 for whites and 7 per 100,000 population for Hispanics. Overall, the death rate among Blacks/African Americans diagnosed with HIV disease was approximately 12 times the death rate for whites. By race and sex, Black/African American males diagnosed with HIV disease had the highest death rate of 29 per 100,000 male population compared to 3 per 100,000 for white males and 9.6 per 100,000 for Hispanic males. Also, Black/African American females had the highest death rate of 12.9 per 100,000 female population compared to 0.6 per 100,000 for white females and 4.3 per 100,000 for Hispanic females.

Included in this report is a section on the HIV care continuum and comorbidities using data reported through year-end 2019. For the HIV care continuum, we provided information on linkage to care, receipt of care, retained in care, and viral suppression. A total of 989 individuals were newly diagnosed with HIV disease in 2019, and 83.5% (826/989) were linked to care within one month after diagnosis. In the HIV care continuum, an estimated 39,706 people were diagnosed up to 2018 and were alive at year-end 2019 in PA. Out of these, an estimated 57.6% were in receipt of care, 38.9% were retained in care, and 48.2% were virally suppressed. Prior to October 31, 2020, the PA HIV reporting regulations required reporting only of detectable viral load (VL) tests and CD4 results that are below 200 cells/µl or 14 percent. The regulations made it less likely to receive CD4 and VL test results outside these limits. The excluded test results are necessary for assessing HIV care continuum. Therefore, the data provided for the HIV care continuum demonstrates a minimum estimate of the HIV care continuum for PLWH in PA during the analysis period. On October 31, 2020, PA's disease reporting regulations were changed to mandate the reporting of all CD4 and HIV viral load laboratory results. Therefore, with this regulation change, PADOH will have the data that will inform future HIV care continuum analysis.

Hepatitis C Virus (HCV) and HIV share similar modes of transmission. In 2019, 3.8% (38/989) of newly diagnosed individuals with HIV were coinfected with HCV. Approximately one-quarter of the HIV/HCV coinfected individuals were among people who inject drugs. At year-end 2019, an estimated 0.7% (292/39,921) of PLWH were coinfected with HCV.

Disparities exist in who is impacted the most by the disease despite the rapidly evolving changes in the epidemic since it was first reported in the 1980s. The predominant transmission mode remains MSM with the disproportionate impact seen in individuals aged 25 to 34 years, and the minority population, which is made up of primarily Blacks/African Americans and Hispanics. While these health disparities have been noted, greater attention needs to be placed on addressing these disparities and social determinants of health that might influence these disparities with subsequent implementation of practical interventions and prevention strategies. Therefore, concerted joint efforts by all stakeholders are necessary to end the epidemic in PA.

This assessment of the epidemiology of HIV disease in PA, as outlined in this profile, is an integral part of HIV prevention and care programs in the commonwealth as it provides

information to guide prevention and care activities effectively. We hope that it will assist numerous organizations in planning HIV-related programs, resource allocation for prevention and care activities, and education for PLWH, their caregivers, lawmakers, and the public.

Introduction

Epidemiologic overview

This epidemiologic overview is based on the [Integrated Guidance for Developing Epidemiologic Profiles (cdc.gov)](#), updated March 2022, issued by the Centers for Disease Control and Prevention (CDC) and Health Resources and Services Administration (HRSA).[3] The first edition of the integrated plan was published in the year 2012/2013. The second edition was published in 2018, and this is the third iteration of the integrated plan.

This profile provides an in-depth description of the HIV burden among the various populations in PA along sociodemographic, geographic, behavioral, and clinical terms. In addition, it describes the status of persons with HIV disease in PA and seeks to anticipate future HIV distribution and identifies characteristics of the general population and of populations who are living with, or at high risk for, HIV and need primary and secondary prevention or care services. It also provides information required to conduct needs assessments and gap analyses.

Data Sources, Strengths, and Limitations

PA HIV surveillance: HIV surveillance is the core data source for this epidemiologic profile. PA HIV surveillance program uses PA National Electronic Disease Surveillance System (PA-NEDSS) and the enhanced HIV/AIDS Reporting System (eHARS) to collect, manage, analyze, and report HIV-related surveillance data to the CDC. These data include all persons with diagnosed HIV disease who resided in the Commonwealth of PA at the time of diagnosis, their accompanying sociodemographic data, transmission category, and vital status (dead/alive).

Strengths: Reporting of all HIV disease is over 99% complete.[4] The data provide information that could be used in conjunction with other data sources to identify PLWH who are linked to care and retained in care. It also helps to identify PLWH who are virally suppressed and have very low levels of HIV in their blood.

Limitations: Prior to October 31, 2020, the PA HIV reporting regulations required reporting only of detectable viral load (VL) tests and CD4 results that are below 200 cells/µl or 14 percent. The regulations made it less likely to receive CD4 and VL test results outside these limits. The excluded test results are necessary for assessing HIV care continuum prior to the year 2020. However, in October 2020, PA's disease reporting regulations were changed to mandate the reporting of all CD4 and HIV viral load laboratory results. Therefore, with this regulation change, PADOH will have the data that will inform future HIV care continuum analysis. In addition, surveillance data may undercount the number of people diagnosed and living with HIV because the surveillance system does not contain information on individuals with HIV who have not received a diagnosis. The system also does not collect information on individuals who tested positive at anonymous test sites and who have not received medical care.

U.S. Bureau of the Census: Data on sociodemographic and economic status are available at the county and state levels.

Strengths: The data are easily accessible and provides reliable and validated data.

Limitation: Tailored data can only be obtained through costly data requests.

Vital statistics data: Data on death, including the cause of death, contributory factors associated with the cause of death, and date of death, are obtained from the Bureau of Health Statistics and Registries, PA Department of Health.

Strengths: The data are relatively up-to-date and complete.

Limitations: HIV disease may be underreported as the cause of death in the death registry. Also, the deaths of PA residents that occurred outside of PA are not reported to the state death registry. Therefore, the death file might be missing some data on HIV-related deaths.

Social Security death master file: This database contains information on all deaths of persons who had a Social Security number and whose death was reported to the Social Security Administration. However, deaths reported to the Social Security Administration by state vital statistics offices are excluded from the file available to CDC, and CDC makes the remaining file available to state HIV surveillance programs annually.

Strengths: The data are updated regularly.

Limitations: No cause of death is indicated, and the file does not contain all deaths that occurred in the United States. In addition, the state where the death occurred is not recorded in the file. Sometimes, albeit rarely, this file misclassifies living persons as dead.

Youth Risk Behavioral Surveillance (YRBS): The YRBS is a national school-based survey conducted by CDC, states, territorial, tribal, and local governments. It obtains data from high school students from the ninth grade to the 12th grade. It monitors six types of health-risk behaviors, including behaviors that contribute to unintentional injuries and violence; sexual behaviors related to unintended pregnancy and sexually transmitted infection, including HIV disease; alcohol and other drug use; tobacco use; unhealthy dietary behaviors; and inadequate physical activity.

Strengths: It collects data in all 50 U.S. states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and Palau. It is an important tool that can be used to implement prevention activities and build health promotion activities.

Limitations: Self-reported data are being collected, and sensitive behavioral information may be over-or under-reported. The survey is administered in school. Therefore, data collected might not represent adolescents who are not enrolled in school or are homeschooled.

Behavioral Risk Factor Surveillance System (BRFSS): The BRFSS is a telephone survey that collects information on U.S. adult residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services.

Strengths: BRFSS collects data in all 50 U.S. states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and Palau. It is an important tool that can be used to implement prevention activities and build health promotion activities both statewide and nationally.

Limitations: Self-reported data are being collected, and sensitive behavioral information may be over- or under-reported. Data at the local county level are also not available for use or analysis.

HIV Testing System: CDC through its cooperative agreement provides funding to support HIV testing and referral services. The National HIV Prevention Program Monitoring and Evaluation (NHM&E) system collects data from funded test sites. Demographic and behavioral risk factor information test type (e.g., anonymous, or confidential), current and prior test results, and receipt of test results and posttest counseling are collected.

Strengths: The data and results on clients tested are standardized.

Limitations: The population of persons being tested at CDC-funded sites is not representative of all persons tested in PA. Also, data are test-level and not client-level. Therefore, test results are not linked to an individual.

Hepatitis C surveillance data: Data on Hepatitis C virus (HCV) infections can be used as proxy markers for injection drug use and sexual behaviors, which can be risk factors for HIV transmission. HIV/HCV coinfection is common among people who inject drugs (PWID). HCV is one of the primary causes of chronic liver disease and among individuals coinfected with HIV and liver injury progresses rapidly in this population. Surveillance for hepatitis C is reported to PA-NEDSS.

Strengths: Surveillance for HCV infection can be used to provide persons who have HCV with information on how to reduce both their risk of transmitting HCV to others and their risk for further liver injury and to provide them with referral for medical evaluation. It also can be used to evaluate prevention efforts by providing estimates of the proportion and characteristics of persons with HCV infection.

Limitations: Hepatitis C surveillance data should be interpreted cautiously because many reporting areas do not have the resources required for case investigations to determine whether a laboratory report represents acute infection, chronic infection, resolved infection, repeated testing of a person previously reported, or a false-positive result.

Ryan White HIV/AIDS Program (RWHAP): RWHAP recipients are required as a condition of the award to report on PLWH that were served including services provided and the cost of providing the service. Fund recipients are required to collect data using the Ryan White HIV/AIDS Program Services Report (RSR) and the AIDS Drug Assistance Program Data

Report (ADR). All RWHAP recipients (Parts A, B, C, and D and their subrecipients) are required to report client-level data annually to the HIV/AIDS Bureau (HAB) through the RSR. The RWHAP Part B recipients are also required to set aside funds for the AIDS Drug Assistance Program (ADAP) known as the Special Pharmaceuticals Benefits Program (SPBP) in PA ADAP provides U.S. Food and Drug Administration (FDA)–approved medications for low-income PLWH.

Strengths: The RSR and ADR data set are well structured and defined. Therefore, there is some form of uniformity in data collection.

Limitations: There could be issues with data completeness and data quality that must be addressed by the recipient prior to submission to HRSA HAB.

Link to previous integrated epidemiology profiles:

https://www.health.pa.gov/topics/programs/HIV/Pages/Integrated-Epidemiologic-Profile.aspx

Methods

Data for this HIV Epidemiology overview updates were obtained from the HIV surveillance data system known as eHARS in conjunction with PA-NEDSS, U.S. Bureau of Census, vital statistics data, and the social security death master file.

This overview covers the geography and sociodemographic characteristics of the general population and the HIV burden in the Commonwealth of PA. The HIV surveillance data analyzed for use in this overview include HIV disease diagnosed through December 31, 2020, and reported by March 31, 2021.

Selection criteria for inclusion in the Epidemiology of HIV in PA section 2, subsections I and II are as follows:

- Confirmed diagnosis of HIV disease during the year 2016 to 2020, with HIV disease including HIV disease without acquired immunodeficiency syndrome (AIDS) and AIDS;
- PA residence at the time of diagnosis;
- Meeting the CDC criteria for reporting (i.e., sex, race, residence, age, and vital status); and
- Sex classified as female or male refers to sex assigned at birth.

Selection criteria for inclusion in the Epidemiology of HIV disease in PA section 2, subsection III (mortality among individuals diagnosed with HIV disease) are as follows:

- Confirmed deaths among PLWH during the year 2016 through year-end 2020;
- Confirmed HIV diagnosis in PA;
- Meeting CDC's criteria for reporting; and
- Sex classified as female or male refers to sex assigned at birth.

Selection criteria for inclusion in the Epidemiology of HIV in PA, section 2, subsection IV (People Living with HIV(PLWH) and HIV Diagnosed Prevalence rate in PA) are as follows:

- Confirmed diagnosis of HIV disease in individuals who were alive at each year-end 2016, 2017 and 2018, 2019 and 2020;
- PA residence at the current address;
- Selection meeting CDC's criteria for reporting; and
- Sex classified as female or male refers to sex assigned at birth.

Data were analyzed and presented using SAS 9.4 and Microsoft Excel 2016. A descriptive epidemiology by year of diagnosis, sex, race/ethnicity, transmission category, age group, and county were assessed and presented in this profile. All reported numbers less than 12, with the corresponding rates, should be interpreted with caution, as these numbers have underlying relative standard errors greater than 30% and are considered unreliable. In the description by race/ethnicity, Hispanic/Latino can be of any race. Also, cell size less than or equal to 5 will be suppressed. Note: Data for the year 2020 should be interpreted with caution due to the impact of the COVID-19 pandemic on access to HIV testing, care-related services, and case surveillance activities in state/local jurisdictions. Therefore, more time and data are needed to accurately assess COVID-19's impact on HIV disease in Pennsylvania (PA).

Findings

Section 1: The Geography, Demographic Characteristics and Social Determinants of Health (SDH) Among the General Population in PA

The geographical description of the Commonwealth of PA

The Commonwealth of PA is in the northeastern part of the United States. It is a large state in terms of land mass. Its land area covers about 44,743 square miles.[5] It is the thirty-third largest state by area, the fifth most populous state, and the sixth-largest state economy in the United States.[6] It is bordered by six states (Ohio, West Virginia, Maryland, Delaware, New Jersey, and New York) and Canada. As of 2019, the total population of PA was 12,801,989.[5] PA has 2,560 municipalities and 67 counties.[5] Nineteen of its 67 counties are designated urban counties, and 48 are designated rural counties, making PA a state with about 26.4% of its population residing in rural counties (Figures 1 and 2).[7]

Figure 1: Estimated Population by County, PA, 2019
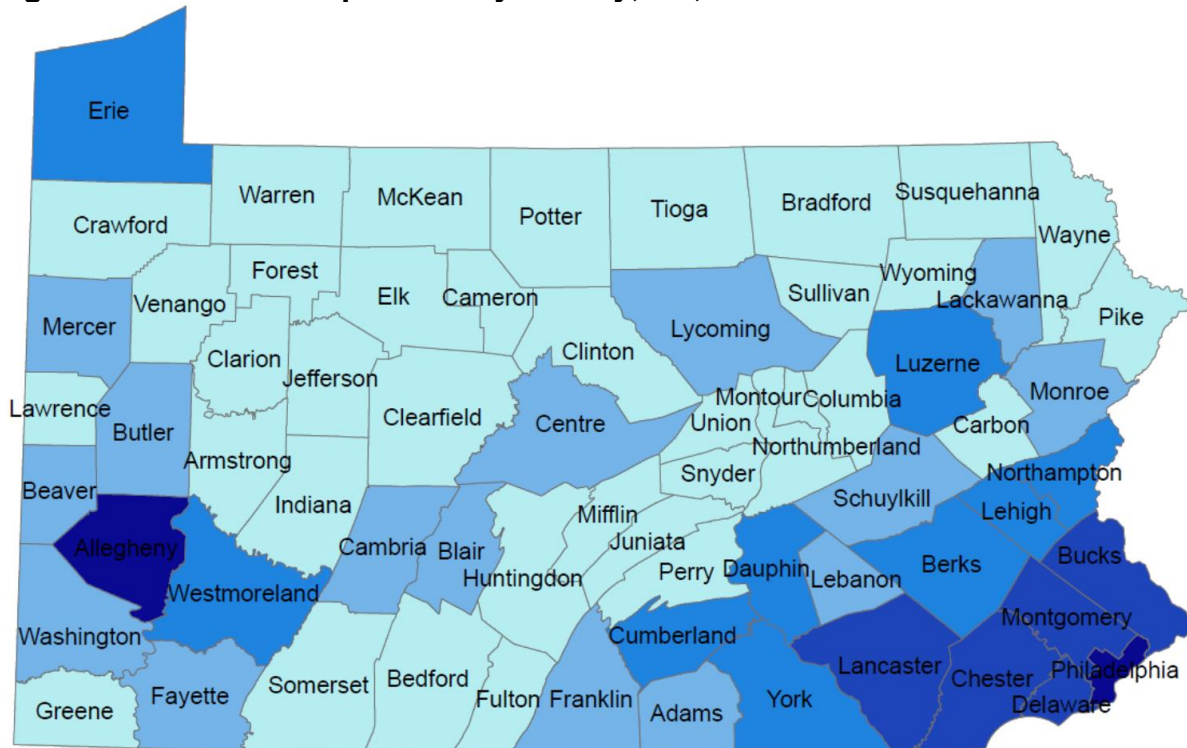
Data source: PA Department of Health Enterprise Data Dissemination Informatics Exchange (EDDIE). Population, county, state. https://www.phaim1.health.PAgov/EDD/WebForms/PopCntySt.aspx. Accessed June 25, 2021

Legend

	4,447 - 90,843
	90,844 - 209,674
	209,675 - 449,058
	449,059 - 830,915
	830,916 - 1,584,064
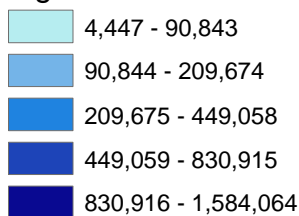
The seven most populous counties are Allegheny, Bucks, Chester, Delaware, Lancaster, Montgomery, and Philadelphia, with more than 500,000 residents each. The combined population of these counties makes up 46.1% (5,896,754 residents) of the total PA population. Approximately one-fifth (21.9% or 2,800,109) of the entire population resides in Allegheny and Philadelphia Counties (Figure 1).

According to the Center for Rural PA, "a county or school district is rural when the number of persons per square mile within the county or school district is less than 284. Counties and school districts with 284 persons or more per square mile are considered urban".[7] The majority of the urban counties are in the southeastern and southcentral regions of the Commonwealth. Figure 2 shows the rural/urban counties in PA.

Figure 2: Rural and Urban Counties in PA
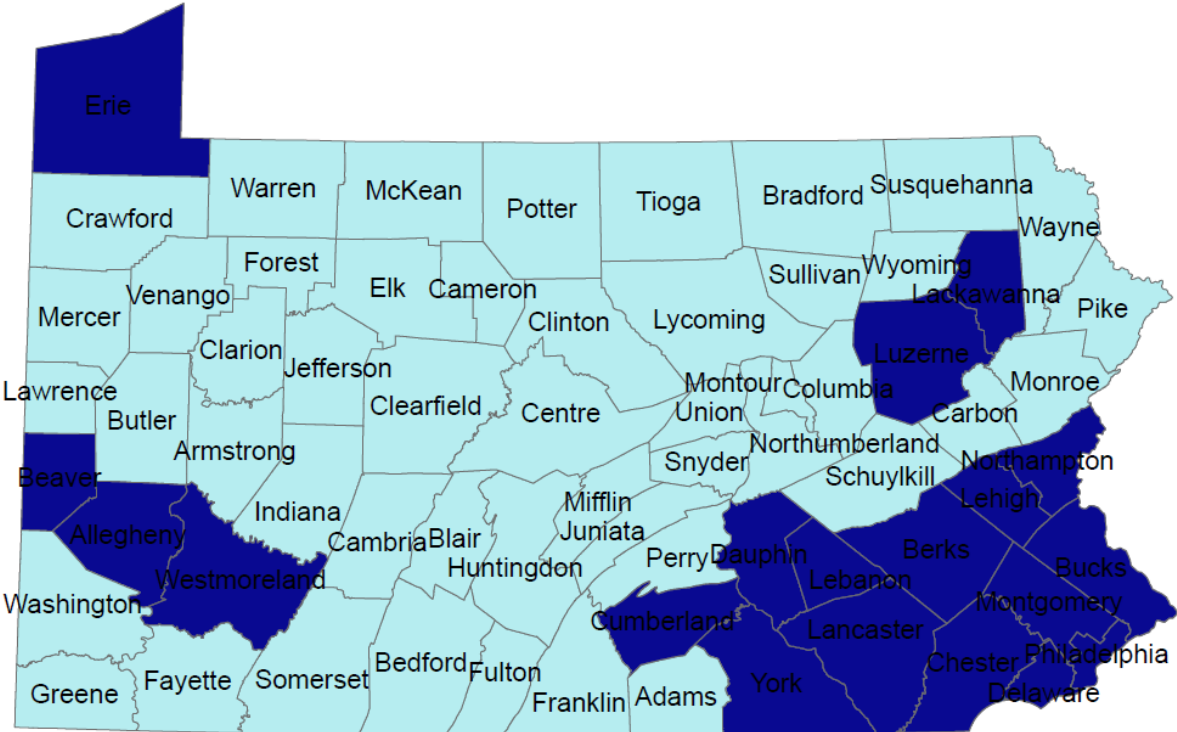
Data source: The Center for Rural PA. https://www.rural.palegislature.us/demographics_rural_urban_counties.html. Accessed June 24, 2019.

Legend

▢	Rural
■	Urban
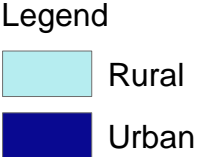
Demographic Characteristics of the Commonwealth of PA

Age: In the 2019 population estimates, persons under five and 18 years represented 5.4% and 20.6% of the population, respectively. The median age in years in the 2019 American Community Survey one-year estimates was 40.8 compared to 40.2 in 2010. The median age for males was 39.2 years and 42.5 years for females. The population in PA is aging, very much like the rest of the U.S. Adults aged 65 years and older made up 18.7% of the population in 2019 compared to 15.5% in 2010 (Table 1).[8,9]

Table 1: Number and Percentage Distribution of the Population by Age group and Sex at Birth in PA, 2019

	PA					
	Total		**Male**		**Female**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Total population	**12,801,989**		**6,272,527**	**49.0**	**6,529,462**	**51.0**
Age group (years)						
<5	695,661	5.4	356,756	51.3	338,905	48.7
5-9	713,446	5.6	359,022	50.3	354,424	49.7
10-14	764,806	6.0	397,027	51.9	367,779	48.1
15-24	1,600,040	12.5	812,829	50.8	787,211	49.2
25-34	1,704,848	13.3	869,539	51.0	835,309	49.0
35-44	1,520,179	11.9	759,312	49.9	760,867	50.1
45-54	1,605,639	12.5	793,205	49.4	812,434	50.6
55-64	1,809,152	14.1	877,385	48.5	931,767	51.5
>=65	2,388,218	18.7	1,047,452	43.9	1,340,766	56.1
Selected age categories						
5 to 14 years	1,478,252	11.5	756,049	51.1	722,203	48.9
15 to 17 years	458,412	3.6	234,239	51.1	224,173	48.9
Under 18 years	2,632,325	20.6	1,347,044	51.2	1,285,282	48.8
Under 19 years	2,977,399	23	1,519,097	51	1,458,302	49
18 to 24 years	1,141,628	8.9	578,590	50.7	563,038	49.3
15 to 44 years	4,825,067	37.7	2,441,680	50.6	2,383,387	49.4
16 years and over	10,474,419	81.8	5,078,946	48.5	5,395,473	51.5
18 years and over	10,169,664	79.4	4,925,483	48.4	5,244,181	51.6
21 years and over	9,660,388	75.5	4,668,223	48.3	4,992,165	51.7
60 years and over	3,301,963	25.8	1,485,614	45.0	1,816,349	55.0
62 years and over	2,929,770	22.9	1,309,877	44.7	1,619,893	55.3
65 years and over	2,388,218	18.7	1,047,452	43.9	1,340,766	56.1
75 years and over	1,035,023	8.1	412,577	39.9	622,446	60.1
Summary indicators						
Median age (years)	40.8		39.2		42.5	
Sex ratio (males per 100 females)	96.1		(X)		(X)	
Age dependency ratio	64.5		(X)		(X)	
Old-age dependency ratio	30.7		(X)		(X)	
Child dependency ratio	33.8		(X)		(X)	

Data source: American Community Survey. S0101 Age and sex, 2019: ACS 1-Year Estimates

Individuals in the age group 25 to 34 years old are disproportionately impacted by the HIV epidemic. In 2020, this age group accounted for 36.3% of all newly diagnosed HIV disease in PA but 13.3% of the population (Tables 1 and 3). In the year 2020, PA ranked ninth in the nation in the percentage of its population of residents aged 65 years and older.[10]

Sex at birth: With an estimated PA population of 12,801,989 in 2019, females were 6,529,462 (51%) of the population, while males were 6,272,527 (49%). Differences, however, exist within each sex by age group. Males aged 0 to 19 years were one-quarter (24.2%) of the male population, and those 65 years and above represented 16.7% of the male population. Females aged 0 to 19 years were 22.3% of the female population, while those aged 65 years and above represented 20.5%. As a percentage of the total population, females aged 65 years and older were 10.5%, and males aged 65 years and older were 8.2%.[9]

Race/ethnicity and Nativity: The Office of Management and Budget (OMB) classifies race into five minimum categories. There are two classifications for ethnicity (Hispanic/Latino and Not Hispanic/ Latino) which are often shown in tables with these minimum five categories of race: American Indian/Alaska Native, Asian, Black/African American, Native Hawaiian/Other Pacific Islander, and white.[11] Using the 2019 PA data estimates, white people alone made up 81.6%; Blacks/African Americans alone, 12%; American Indian/Alaska Native, 0.4%; Asian alone, 3.8%; Native Hawaiian and Other Pacific Islander alone, 0.1%; and two or more races, 2.1% and Hispanic/Latino, 7.8% of the population.[12] In PA, Foreign-born persons made up 6.9% of the population in 2019.[13]

Social Determinants of Health (SDH) of the Commonwealth of PA

Poverty and income: According to the 2019 American Community Survey (ACS) 1-Year Estimates, the population of Pennsylvanians determined to be living below the poverty level in the past 12 months was 12% (±0.3%), which is comparable to the level in the entire United States of 12.3% (±0.1%). However, disparities existed by sex and race/ethnicity. More females were in poverty than males (13% versus 10.9%). White people also had the lowest poverty level at 9.3% compared to Blacks/African Americans at 24.9%, Hispanic/Latino at 26.2%, or American Indian/Alaska Native at 20.4%. The poverty level among Asians was 12.7%, while those identified as having two or more races was 19.3%.[14] Figure 3 shows the percent of people living in poverty geographically at the county level.

The median household income in 2019 was $63,463 in PA, compared to $65,712 in the United States. The mean household income during the same time was $87,789 in PA and $92,324 in the United States. An estimated 6% of households earned less than $10,000 in 2019 in PA. Likewise, 39.8% of households earned $49,999 or less, while 29.5% earned $100,000 or more.[15]

Figure 3: Percent of People Living in Poverty by County, PA, 2019
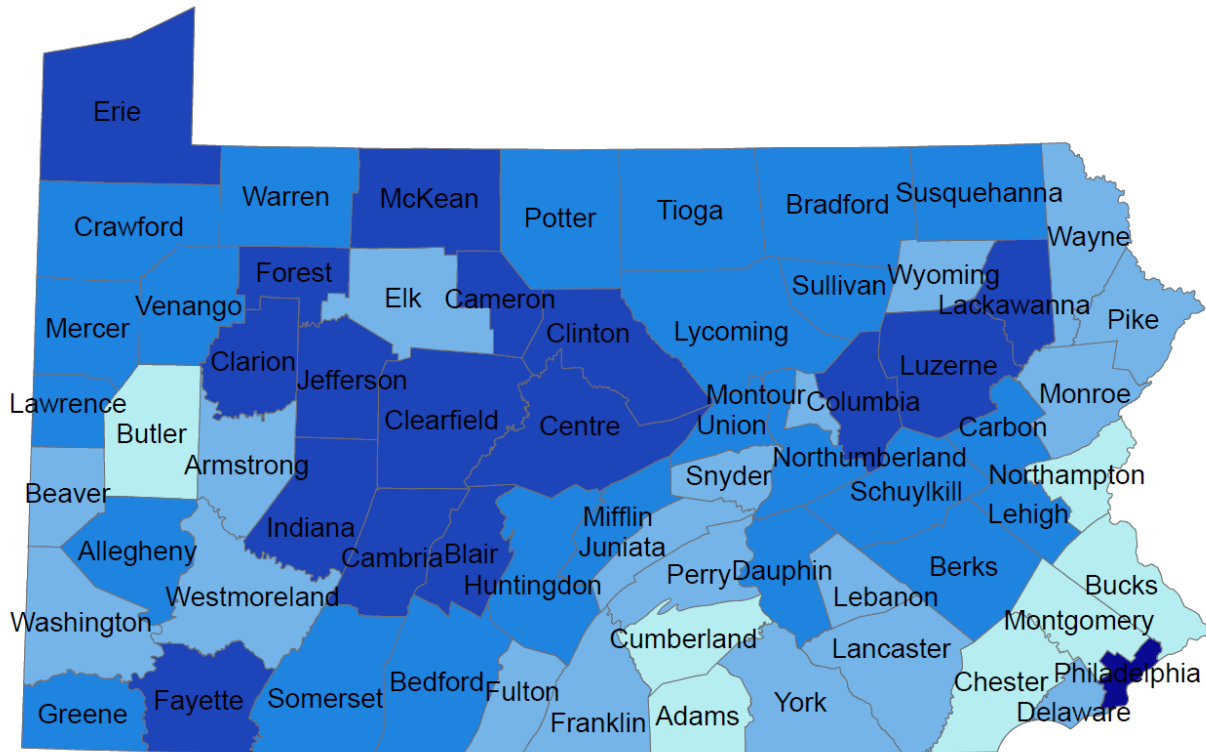
Data source: American Community Survey (ACS). S1701 Poverty status in the past 12 months. 2019 ACS 5-Year Estimates

Legend

	5.9% - 8.6%
	8.7% - 11.4%
	11.5% - 13.9%
	14% - 18.2%
	18.3% - 24.3%
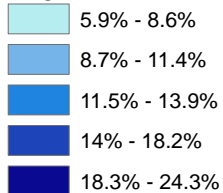
Employment: The United States Department of Labor, Bureau of Labor Statistics, estimates that the unemployment rate in the Commonwealth of PA among those 16 years and older as of December 2019 was 4.5% compared to 3.6% in the United States.[16,17] However, there are disparities in the unemployment rate by sex, race/ethnicity, and age. In the 2019 ACS 1-year estimates, females aged 20 to 64 years old had an unemployment rate of 4% compared to 4.4% among males aged 20 to 64 years old. By race/ethnicity, white people had an unemployment rate of 3.7%. American Indians and Alaska Natives (AI/AN) also had an unemployment rate of 3.7% compared to Asians (3.5%), Blacks/African Americans (9.8%), or individuals with two or more races (8.2%). Hispanic or Latino (of any race) had an unemployment rate of 6.5%. By age group, residents aged 16 to 19 years had the highest unemployment rate of 12.3% compared to residents aged 20 to 24 years (8.7%) or 25 to 29 years (5%), 30 to 34 years (4.5%), or 35 to 44 years (3.4%). Residents aged 45 to 54 years had an unemployment rate of 3.6% compared to 3.3% among those aged 55 to 59 years or 2.8% among 60 to 64 years. Residents aged 65 to 74 years had an unemployment rate of 3%

and those 75 years and older had a rate of 2.9%. The unemployment rate among residents with any form of disability was 11.4%. Educational attainment among the population of 25 to 64 years also impacts the unemployment rate. Residents in this age group that had less than a high school diploma had an unemployment rate of 7.8% compared to those with a high school diploma or equivalent (4.9%) or those with some college or associate degree (4.1%) or bachelor's degree (2%).[18]

Education: The 2019 ACS 1-year estimates that about 91% of PA residents aged 25 years and older had a high school diploma or higher educational attainment, and 32.3% had a bachelor's degree or higher. In addition, 9% of persons aged 25 years and older have less than a high school diploma, 34.4% were high school graduates, and 19.5% had a bachelor's degree.[18] Looking at residents with a bachelor's degree or higher by race, 33.4% of white people had a bachelor's degree or higher compared to 20.2% Blacks/African American or 20.5% American Indians or Alaska Natives or 57% Asians or 33% Native Hawaiian or Other Pacific Islander (NHPI), or 30.4% among residents who identify as having two or more races or 16.5% Hispanic or Latino. There is an association between poverty and educational attainment. The poverty level among residents 25 years and older with less than a high school diploma was 25.1% compared to those with a high school graduate (11.9%) or residents with some college or associate degree (9.1%) or bachelor's degree or higher at 3.9%.[19]

Disability: According to the Americans with Disabilities Act (ADA), an individual with a disability is defined "*as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment*".[20] In PA,14% of the civilian non-institutionalized population had a disability compared to 12.7% in the United States.[21] Disability increases with age, as expected, with 0.5% of the population under five years of age having some form of disability compared to 7.4% of the population aged 5 to 17, 7.9% of the population aged 18 to 34, 13.6% in the age group 35 to 64 years, 22.6% among aged 65 to 74 and 45.3% in the population aged 75 and over. An estimated 13.7% of males and 14.3% of females had a disability in 2019. Among races, American Indians and Alaska Natives had the highest percentage of people living with a disability at 20.6%. An estimated 17% of Blacks/African Americans had some form of disability compared to 13.8% of white individuals, or 6.9% of Asians, or 16.1% of Native Hawaiian and Other Pacific Islander or 13.2% among residents who have two or more races. Also, 14.3% of Hispanic or Latino had some form of disability. By disability type, an estimated 3.8% of Pennsylvanians had hearing difficulty compared to 2.3% with vision difficulty or 6.1% with cognitive difficulty.[21] These groups present unique challenges as different organizations working on HIV need to target prevention messages to meet the unique needs of these populations.

Health insurance status: Overall, 5.8% of Pennsylvanian's (non-institutionalized civilians) were without health insurance in 2019 compared to 9.2% in the United States.[22] With the expansion of Medicaid through the Affordable Care Act, the number of civilian non-institutionalized Pennsylvanians with some form of health insurance coverage was 94.2% in

2019 compared to 90.8% in the United States. An estimated 95% of female residents were insured compared to 93.5% of male residents. By race/ethnicity, 94.8% of white residents were insured compared to 93.1% Black/African American residents or 90.9% American Indian and Alaska native residents. An estimated 93.6% of Asian Residents were insured compared to 88.8% of Native Hawaiian and Other Pacific Islanders or 94.9% of residents who identified as having two or more races. Also, an estimated 87.5% of residents who identified as Hispanic/Latino (of any race) were insured.[22] Figure 4 shows the percent of people uninsured in all 67 counties in PA. Lancaster, Juniata, Mifflin, Snyder, and Union counties had greater than 9.2% of the population without health insurance in 2019.

Figure 4: Percent of People Uninsured by County, PA, 2019
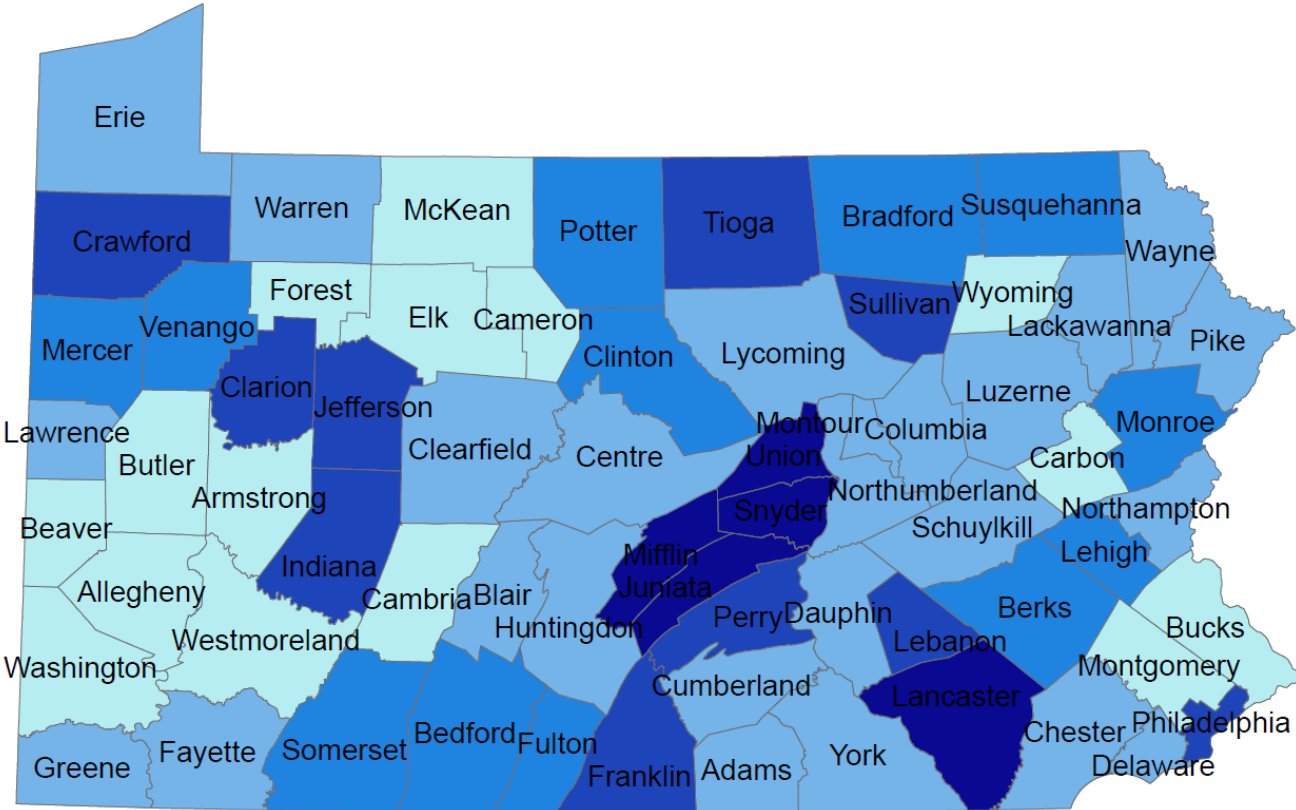
Data source: American Community Survey (ACS). S2702 Selected characteristics of the uninsured in the United States. 2019 ACS 5-Year Estimates

Legend

- 2.9% - 4.2%
- 4.3% - 5.6%
- 5.7% - 7.1%
- 7.2% - 9.1%
- 9.2% - 12.3%
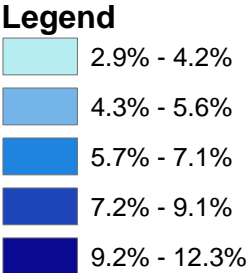
Homelessness: In PA, an estimated 13,375 individuals experienced homelessness, and 8,585 individuals were homeless in 2020.[23] According to The U.S. Department of Housing and Urban Development Annual Homeless Assessment Report (AHAR), "Homeless describes a person who lacks a fixed, regular, and adequate nighttime residence" and "Individual refers to a person who is not part of a family with children during an episode of homelessness. Individuals may be homeless as single adults, unaccompanied youth, or in multiple-adult or multiple-child households".[23]

A total of 1,689 were chronically homeless individuals, 977 were veterans and, 716 were homeless unaccompanied youths aged 25 years and younger. A decreasing trend in the number of people experiencing homeless has been observed since 2010, when there were 14,516 homeless individuals. This represents a 7.9% decrease in the number of individuals experiencing homelessness from 2010 to 2020.[23] The issue of homelessness is particularly challenging for individuals living with chronic conditions, such as HIV, and their caregivers because homelessness has been associated with reduced access to care, engagement in harmful behaviors, lower survival rate, and poor adherence to treatment. In 2019, 25,558 clients were served by the Ryan White HIV/AIDS program. This represents 64% (25,558/39,921) of PLWH at year-end 2019. An estimated 6.2% of these Ryan White clients had unstable housing while 6.7% had temporary housing.[24]

Section 2: Epidemiology of HIV Disease in PA

Subsection I. Newly Diagnosed HIV disease in PA, 2020

The numbers reported in this subsection reflect only those diagnosed during the time period year 2020. This data may not be representative of all persons with HIV because not all persons with HIV have been tested or tested at a time when the disease could be detected and diagnosed. Also, reports of confidential test results may not represent all persons who tested positive for HIV in PA.

In 2020, the total number of individuals newly diagnosed with HIV was 779. Of this total, 161 (20.7%) were females, and 618 (79.3%) were males. By race/ethnicity, 378 (48.5%) were Blacks/African Americans, 243 (31.2%) were white people, 129 (16.6%) were Hispanics/Latinos, seven (0.9%) were Asians, four (0.5%) were American Indian/Alaska Natives (AI/AN) and 17 (2.2%) were of multiple races. The rate of newly diagnosed HIV disease in 2020 in PA was 6.1 per 100,000 population. The rates of newly diagnosed HIV disease differ by sex and race. The newly diagnosed HIV disease rate for males was approximately four times the rate for females (9.8 per 100,000 compared to 2.5 per 100,000). Black/African American males and females had the highest rates of newly diagnosed HIV disease at 42.7 per 100,000 Black/African American male population and 12.6 per 100,000 Black/African American female population compared to other races and ethnicities. Overall, the rate of newly diagnosed HIV disease in Blacks/African Americans was 27 per 100,000 population compared to 12.9 per 100,000 population for Hispanics/Latinos and 2.5 per 100,000 population for whites (Table 2).

Table 2: The Number and Rate of Newly Diagnosed HIV Disease by Sex and Race/Ethnicity in PA, 2020*

	Sex at birth								
	Female			Male			Total*		
Race/Ethnicity	No.	%	Rate	No.	%	Rate	No.	%	Rate
AI/AN[+]	0	0	0	4	0.6	42.8	4	0.5	21.2
Asian	0	0	0	7	1.1	3.1	7	0.9	1.5
Black or African American	91	56.5	12.6	287	46.4	42.7	378	48.5	27.1
Hispanic/Latino	26	16.1	5.3	103	16.7	20.3	129	16.6	12.9
Multiple races	3	1.9	2.7	14	2.3	13	17	2.2	7.8
NHPI[++]	0	0	0	1	0.2	53.1	1	0.1	25.4
White	41	25.5	0.8	202	32.7	4.3	243	31.2	2.5
Total	161	100	2.5	618	100	9.8	779	100	6.1

Data source: PA HIV surveillance
Population by sex and race retrieved from United States Census Bureaus (2021). State Population by Characteristics: 2010-2019. https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html. Accessed July 20, 2021
[+]AI/AN=American Indian/Alaska Native.
[++]NHPI=Native Hawaiian and Other Pacific Islander.
Rates are per 100,000 population.
Reported numbers less than 12, as well as estimated numbers (and accompanying rates and trends) based on these numbers, should be interpreted with caution because the numbers have underlying relative standard errors greater than 30% and are considered unreliable.
* Count may be incomplete due to lag in reporting.

Newly Diagnosed HIV disease by County of Residence in PA

Figures 5 depicts the number of newly diagnosed HIV disease in each of the 67 counties in PA. The highest number of new diagnoses are in the counties in the southeastern region of the state and Allegheny County in the southwestern part of the state. A total of 337 (43.3%) people with HIV were residents in Philadelphia County at the time of diagnosis. Allegheny County had 79 (10.1%) individuals with newly diagnosed HIV disease in 2020. Important epicenters were in and around urban areas with 58.4% (455/779) of people newly diagnosed with HIV were residents in Philadelphia and the surrounding counties of Bucks, Chester, Delaware, and Montgomery. Figure 6 below depicts the rate of new diagnoses of HIV disease in 2020 by county of residence at diagnosis. The overall HIV rate in Pennsylvania in 2020 was 6.1 per 100,000 population. Philadelphia, Dauphin, Delaware, Wyoming, Fulton, Beaver, Luzerne, Lehigh, Allegheny, and Carbon counties had rates higher than 6.1 per 100,000 population. The highest rate was observed in Philadelphia County at 21.3 per 100,000 population.

Figure 5: The Number of Newly Diagnosed HIV Disease by County in PA, 2020*
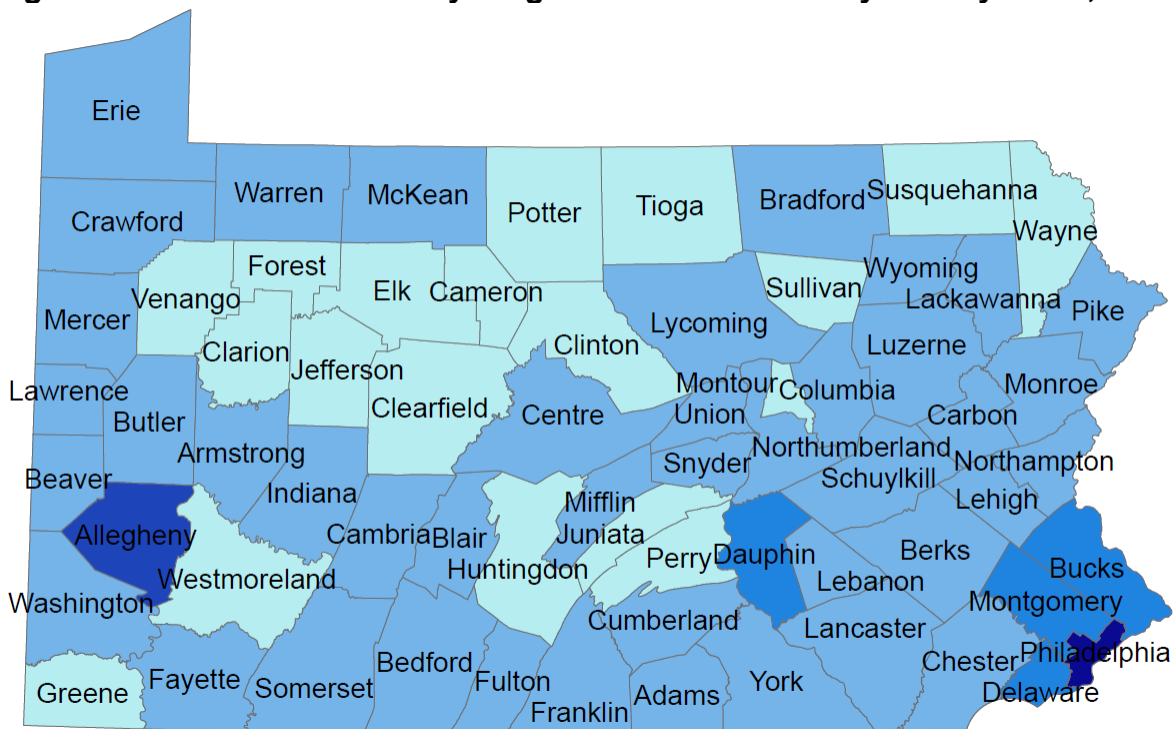
Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Legend
- 0
- 1 - 24
- 25 - 45
- 46 - 79
- 80 - 337
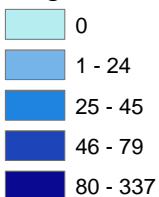
Figure 6: The Rate (per 100,000 population) of Newly Diagnosed HIV Disease by County in PA, 2020*
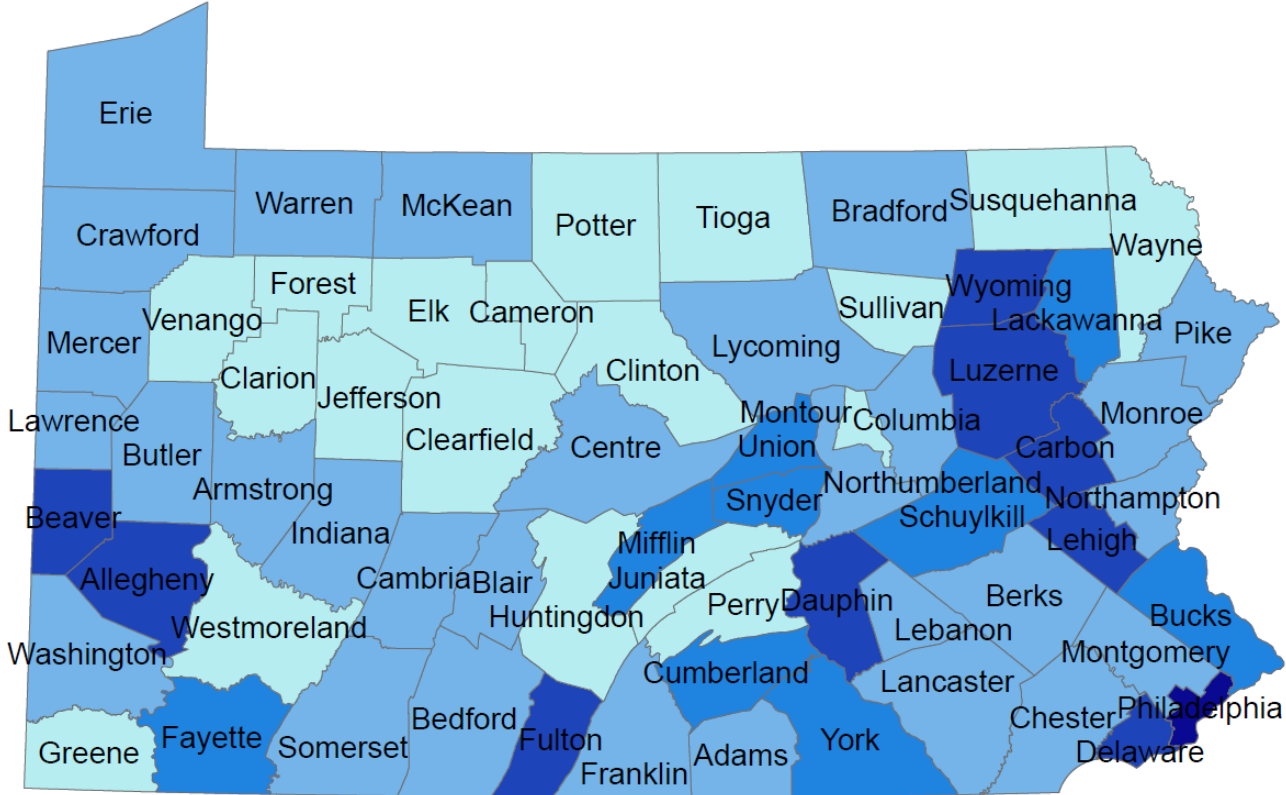
Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Legend

	0
	0.1 - 3.5
	3.6 - 5.5
	5.6 - 10.4
	10.5 - 21.3
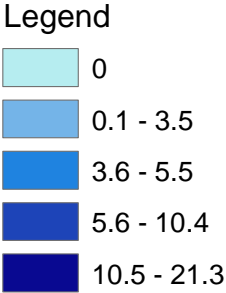
In 2020, the highest number and percentage of newly diagnosed HIV disease were in the 25 to 34-year-old age group. This age group accounted for 283 (36.3%) of all newly diagnosed HIV disease (Table 3) in PA but 13.3% of the population (Table 1). Among males, 38.8% of newly diagnosed HIV disease were among aged 25 to 34 years compared to 26.7% among females. Among those aged 15 to 44 years, a total of 585 newly diagnosed HIV disease were reported accounting for 75.1% of the total. In this age group, males accounted for 482 (82.4%) of all newly diagnosed HIV disease compared to 103 (17.6%) females (Table 3).

Table 3: The Number of Newly Diagnosed HIV Disease by Sex and Age at Diagnosis in PA, 2020*

Age group (years)	Female		Male		Total*	
	No.	%	No.	%	No.	%
≤12	1	0.6	1	0.2	2	0.3
13-14	0	0	0	0	0	0
15-24	25	15.5	137	22.2	162	20.8
25-34	43	26.7	240	38.8	283	36.3
35-44	35	21.7	105	17	140	18
45-54	30	18.6	78	12.6	108	13.9
55-64	27	16.8	41	6.6	68	8.7
≥65	0	0	16	2.6	16	2.1
Total	**161**	**100**	**618**	**100**	**779**	**100**

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

By transmission category and sex at birth, 407 (52.2%) of people newly diagnosed with HIV disease in 2020 were men who have sex with men (MSM). In addition, 131 (16.8%) persons had HIV attributed to heterosexual contact, 50 (6.4%) persons acquired HIV through injection drug use (IDU), and 31 (4%) through MSM and IDU contact. A total of 158 (20.3%) newly diagnosed HIV disease did not have any risk factor reported or was not identified. Among the 618 males with diagnosed HIV disease, the predominant transmission category was MSM contact (65.9%), followed by heterosexual contact (11.3%) and IDU (6.5%). Among the 161 females with diagnosed HIV disease, the primary transmission category was heterosexual contact (37.9%), followed by IDU (6.2%) (Table 4).

Table 4: The Number of Newly Diagnosed HIV Disease by Sex and Transmission Category in PA, 2020*

Transmission category	Female		Male		Total	
	No.	%	No.	%	No.	%
Heterosexual contact	61	37.9	70	11.3	131	16.8
IDU	10	6.2	40	6.5	50	6.4
MSM	0	0	407	65.9	407	52.2
MSM&IDU	0	0	31	5	31	4
All pediatric mode	1	0.6	1	0.2	2	0.3
Unknown**	89	55.3	69	11.2	158	20.3
Total	**161**	**100**	**618**	**100**	**779**	**100**

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.
** Unknown category includes no risk factor reported, or the risk factor was not identified.

By race/ethnicity, Blacks/African Americans accounted for 378 (48.5%) of all newly diagnosed HIV disease in 2020, while white individuals accounted for 243 (31.2%) and Hispanics/Latinos accounted for 129 (16.6%) of the disease. By transmission category, among MSM, Blacks/African Americans had the highest number of diagnosed HIV disease compared to other races/ethnicities. A total of 199 (48.9%) newly diagnosed HIV disease among MSM were Blacks/African Americans compared to 121(29.7%) white individuals or 67 (16.5%) Hispanics/Latinos. Likewise, Blacks/African Americans accounted for 50.4% of diagnosed HIV disease attributable to heterosexual contact compared to white individuals (31.3%) [Table 5 & Figure 7].

Table 5: The Number of Newly Diagnosed HIV Disease by Transmission Category and Race/Ethnicity in PA, 2020*

	Transmission category							
Race/ethnicity	Heterosexual contact	IDU	MSM	MSM& IDU	All pediatric mode	Unknown	Total	
	No.	No.	No.	No.	No.	No.	No.	%
AI/AN+	0	0	4	0	0	0	4	0.5
Asian	1	1	5	0	0	0	7	0.9
Black/African American	66	9	199	7	1	96	378	48.5
Hispanic/Latino++	21	9	67	2	1	29	129	16.6
Multiple races	2	2	10	0	0	3	17	2.2
NHPI+++	0	0	1	0	0	0	1	0.1
White	41	29	121	22	0	30	243	31.2
Total	**131**	**50**	**407**	**31**	**2**	**158**	**779**	**100**

Data source: PA HIV surveillance
+AI/AN=American Indian/Alaska Native.
++ Hispanic/Latino persons can be of any race.
+++NHPI=Native Hawaiian and Other Pacific Islander.
* Count may be incomplete due to lag in reporting.

Figure 7: The Percent of Newly Diagnosed HIV Disease by Transmission Category and Race/Ethnicity in PA, 2020*
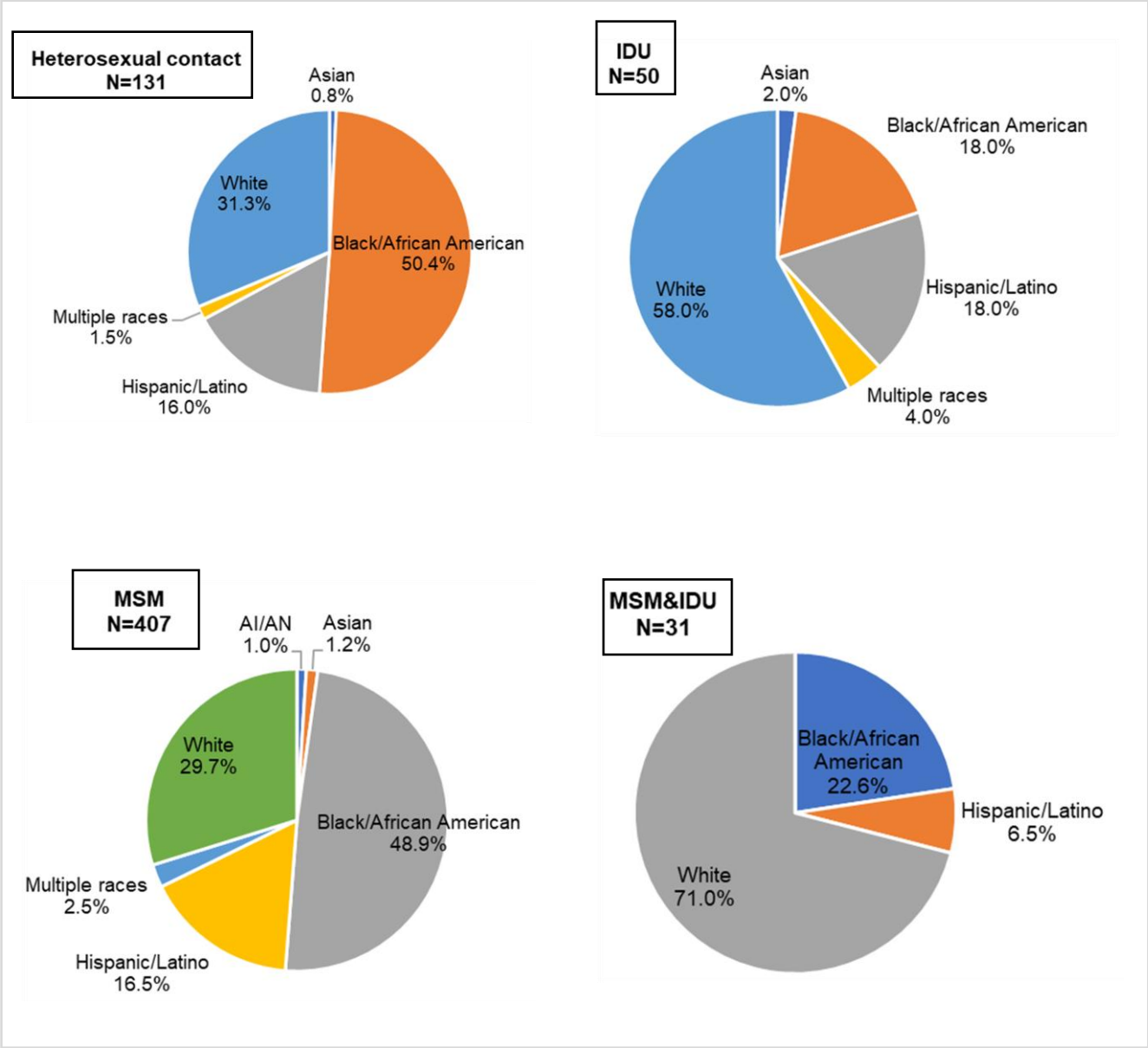
Data source: PA HIV surveillance
AI/AN=American Indian/Alaska Native.
Hispanic/Latino persons can be of any race.
* Count may be incomplete due to lag in reporting.

Subsection II. Five-Year Newly Diagnosed HIV Disease in PA, 2016-2020

Newly Diagnosed HIV Disease in PA, 2016-2020

Prior to 2016, a total of 58,213 individuals were newly diagnosed with HIV disease. A cumulative total of 63,204 individuals have been diagnosed with HIV disease in PA by year-end 2020. From 2016 through 2020, a total of 4,991 people were newly diagnosed. Of the total 4,991 HIV disease reported from 2016 to 2020, 1,101 (22.1%) were females and 3,890 (77.9%) were males (Table 6).

By race/ethnicity, 893 (17.9%) were Hispanics/Latinos, four (0.1%) were Native Hawaiian/ Other Pacific Islander, 13 (0.3%) were American Indian/Alaska Native (AI/AN), 78 (1.6%) were Asians, 2,407 (48.2%) were Blacks/African Americans, 1,479 (29.6%) were white individuals and 117 (2.3%) were of multiple races. From the inception of the HIV epidemic through December 31, 2020, individuals who identified as Blacks/African Americans accounted for 49.1% of all diagnosed HIV disease. Individuals who identified as white accounted for 33.1% while Hispanics/Latinos accounted for 13.9% (Table 7).

By age at diagnosis, individuals aged 12 years and younger accounted for 0.1% (7/4,991) newly diagnosed HIV disease. A total of 1,115 (22.3%) individuals newly diagnosed with HIV disease in these five-year period were aged 15 to 24 years. Also, 901 (18.1%) individuals were aged 35 to 44 years at the time of diagnosis compared to 717 (14.4%) individuals who were aged 45 to 54 years or 411 (8.2%) individuals who were aged 55 to 65 years. 115 (2.3%) individuals were aged 65 years and older at the time of diagnosis. Individuals in the age group 25 to 34 years at the time of diagnosis are disproportionately impacted by the HIV epidemic accounting for about a third (1,724/4,991or 34.5%) of diagnosed HIV disease during this period (Table 8) while making up 13.3% of the general population (Table 1).

By transmission category, 2,593 (52%) HIV disease were acquired through men who have sex with men (MSM), 1,226 (24.6%) were through heterosexual contact, and 399 (8%) were through injection drug use (IDU). MSM&IDU accounted for 144 (2.9%) HIV disease, 11 (0.2%) were of pediatric modes and 618 (12.4%) had unknown risk. Cumulatively, MSM accounted for the highest number of diagnosed HIV disease. In the last five years, the number of diagnosed HIV disease attributable to IDU increased from 60 in 2016 to 106 in 2019 and a decrease to 50 in 2020. This decrease in number might be due to the impact of COVID-19 on HIV surveillance activities. The last known documentation in PA's surveillance system of HIV transmission through blood transfusion was in 2007. Historically, a total of 524 diagnosed HIV disease were acquired through blood transfusion from 1980-2007 (Table 9).

Table 6: The Number of People Diagnosed with HIV Disease by Sex and Year of Diagnosis in PA, 2016-2020

		Year of diagnosis								
	Cumulative HIV disease through 2015	2016	2017	2018	2019	2020*	Five-year total from the year 2016 to the year 2020		Cumulative HIV disease through Dec. 31, 2020	
Sex	No.	No.	No.	No.	No.	No.	No.	Percent	No.	Percent
Female	14,394	256	235	222	227	161	1,101	22.1	15,495	24.5
Male	43,819	878	849	792	753	618	3,890	77.9	47,709	75.5
Total	58,213	1,134	1,084	1,014	980	779	4,991	100	63,204	100

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

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Table 7: The Number of People Diagnosed with HIV Disease by Race/Ethnicity and Year of Diagnosis in PA, 2016-2020

	Cumulative HIV disease through 2015	2016	2017	2018	2019	2020*	Five-year total from the year 2016 to the year 2020		Cumulative HIV disease through Dec. 31, 2020	
Race/ethnicity	No.	No.	No.	No.	No.	No.	No.	%	No.	%
AI/AN[+]	52	5	2	1	1	4	13	0.3	65	0.1
Asian	318	22	13	22	14	7	78	1.6	396	0.6
Black/African American	28,646	544	551	467	467	378	2,407	48.2	31,053	49.1
Hispanic/Latino[++]	7,900	206	182	197	179	129	893	17.9	8,793	13.9
Multiple races	1,851	27	24	24	25	17	117	2.3	1,968	3.1
NHPI[+++]	23	0	1	2	0	1	4	0.1	27	0.0
White	19,423	330	311	301	294	243	1,479	29.6	20,902	33.1
Total	58,213	1,134	1,084	1,014	980	779	4,991	100	63,204	100

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
[+++]NHPI=Native Hawaiian and Other Pacific Islander.
* Count may be incomplete due to lag in reporting.

Table 8: The Number of People Diagnosed with HIV Disease by Year of Diagnosis and Age at Diagnosis in PA, 2016-2020

Age at diagnosis (years)	Cumulative HIV disease through 2013	2016	2017	2018	2019	2020*	Five-year total from the year 2016 to the year 2020		Cumulative HIV disease through Dec. 31, 2020	
	No.	No.	No.	No.	No.	No.	No.	Percent	No.	Percent
≤12	733	3	1	1	0	2	7	0.1	740	1.2
13-14	90	0	0	0	1	0	1	0.0	91	0.1
15-24	7,433	257	253	231	212	162	1,115	22.3	8,548	13.5
25-34	18,671	376	351	352	362	283	1,724	34.5	20,395	32.3
35-44	18,120	204	216	171	170	140	901	18.1	19,021	30.1
45-54	9,341	183	153	145	128	108	717	14.4	10,058	15.9
55-64	3,004	88	77	93	85	68	411	8.2	3,415	5.4
≥65	821	23	33	21	22	16	115	2.3	936	1.5
Total	58,213	1,134	1,084	1,014	980	779	4,991	100	63,204	100

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Table 9: The Number of People Diagnosed with HIV Disease by Transmission Category and Year of Diagnosis in PA, 2016-2020

Transmission category	Cumulative HIV disease through 2015	2016	2017	2018	2019	2020	Five-year total from the year 2016 to the year 2020		Cumulative HIV disease through Dec. 31, 2020	
	No.	No.	No.	No.	No.	No.	No.	Percent	No.	Percent
Heterosexual contact	14,348	395	262	231	207	131	1,226	24.6	15,574	24.6
IDU	15,051	60	79	104	106	50	399	8.0	15,450	24.4
MSM	21,900	623	560	485	518	407	2,593	52.0	24,493	38.8
MSM&IDU	2,931	25	24	33	31	31	144	2.9	3,075	4.9
All pediatric mode	746	4	2	3	0	2	11	0.2	757	1.2
*Other	3,237	27	157	158	118	158	618	12.4	3,855	6.1
Total	58,213	1,134	1,084	1,014	980	779	4,991	100	63,204	100

Data source: PA HIV surveillance
* Other transmission category included unknown risk factor, risk not reported, no risk factor identified, and blood transfusion

By geographic location, a total of 2,189 (43.9%) people with HIV were residents in Philadelphia County at the time of diagnosis. Allegheny County had 447 (9%) individuals with newly diagnosed HIV disease during this period. Important epicenters were in and around urban areas with 58.8% (2,933) of people newly diagnosed with HIV were residents in Philadelphia and the surrounding counties of Bucks, Chester, Delaware, and Montgomery.

Five-Year Newly Diagnosed HIV Disease by Selected Characteristics in PA, 2016-2020

By sex and race/ethnicity, Blacks/African Americans made up 48.2% (2,407/4,991) of the total newly diagnosed HIV disease from the year 2016 to the year-end 2020. Among 1,101 females diagnosed in the five years, 626 (56.9%) were Blacks/African Americans, 242 (22%) were white individuals, 198 (18%) were Hispanics/Latinos, and 35 (3.2%) were Asians, American Indian/Alaska Natives, Native Hawaiian/Other Pacific Islander, and multiple races (Figure 8). Among the 3,890 males newly diagnosed in the five years, 1,781 (45.8%) were Blacks/African Americans, 1,237 (31.8%) were white individuals, 695 (17.9%) were Hispanics/Latinos, and 177 (4.4%) were Asians, American Indian/Alaska Natives, and multiple races (Figure 8).

Figure 8: The Percentage of People Diagnosed with HIV Disease by Sex and Race/Ethnicity in PA, 2016-2020
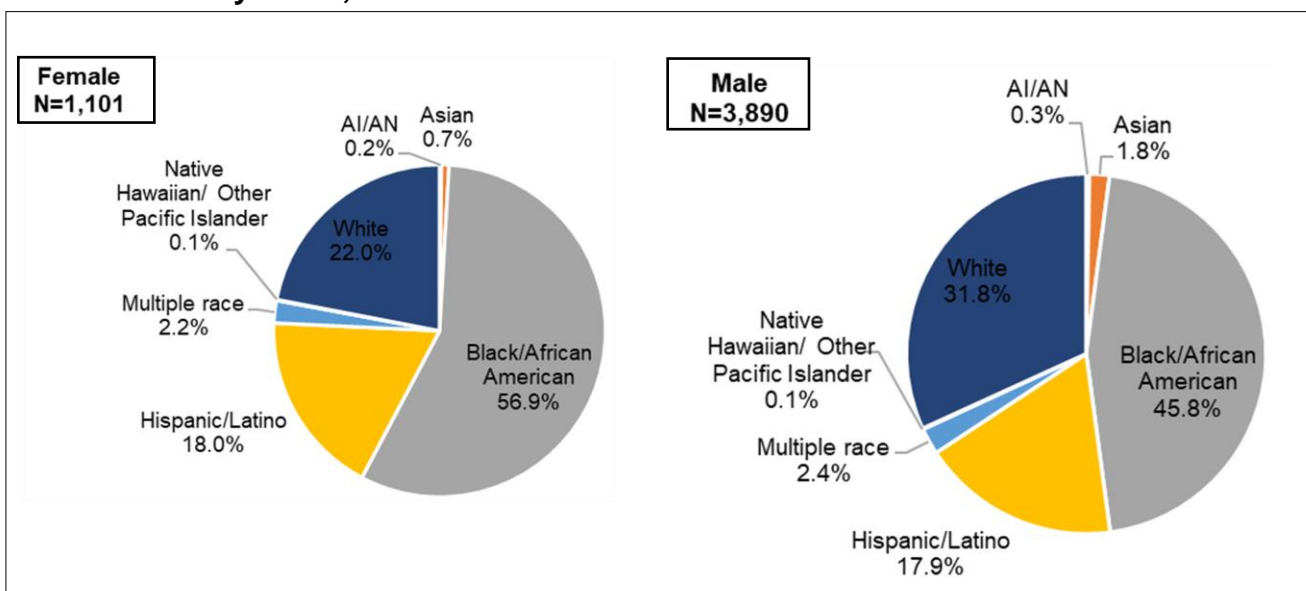
Data source: PA HIV surveillance

By sex and age group at diagnoses, there were 3,889 newly diagnosed HIV disease among males and 1,102 newly diagnosed HIV disease among females of all age groups between 2016 and 2020. Among males, individuals aged 25 to 34 years accounted for the highest number of newly diagnosed HIV disease, with 1,403 (36.1%) disease. The highest number of newly diagnosed HIV disease among females was 321 (29.1%) in the age group 25 to 34 years. A more significant proportion (61%) of males were under aged 35 years, and a greater proportion (56.9%) of females were aged 35 years and older at the time of diagnosis. This data, along with other data presented in this overview, speaks to the importance of having tailored interventions that address the population on different levels based on age, sex, and race/ethnicity (Figure 9).

Figure 9: The Percentage of People Diagnosed with HIV Disease by Sex and Age Group in PA, 2016-2020
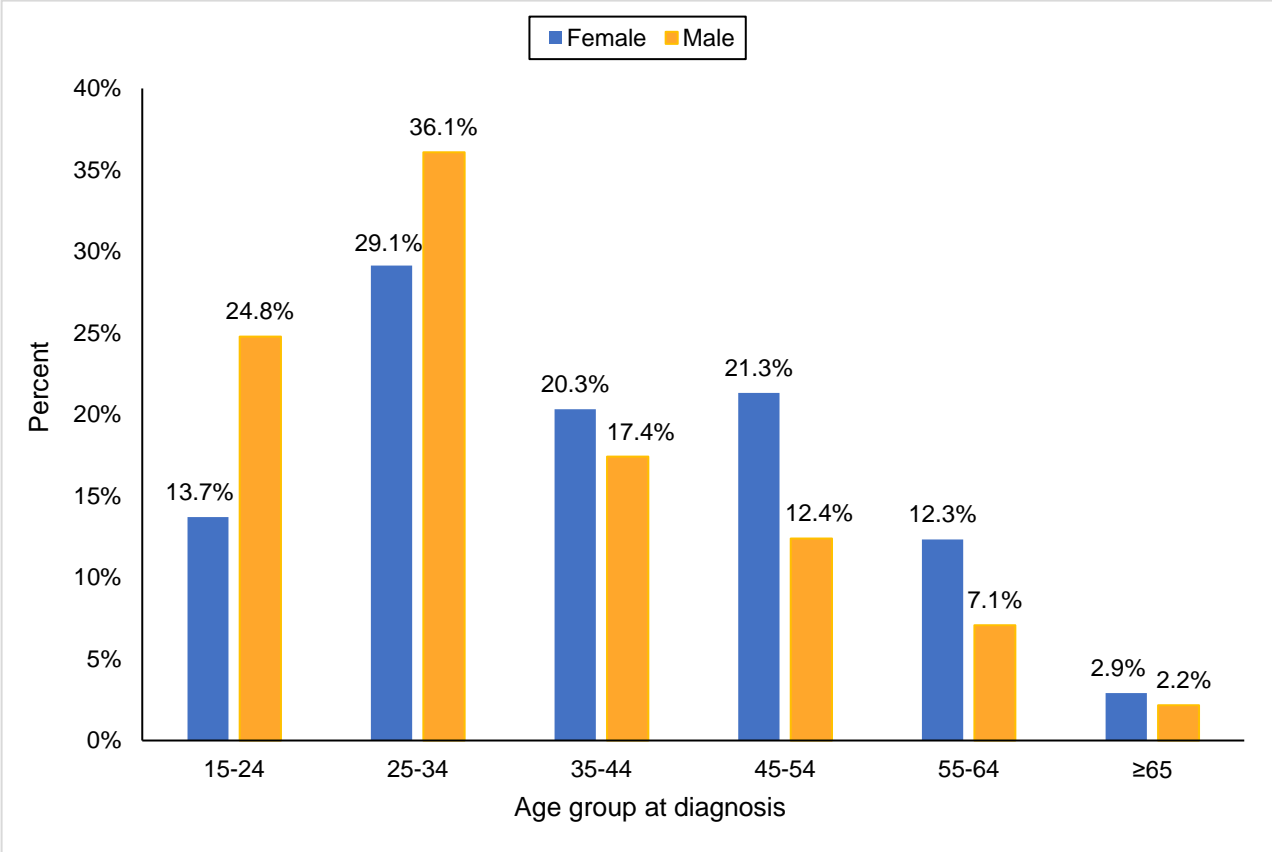
Data source: PA HIV surveillance

By sex and mode of transmission, females with heterosexual contact accounted for 57% of all newly diagnosed HIV disease, and IDU accounted for 13% from the year 2016 to the year 2020. Among males, MSM is the predominant transmission mode accounting for 66.7% of all newly diagnosed HIV disease compared to 15.3% heterosexual contact or 7.7% IDU or 3.7% MSM and IDU from the year 2016 to the year 2020 (Figure 10).

Figure 10: The Percentage of People Diagnosed with HIV Disease by Sex and Transmission Category in PA, 2016-2020
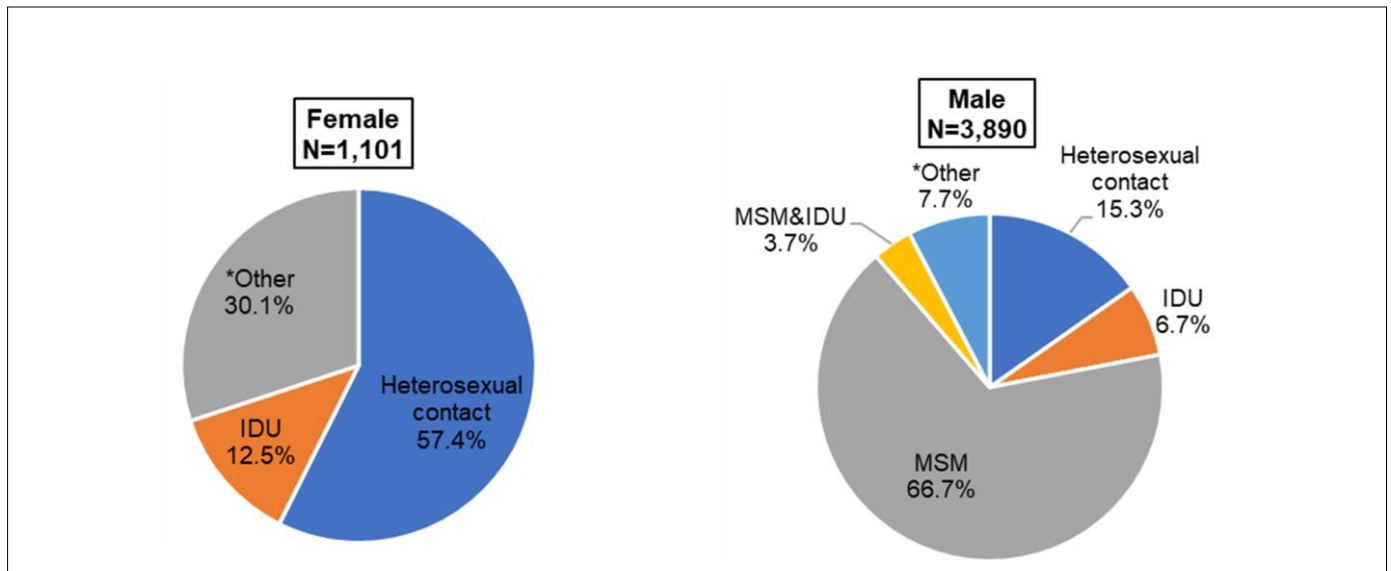
Data source: PA HIV surveillance
*Other includes no identified risk, and no reported risk

Table 10: The Number of Newly Diagnosed HIV Disease by Race/Ethnicity and Age at Diagnosis in PA, 2016-2020

Age group at diagnosis (years)	AI/AN[+]	Asian	Black/African American	Hispanic/ Latino[++]	Multiple races	NHPI[+++]	White	Total	
	No.	No.	No.	No.	No.	No.	No.	No.	%
≤12	0	0	4	1	0	0	2	7	0.1
13-14	0	0	1	0	0	0	0	1	0.0
15-24	1	12	670	197	27	0	208	1,115	22.3
25-34	5	33	810	327	53	2	494	1,724	34.5
35-44	5	17	372	189	22	0	296	901	18.1
45-54	1	11	294	128	4	1	278	717	14.4
55-64	0	4	203	39	11	0	154	411	8.2
≥65	1	1	53	12	0	1	47	115	2.3
Total	13	78	2,407	893	117	4	1,479	4,991	100

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native. [+++]NHPI=Native Hawaiian and Other Pacific Islander
[++] Hispanic/Latino persons can be of any race.

By race/ethnicity and age, out of the 4,991 individuals newly diagnosed with HIV disease from the year 2016 to the year 2020, Blacks/African Americans accounted for 48.2% (2,407/4,991), and individuals in the age group 25 to 34 years accounted for 34.5% (1,724/4,991) newly diagnosed HIV disease during this period. Within each race/ethnicity, the age group that has been disproportionately impacted is the age group 25 to 34 years (Table 10 and Figure 11).

Figure 11: The Percentage of Newly Diagnosed HIV Disease by Race/Ethnicity and Age at Diagnosis in PA, 2016-2020
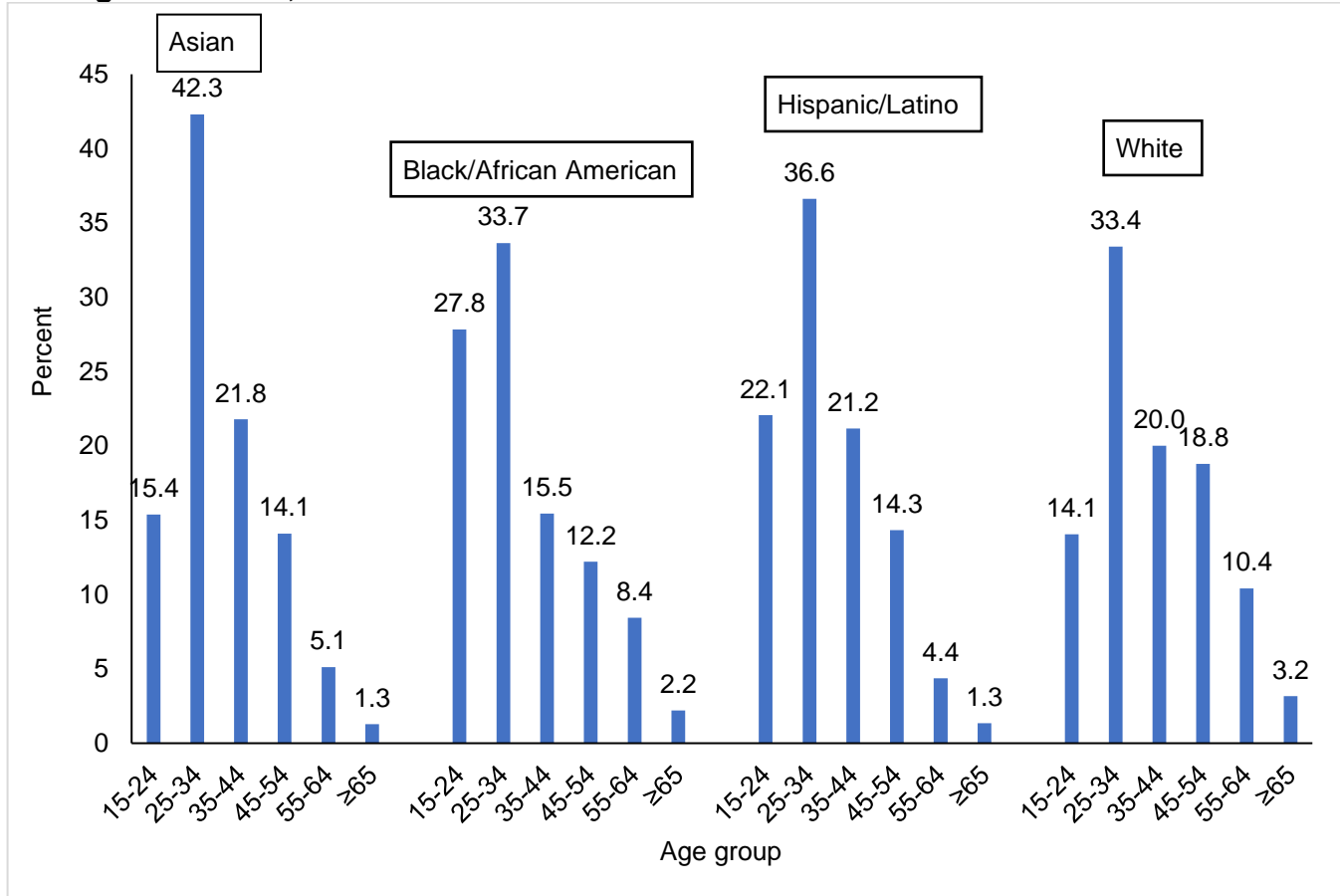
Data source: PA HIV surveillance
Hispanic/Latino persons can be of any race.

By age and mode of transmission, individuals aged 25 to 34 years accounted for the highest proportion of individuals newly diagnosed with HIV disease in all transmission categories. Among MSM, individuals aged 15 to 24 years accounted for 31.7% of newly diagnosed HIV disease compared to 11.7% among heterosexual contact transmission, 6.8% for IDU transmission, and 17.4% for MSM&IDU transmission. Among IDU transmission, individuals aged 25 to 34 years and 35 to 44 years accounted for 35.8% and 29.3% of newly diagnosed HIV disease, respectively. Among heterosexual contact transmission, individuals aged 25 to 34 years and 45 to 54 years had the highest proportion of newly diagnosed HIV disease at 26.8% and 23.6%, respectively (Figure 12).

Figure 12: Newly Diagnosed HIV Disease by Transmission Category and Age at Diagnosis in PA, 2016-2020
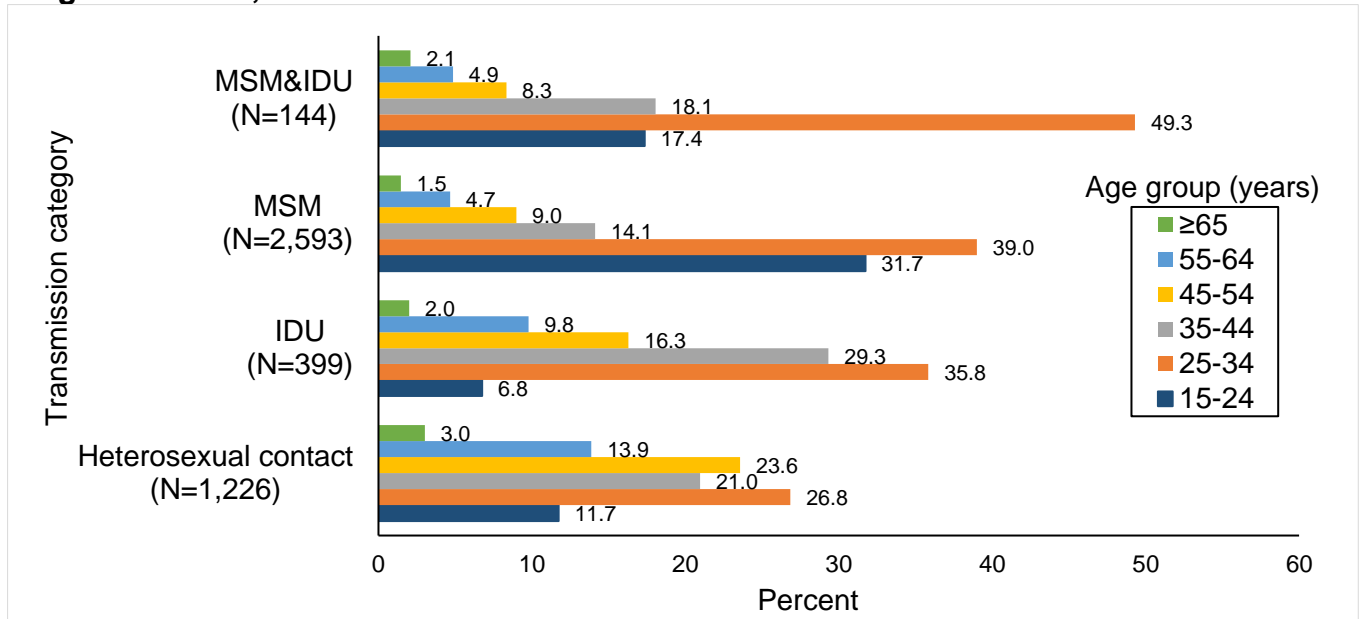
Data source: PA HIV surveillance

Among heterosexual contact and MSM of all newly diagnosed HIV disease, Blacks/African Americans were disproportionately impacted, accounting for 52.3% and 46.2%, respectively. Also, among IDU and MSM&IDU transmission categories, individuals who identified as white were disproportionately impacted, accounting for 53.6% and 67.4%, respectively (Figure 13).

Figure 13: Newly Diagnosed HIV Disease by Transmission Category and Race/Ethnicity at Diagnosis in PA, 2016-2020
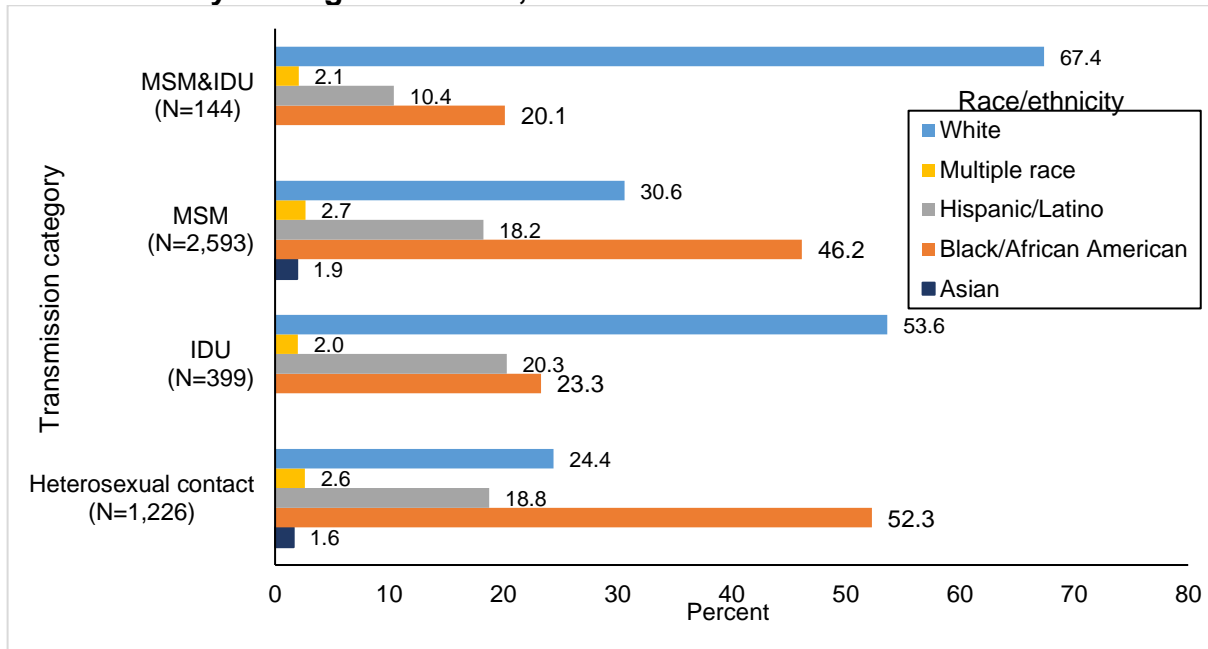
Data source: PA HIV surveillance

By race/ethnicity, within all age groups, Blacks/African Americans were disproportionately impacted during this five-year period (Figure 14).

Figure 14: Newly Diagnosed HIV Disease by Age Group and Race/Ethnicity at Diagnosis in PA, 2016-2020
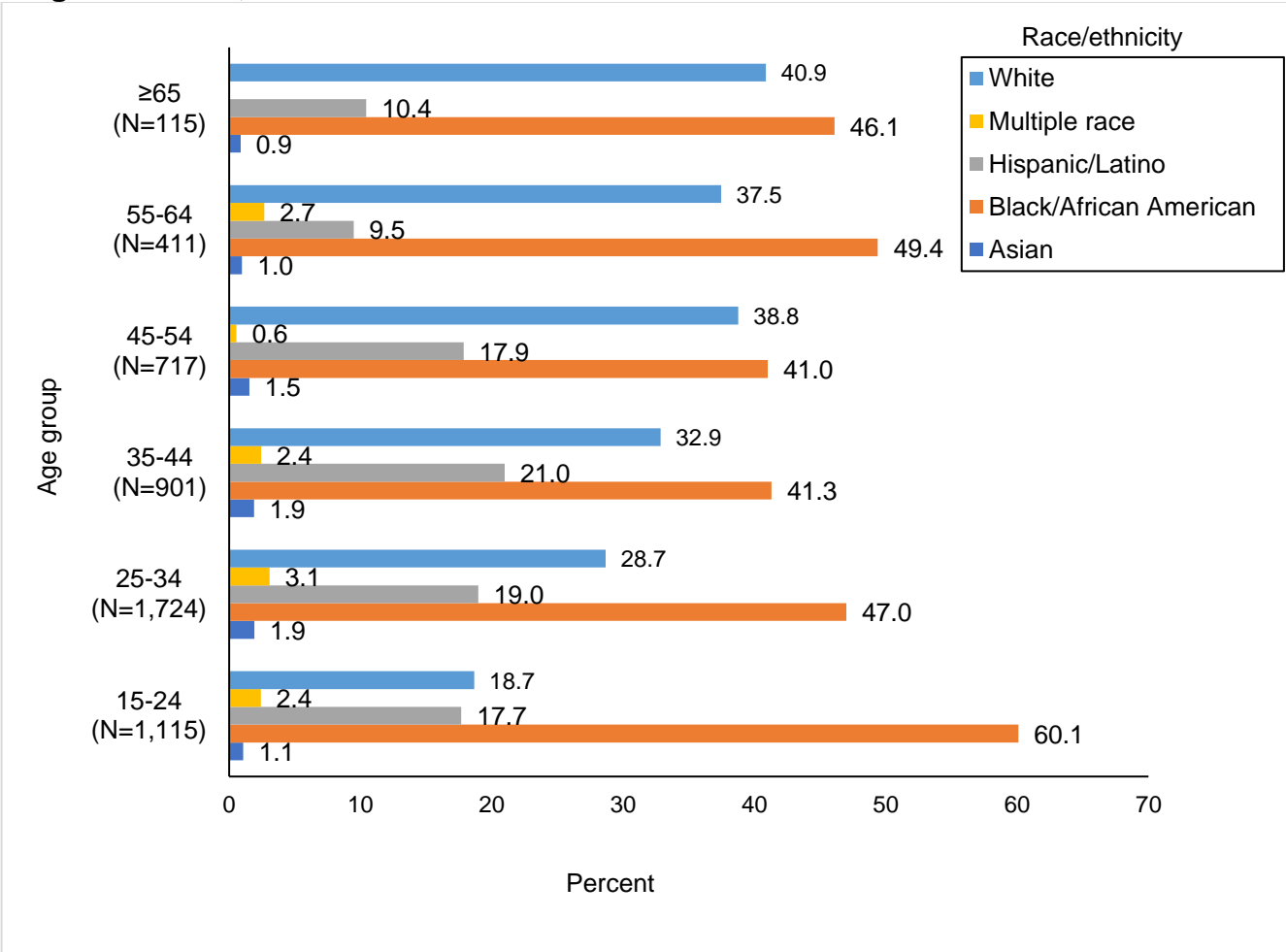
Data source: PA HIV surveillance

Subsection III. Mortality Among Individuals Diagnosed With HIV Disease

Mortality Among People Newly Diagnosed With HIV Disease in PA, 2020
Death data from the Social Security Administration and the PA vital statistics shows that among recorded deaths, 560 people were diagnosed with HIV during their lifetime. However, the cause of death was not specified, which indicates the death may or may not be associated HIV disease. By sex, females accounted for 27.9% (156/560) of the deaths while males accounted for 72.1% (404/560). By race/ethnicity, 51.4% of the deaths were among Blacks/African Americans, 30.7% were white individuals, 12.5% were Hispanics/Latinos, and 5.2% were of multiple races. By mode of transmission of HIV disease, 28.4% of deaths (159/560) were among heterosexual contact, 29.1% (163/560) were IDU, 30% (168/560) were MSM, 6.3% (35/560) were MSM&IDU, and 6.3% (35/560) had other transmission mode. By age at death, 6.3% (35/560) were in the age group 15 to 34. A total of 58 (10.4%) individuals were in the age group 35 to 44 compared to 17.7% (99/560) among 45 to 54. Most deaths occurred among individuals aged 55 years and above, accounting for 65.7% (368/560) of the deaths. Those individuals in age group 55 to 64 years accounted for 37.1% (208/560) of the deaths, and those individuals aged 65 years and above accounted for 28.6% (160/560) of the deaths (Table 11).

Table 11: The Number of Death Among Persons with a Diagnosis of HIV Disease by Selected Characteristics in PA, 2020*

Selected characteristics	Number	Percent
Total	**560**	
Sex at birth		
Female	156	27.9
Male	404	72.1
Race/ethnicity		
Asian	1	0.2
Black/African American	288	51.4
Hispanic/Latino	70	12.5
Multiple races	29	5.2
White	172	30.7
Transmission category		
Heterosexual contact	159	28.4
IDU	163	29.1
MSM	168	30
MSM&IDU	35	6.3
Other**	35	6.3
Age at death		
15-34	30	5.4
35-44	58	10.4
45-54	99	17.7
55-64	208	37.1
≥65	160	28.6

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting
** Other transmission category includes unknown risk, pediatric mode, and coagulation mode

The overall crude mortality rate in 2020 among persons diagnosed with HIV disease was 4.4 per 100,000 population. This rate was higher among males at 6.4 per 100,000 male population compared to females at 2.4 per 100,000 female population. By race, Blacks/African Americans had the highest death rate of 20.7 per 100,000 population compared to 1.8 per 100,000 for white individuals or 7 per 100,000 population for Hispanics/Latinos. Overall, the death rate among Blacks/African Americans diagnosed with HIV disease was 11.5 times that of white people. By race and sex, Black/African American males diagnosed with HIV disease had the highest death rate of 29 per 100,000 male population compared to 3 per 100,000 for white males and 9.6 per 100,000 for Hispanic males. Also, Black/African American females had the highest death rate of 12.9 per 100,000 female population compared to 0.6 per 100,000 white females and 4.3 per 100,000 Hispanic females (Table 12). The reasons for this disparity are unknown. However, lack of access to care, stigma, self-denial, and other social factors might be contributing to poorer health outcomes among Blacks/African Americans living with HIV compared to other races/ethnicities.

Table 12: The Number and Rate of Death Among Persons with a Diagnosis of HIV Disease by Sex and Race/Ethnicity in PA, 2020*

Race/ethnicity	Female			Male			Total		
	No.	%	Rate	No.	%	Rate	No.	%	Rate
Asian	0	0	0	1	0.2	0.4	1	0.2	0.2
Black/African American	93	59.6	12.9	195	48.3	29	288	51.4	20.7
Hispanic/Latino[+]	21	13.5	4.3	49	12.1	9.6	70	12.5	7
Multiple races	12	7.7	10.7	17	4.2	15.8	29	5.2	13.2
White	30	19.2	0.6	142	35.1	3	172	30.7	1.8
Total	**156**	**100**	**2.4**	**404**	**100**	**6.4**	**560**	**100**	**4.4**

Data source: PA HIV surveillance
Rates are per 100,000 population.
[+] Hispanic/Latino persons can be of any race.
* Count may be incomplete due to lag in reporting.

Five-year Mortality Data Among People Diagnosed With HIV Disease in PA, 2016-2020

Among the 63,204 persons (15,495 females and 47,709 males) ever diagnosed with HIV disease while residing in PA, the cumulative total deaths by year-end 2020 was 27,401 (43.4%). These deaths may or may not have occurred in PA. By sex, out of the 15,495 females diagnosed in PA. at year-end 2020, a total of 5,754 (37.1%) deaths were reported. Among the 47,709 males diagnosed at year-end 2020, a total of 21,647 (45.4%) deaths have occurred. A total of 2,787 deaths were reported between 2016 and year-end 2020, with females accounting for 753 (27%) deaths and males accounting for 2,034 (73%) deaths. During these five years, the highest number of deaths occurred in 2017 (Table 13).

Table 13: The Number of Deaths Among Persons with a Diagnosis of HIV Disease by Year of Death and Sex in PA, 2016-2020

Sex	Cumulative deaths through 2015	2016	2017	2018	2019	2020*	Cumulative deaths from 2016-2020	Cumulative deaths through Dec. 31, 2020 (total)	
	No.	No.	No.	No.	No.	No.	No.	No.	Percent
Female	5,001	159	164	135	139	156	753	5,754	21
Male	19,613	418	435	408	369	404	2,034	21,647	79
Total	24,614	577	599	543	508	560	2,787	27,401	100

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Blacks/African Americans had disproportionately high mortality compared to other races/ethnicities. Blacks/African Americans accounted for 49.8% (1,389/2,787) of all reported deaths among people diagnosed with HIV disease from 2016 through 2020. Mortality among white individuals and Hispanics/Latinos for the five-year period was 887 (31.8%) and 357 (12.8%), respectively (Table 14).

Table 14: The Number of Deaths Among Persons with a Diagnosis of HIV Disease by Year of Death and Race/Ethnicity in PA, 2016-2020

Race/ethnicity	Cumulative deaths through 2015	2016	2017	2018	2019	2020*	Cumulative deaths from 2016-2020	Cumulative deaths through Dec. 31, 2020 (total)	
	No.	No.	No.	No.	No.	No.	No.	No.	Percent
AI/AN[+]	13	0	0	0	2	0	2	15	0.1
Asian	68	0	4	1	2	1	8	76	0.3
Black/African American	12,259	298	285	263	255	288	1,389	13,648	49.8
Hispanic/Latino[++]	2,644	77	87	67	56	70	357	3,001	11.0
Multiple races	403	28	28	29	30	29	144	547	2
White	9,227	174	195	183	163	172	887	10,114	36.9
Total	24,614	577	599	543	508	560	2,787	27,401	100

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
* Count may be incomplete due to lag in reporting.

Individuals aged 35 to 44 years at the time of death contributed the most (31.1%) to cumulative mortality reported at year-end 2020. However, in the five-year period from the year 2016 through the year 2020, PLWH, aged 55 to 64 years accounted for the highest number (1,012/2,787 or 36.3%) of deaths among individuals diagnosed with HIV (Table 15).

Table 15: The Number of Deaths Among Persons with a Diagnosis of HIV Disease by Year of Death and Age at Death in PA, 2016-2020

Age (years)	Cumulative deaths through 2015 No.	2016 No.	2017 No.	2018 No.	2019 No.	2020* No.	Cumulative deaths from 2016-2020 No.	Cumulative deaths through Dec. 31, 2020 (total) No.	Percent
≤12	151	0	0	0	0	0	0	151	0.6
13-14	12	0	0	0	0	0	0	12	0
15-24	382	4	5	5	2	5	21	403	1.5
25-34	4,685	38	33	24	26	30	151	4,836	17.6
35-44	8,227	66	57	52	51	58	284	8,511	31.1
45-54	6,623	150	162	139	111	99	661	7,284	26.6
55-64	3,234	211	202	209	182	208	1,012	4,246	15.5
≥65	1,300	108	140	114	136	160	658	1,958	7.1
Total	**24,614**	**577**	**599**	**543**	**508**	**560**	**2,787**	**27,401**	**100**

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Cumulative mortality among individuals diagnosed through year-end 2020 who were MSM accounted for 10,018 (36.6%) of all mortality. This was followed closely by 9,332 (34.1%) among PWID and 4,783 (17.5%) heterosexual contact. A total of 2,787 deaths were reported between the years 2016 and 2020. During this period, the total number of deaths associated with IDU was 850 (30.5%), which was approximately a third of all deaths among people diagnosed with HIV disease compared to 829 (29.7%) among heterosexual contact and 766 (27.5%) among MSM during these five years (Table 16).

Table 16: The Number of Deaths Among Persons with a Diagnosis of HIV Disease by Transmission Category and Year of Death in PA, 2016-2020

Transmission category	Cumulative deaths through 2015 No.	2016 No.	2017 No.	2018 No.	2019 No.	2020* No.	Cumulative deaths from 2016-2020 No.	Cumulative deaths through Dec. 31, 2020 (total) No.	percent
Heterosexual contact	3,954	171	186	151	162	159	829	4,783	17.5
IDU	8,482	174	173	178	162	163	850	9,332	34.1
MSM	9,252	149	173	147	129	168	766	10,018	36.6
MSM&IDU	1,493	44	31	30	24	35	164	1,657	6.0
All pediatric mode	189	8	3	6	1	4	22	211	0.8
**Other	1,244	31	33	31	30	31	156	1,400	5.1
Total	**24,614**	**577**	**599**	**543**	**508**	**560**	**2,787**	**27,401**	**100**

Data source: PA HIV surveillance
** Other transmission category included unknown risk factor, risk not reported, no risk factor identified, and blood transfusion
* Count may be incomplete due to lag in reporting.

Subsection IV: People Living with HIV (PLWH) and HIV Diagnosed Prevalence Rate in PA

This section of the profile describes the number of people diagnosed with HIV and alive each year-end. It includes all people who are residents of PA at each year-end regardless of the place of HIV diagnosis. These estimates for PLWH in the commonwealth of PA are based on the last known address reported in the HIV surveillance system. This estimate provides the most accurate count of PLWH in PA as it accounts for the immigration in and emigration out of PA The number of PLWH at year-end 2020 was 39,909 (Table 17). The number of PLWH increased from 39,402 at year-end 2016 to 39,909 at year-end 2020 (Table 18). A higher proportion of PLWH are resident in the southeastern part of the state and Allegheny County in the southwestern part of the state. Philadelphia County accounted for 46% (18,328/39,909) of all PLWH followed by Allegheny with 9% (3,450/39,909) of PLWH. Philadelphia and the surrounding counties of Bucks, Chester, Delaware, and Montgomery in the southeastern part of the state accounted for 60% (23,768/39,909) of PLWH at year-end 2022 in PA (Figure 15 and Table 17). The overall diagnosed HIV prevalence rate in Pennsylvania in 2020 was 312 per 100,000 population. Philadelphia, Dauphin, Union, Lehigh, and Delaware counties had rates higher than 312 per 100,000 population. The highest rate was observed in Philadelphia County at 1,157 per 100,000 population (Figure 16 and Table 17). Information on the PLWH/diagnosed prevalence rate of HIV at the county level will assist in making informed decisions regarding HIV prevention and care resource allocation.

Table 17: The Number of PLWH at Year-end 2020 and Diagnosed Prevalence Rate by County in PA

| County | PLWH at year-end 2020 | | Estimated diagnosed prevalence rate per 100,000 county population* |
	Number	Percent	
Adams	214	0.5	208
Allegheny	3,450	8.6	284
Armstrong	46	0.1	71
Beaver	157	0.4	96
Bedford	46	0.1	96
Berks	1,285	3.2	305
Blair	121	0.3	99
Bradford	54	0.1	90
Bucks	1,297	3.2	206
Butler	108	0.3	57
Cambria	171	0.4	131
Cameron	2-	0	45
Carbon	178	0.4	277
Centre	246	0.6	151
Chester	729	1.8	139
Clarion	94	0.2	245
Clearfield	81	0.2	102
Clinton	27	0.1	70

County	PLWH at year-end 2020		Estimated diagnosed prevalence rate per 100,000 county population*
	Number	Percent	
Columbia	111	0.3	171
Crawford	92	0.2	109
Cumberland	378	0.9	149
Dauphin	1,259	3.2	452
Delaware	2,118	5.3	374
Elk	16	0.0	53
Erie	367	0.9	136
Fayette	139	0.3	108
Forest	8	0.0	110
Franklin	189	0.5	122
Fulton	14	0.0	96
Greene	33	0.1	91
Huntingdon	51	0.1	113
Indiana	53	0.1	63
Jefferson	3	0	7
Juniata	20	0.1	81
Lackawanna	526	1.3	251
Lancaster	905	2.3	166
Lawrence	80	0.2	94
Lebanon	262	0.7	185
Lehigh	1,443	3.6	391
Luzerne	540	1.4	170
Lycoming	230	0.6	203
McKean	25	0.1	62
Mercer	95	0.2	87
Mifflin	33	0.1	72
Monroe	443	1.1	260
Montgomery	1,296	3.2	156
Montour	19	0.0	104
Northampton	202	0.5	66
Northumberland	99	0.2	109
Perry	20	0.1	43
Philadelphia	18,328	45.9	1,157
Pike	158	0.4	283
Potter	9	0.0	54
Schuylkill	241	0.6	170
Snyder	32	0.1	79
Somerset	79	0.2	108
Sullivan	2	0	33
Susquehanna	32	0.1	79
Tioga	25	0.1	62
Union	191	0.5	425

County	PLWH at year-end 2020		Estimated diagnosed prevalence rate per 100,000 county population*
	Number	Percent	
Venango	39	0.1	77
Warren	15	0.0	38
Washington	119	0.3	58
Wayne	37	0.1	72
Westmoreland	164	0.4	47
Wyoming	10	0.0	37
York	1,053	2.6	234
PA total	**39,909**	**100**	**312**

Data sources: PA HIV surveillance
　　　　　PA Dept. of Health Enterprise Data Dissemination Informatics Exchange (EDDIE). Population by county.
　　　　　https://www.phaim1.health.PAgov/EDD/WebForms/PopCntySt.aspx. Accessed November 29, 2021.
*County population data used was for the year 2019

Figure 15: The Estimated Number of PLWH by County at Year-end in PA, 2020
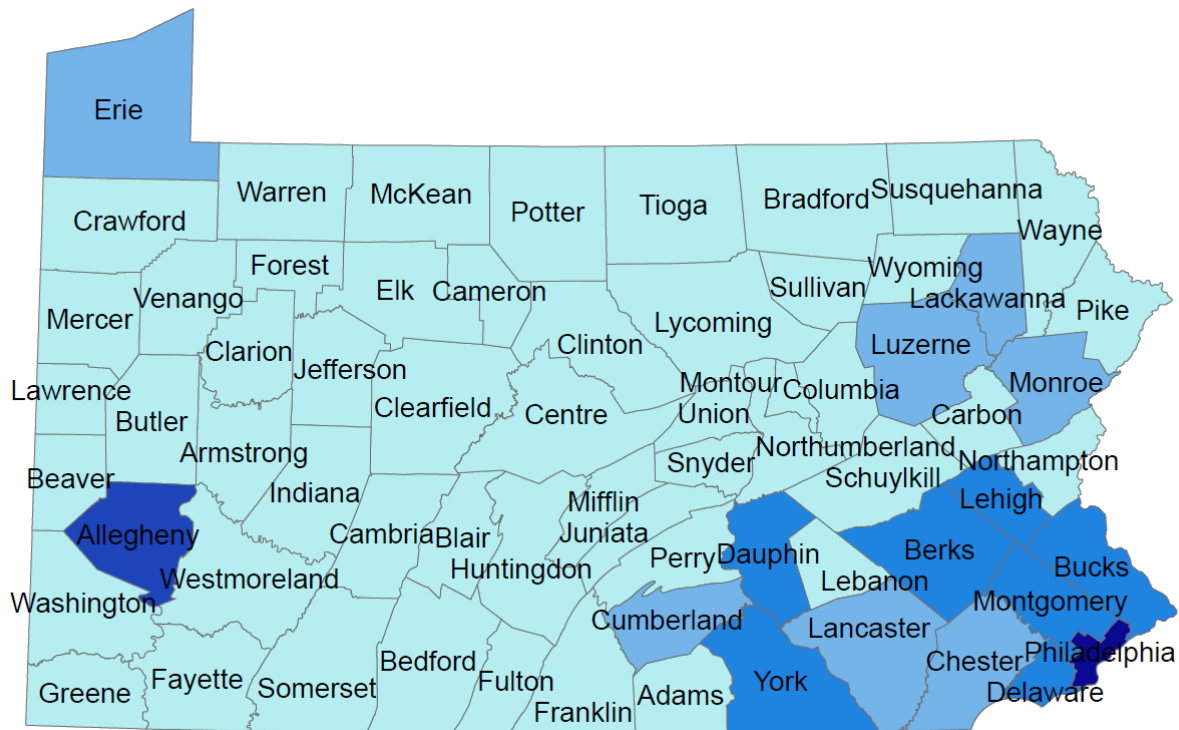
Data source: PA HIV surveillance

Legend
- 2 - 262
- 263 - 905
- 906 - 2,118
- 2,119 - 3,450
- 3,451 - 18,328

Figure 16: The Diagnosed Prevalence Rate (per 100,000 county population) of HIV by County at Year-end in PA, 2020
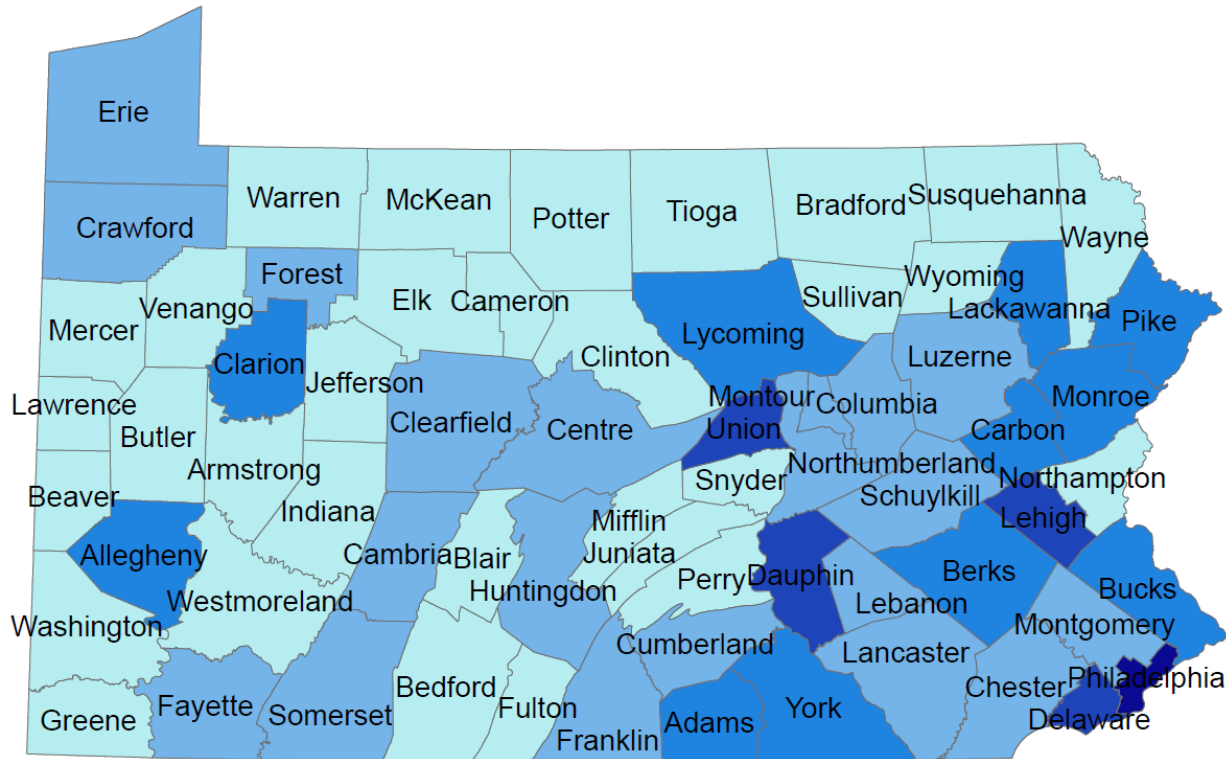
Data source: PA HIV surveillance

Legend

- 7 - 99
- 100 - 185
- 186 - 305
- 306 - 452
- 453 - 1,157
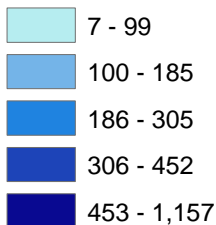
People Living With Diagnosed HIV Disease In PA, 2016-2020 by Selected Characteristics, PA, 2016-2020

The number of PLWH increased from 39,402 at year-end 2016 to 39,909 at year-end 2020 (Table 18). By sex/gender, a total of 28,745 (72%) were males,10,714 (26.8%) were females and 450 (1.1%) were transgender. By race/ethnicity, individuals who identified as Blacks/African Americans are often disproportionately impacted by HIV disease. A total of 18,660 (46.8%) of PLWH at year-end 2020 were Blacks/African Americans compared to individuals who identified as white (11,963 or 30%) or Hispanics/Latinos (7,147 or 17.9%). By current age at year-end 2020, individuals aged 45 to 64 years accounted for 54% (21,567) of PLWH. A total of 5,347 (13.4%) of PLWH were 65 years or older. Among PLWH,

transmission through MSM still accounts for the highest number of HIV disease. A total of 16,405 (41.1%) of PLWH who were alive at year-end 2020 were MSM compared to 12,051 (30.2%) who acquired HIV through heterosexual contact, 6,832 (17.1%) through IDU or 1,806 (4.5%) through MSM and IDU . There are 2,798 (7.0%) PLWH infected through other modes of transmission (Table 18). With advances in diagnosis, treatment options, availability of care, and implementation of prevention measures, fewer people are acquiring HIV, and more people are living longer with the disease.

Table 18: People Living With Diagnosed HIV Disease in PA, 2016-2020

Selected characteristics	Year					
	2016	**2017**	**2018**	**2019**	**2020**	
	No.	No.	No.	No.	No.	%
Total	**39,402**	**39,963**	**39,832**	**39,921**	**39,909**	**100**
Sex/Gender						
Female	10,675	10,753	10,729	10,731	10,714	26.8
Male	28,321	28,779	28,652	28,737	28,745	72
Transgender	406	431	451	453	450	1.1
Age at year-end (years)						
≤12	2	3	3	3	3	0
13-14	0	0	0	1	0	0
15-24	978	963	939	872	764	1.9
25-34	5,322	5,408	5,453	5,482	5,341	13.4
35-44	7,025	7,066	6,964	6,928	6,887	17.3
45-54	13,042	12,346	11,442	10,561	9,876	24.7
55-64	9,819	10,476	10,852	11,345	11,691	29.3
≥65	3,214	3,701	4,179	4,729	5,347	13.4
Race/ethnicity						
American Indian/Alaska Native	47	50	51	50	54	0.1
Asian	321	331	346	352	363	0.9
Black/African American	18,453	18,706	18,623	18,694	18,660	46.8
Hispanic/Latino[+]	6,755	6,909	7,003	7,090	7,147	17.9
Native Hawaiian/Other Pacific Islander	24	25	26	22	25	0.1
White	12,049	12,176	12,053	11,997	11,963	30
Multiple races	1,752	1,765	1,729	1,715	1,696	4.2
Unknown	1	1	1	1	1	0
Transmission category						
Male-to-male sexual (MSM) contact	16,144	16,679	16,752	16,996	16,405	41.1
Injection drug use (IDU)	7,961	7,844	7,644	7,488	6,832	17.1
--*Male*	5,080	4,980	4,841	4,723	4,385	11
--*Female*	2,881	2,864	2,802	2,764	2,447	6.1
MSM and IDU	1,944	1,943	1,913	1,902	1,806	4.5

Selected characteristics	Year					
	2016	**2017**	**2018**	**2019**	**2020**	
	No.	**No.**	**No.**	**No.**	**No.**	**%**
Total	**39,402**	**39,963**	**39,832**	**39,921**	**39,909**	**100**
Heterosexual contact	13,247	13,390	13,421	13,434	12,051	30.2
--Male	5,448	5,497	5,490	5,464	5,069	12.7
--Female	7,799	7,893	7,931	7,970	6,982	17.5
Pediatric mode*	19	20	18	19	17	0
Other**	x	x	x	x	2,798	7

Data source: PA HIV surveillance
* Pediatric mode refers to perinatal exposure, HIV diagnosed at age 13 years or older.
** Other transmission category included risk not reported, no risk identified risk, and received transfusion/transplant/clotting factor in adults only.
+ Hispanic/Latino persons can be of any race
Technical note: The data in this table was generated using the CD4 depletion model. Because the CD4 model is based is based on transmission categories for adults and adolescents, persons classified in a pediatric category or age <13 years at diagnosis are excluded.

Section 3: Disparities in HIV Diagnosis, PLWH And Mortality Among People Diagnosed and Living with HIV in PA

The 1980s and early 1990s represent a period of rapid increases in newly diagnosed HIV disease and death from HIV disease. However, with the development and introduction of highly active antiretroviral therapy, or HAART, in the treatment regimen for HIV/AIDS in 1996, there was a noticeable reduction in HIV morbidity and mortality in the United States and PA.[25] In PA, there was a reduction in the number of newly diagnosed HIV disease from a peak of about 3,000 in 1991 to about 2,000 in 1996 and now, an estimated 779 newly diagnosed HIV in 2020. Despite the rapid decline in cases, disparities exist among the different groups impacted by the disease. The predominant transmission mode remains MSM with the disproportionate impact seen in youths, ages 25 to 34 years, and minority populations including Blacks/African Americans and Hispanics/Latinos. As health disparities have been observed, greater attention needs to be placed on identifying the social determinants of health that influence these disparities with subsequent implementation of practical interventions and prevention strategies.

Healthy People 2020 defines a health disparity as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."[26]

Closely linked to health disparity is health equity. Healthy People 2020 also defines health equity as the "attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities."[27] Health disparity and equity continue to be one of the goals of Healthy People 2030. At the core of ending the HIV epidemic (EHE) initiative in the US is addressing disparities in HIV prevention, diagnoses, treatment, and response.

Disparities among persons diagnosed with HIV disease
By race/ethnicity, Blacks/African Americans and Hispanics/Latinos are disproportionately affected by HIV. Blacks/African Americans accounted for 48.5% (378/779) of all newly diagnosed HIV disease in the year 2020, and 12% of the general population of PA. Hispanics/Latinos accounted for 16.6% (129/779) of newly diagnosed HIV disease and 7.8% of the general population of PA compared to white individuals who accounted for 81.6% of the general population of PA and 31.2% (243/779) of newly diagnosed HIV disease in the year 2020. Blacks/African Americans and Hispanics/Latinos accounted for 65.1% (507/779) of all newly diagnosed HIV disease in 2020 and 19.8% of the general population in PA (Table 2).

In a five-year period from 2016 to 2020, similar trends were observed with Blacks/African Americans accounting for approximately half (2,407/4,991) of all newly diagnosed HIV

disease and Hispanics/Latinos accounting for about one-fifth (893/4,991) of all newly diagnosed HIV disease compared to white individuals accounting for 29.6% (1,479/4,991) (Table 7). By race and sex, Black/African American females and males accounted for 56.9% (626/1,101) and 45.8% (1,781/3,890) of all newly diagnosed HIV disease among females and males, respectively (Figure 8). In comparison to the population, Blacks/African American females and males accounted for 6.2% and 5.8% of the population in PA, respectively.[28]

Disparities were also observed in the newly diagnosed HIV disease rate by sex and race/ethnicity. In 2020, the rate of newly diagnosed HIV disease in PA was 6.1 per 100,000 population overall, but the rate for males (9.8 per 100,000 male population) was almost four times the rate for females (2.5 per 100,000 female population). Also, HIV diagnosis rates were highest among black/African American males (42.7 per 100,000 Black/African American population) and females (12.6 per 100,000 Black/African American population). Among males, the rate of newly diagnosed HIV disease for black/African American males was ten times (42.7 per 100,000 Black/African American male population) the rate for white men (4.3 per 100,000 white male population). Similarly, Black/African American females had rates that were approximately 16 times (12.6 per 100,000 Black/African American female population) that of white females (0.8 per 100,000 white female population). The overall rate of newly diagnosed HIV disease in Blacks/African Americans (27.1 per 100,000 population) was approximately 11 times the rate for whites (2.5 per 100,000 population) and more than twice the rate (12.9 per 100,000) for Hispanics/Latinos (Table 2). The reasons for these disparities are unknown. However, lack of access to care, discrimination, stigma, self-denial, delay in seeking treatment and other social factors might be contributing to poorer health outcomes among Blacks/African Americans and Hispanics/Latinos living with HIV disease compared to other races/ethnicities.

By mode of transmission, MSM are the population most affected by HIV disease in PA. MSM comprised over half (52.2% or 407/779) of all newly diagnosed HIV disease in the year 2020 and 52% (2,593/4,991) from the year 2016 to the year 2020 (Tables 4 and 9). Among the 3,890 males diagnosed from the year 2016 to the year 2020, MSM accounted for 66% (2,593/3,890) of all newly diagnosed HIV disease (Figure 10) with Black/African American MSM accounting for 46.2% (1,197/2,593) compared to 18.2% (473/2,593) for Hispanics/Latino MSM or 30.6% (794/2,593) for white MSM (Figure 13). Among females, the predominant mode of transmission of HIV disease was through heterosexual contact, accounting for 57.4% (632/1,101) from the year 2016 to the year 2020 (Figure 10). Black/African American women who acquired HIV disease through heterosexual contact accounted for 31.4% (346/1,101) of all disease diagnosed from the year 2016 to the year 2020 and 54.7% (346/632) among female heterosexuals. IDU accounted for 12.5% (138/1,101) of all newly diagnosed HIV disease among females from the year 2016 to the year 2020 (Figure 10). However, white females were disproportionally impacted by IDU-associated HIV epidemic and accounted for 55.1% (76/138) of the IDU-related newly diagnosed HIV disease during this period.

By age at diagnosis, individuals aged 25 to 34 years are disproportionately impacted by the HIV epidemic. This age group accounted for 36.3% (283/779) of all newly diagnosed HIV disease in 2020 (Table 3). During the five-year period from 2016 to 2020, individuals who were in the age group 25 to 34 years at the time of diagnosis accounted for 34.5%

(1,724/4,991) of all newly diagnosed HIV disease (Table 8). In addition, this age group accounted for the highest proportion of all newly diagnosed HIV disease in all transmission categories. For example, this age group accounted for 39% of the newly diagnosed HIV disease among MSM. Among heterosexual contact, this age group accounted for 26.8%, and among IDU, 35.8% (Figure 12). This analysis shows that, in general, Black/African American individuals aged 25 to 34 years and MSM aged 25 to 34 years are disproportionately impacted by HIV.

Disparities among PLWH
By race, individuals who identified as Blacks/African Americans are often disproportionately impacted by HIV. A total of 18,660 (46.8%) PLWH at year-end 2020 were Blacks/African Americans compared to individuals who identified as white (11,963 or 30%) or Hispanics/Latinos (7,147 or 17.9%). MSM still accounts for the highest number of PLWH. A total of 16,405 (41.1%) PLWH who are alive at year-end 2020 were MSM compared to 12,051 (30.2%) heterosexual contact or 6,832 (17.1%) IDU or 1,806 (4.5%) MSM and IDU. Also, individuals aged 45 to 64 years accounted for 54% (21,567) of PLWH at year-end 2020, and a total of 5,347 (13.4%) of PLWH were 65 years or older (Table 18). This data on age points to the fact that more people are living longer with HIV because of advances in HIV therapeutics and care.

Disparities in HIV-associated mortality
Among the 63,204 persons ever diagnosed with HIV disease while residing in PA, cumulative total deaths by year-end 2020 for persons diagnosed with HIV disease were 27,401 (43.4%) [Table 13]. In 2020, there were 560 deaths, and the overall crude mortality rate was 4.4 per 100,000 population. This rate was higher among males at 6.4 per 100,000 male population than females at 2.4 per 100,000 female population. By race, Blacks/African Americans had a higher death rate of 20.7 per 100,000 population compared to 1.8 per 100,000 for white individuals and 7 per 100,000 population for Hispanics/Latinos. Overall, the death rate among Blacks/African Americans diagnosed with HIV disease was approximately 12 times the death rate for whites. By race and sex, Black/African American males diagnosed with HIV disease had the highest death rate of 29 per 100,000 male population compared to 3 per 100,000 for white males and 9.6 per 100,000 for Hispanic/Latino males. Also, Black/African American females had the highest death rate of 12.9 per 100,000 female population compared to 0.6 per 100,000 for white females and 4.3 per 100,000 for Hispanic females (Table 12). The data shows that the disease disproportionately impacts Black/African American PLWH.

Discussion
The impact of poverty and lack of health insurance on the health and well-being of the population cannot be overemphasized. These, and the dynamics of stigma, and social networks are the many factors contributing to health disparities. According to the 2019 ACS 1-Year Estimates, the population of Pennsylvanians determined to be living below the poverty level in the past 12 months was 12% (±0.3%), which is comparable to the level in the entire United States of 12.3% (±0.1%). However, disparities existed by sex and race/ethnicity. More females were in poverty than males (13% versus 10.9%). White individuals also had the lowest levels of poverty at 9.3% compared to Blacks/African Americans at 24.9%,

Hispanics/Latinos at 26.2%, or American Indian/Alaska Native at 20.4%. The poverty level among Asians was 12.7%, while those identified as having two or more races was 19.3%.[14]

Other state statistics estimate that 5.8% of Pennsylvania's civilian noninstitutionalized are without health insurance. However, Blacks/African Americans and Hispanics had an uninsured rate higher than the state rate at 6.9% and 12.5%, respectively.[22] Although it has been determined that race/ethnicity is not the predisposing or causal factor in disease occurrence, but rather social determinants of health like poverty (lack of income or low income) and lack of insurance (which may limit access to healthcare) has impact on health outcomes.[1,2]

As it relates to HIV, the HIV surveillance data shows that individuals aged 25 to 34 years, MSM, and the minority population (Blacks/African Americans and Hispanics/Latinos) are disproportionately impacted by the epidemic. Several factors such as stigma, poverty, lack of access to care, and denial have been shown to significantly contribute to disparities observed in the diagnosis of HIV, access to care, and well-being of PLWH.[28,29] These are social factors that can be addressed using myriads of interventions and strategies. The Division of HIV Disease has partnered with several counties and municipal health departments, and community-based organizations to help provide services that will reduce disparities and promote health equity and social justice.

However, more needs to be done as the nation moves towards achieving the goals of ending the HIV epidemic. Below are some activities the DOH has initiated along with some recommendations on initiating new measures or expanding existing activities. These includes:

1. Ensuring that subrecipients and sub-subrecipients provide culturally and linguistically appropriate services (CLAS) at all levels of patient engagement.
2. Encouraging the provision of trauma-informed care to PLWH
3. Capacity building and workforce innovations that includes the creation of a diverse public health workforce that mirrors the HIV epidemic through outreach and minority recruitment.
4. Collaboration with community health workers (CHW) and community partners on HIV prevention
5. Recognizing the specific needs of minority populations diagnosed and living with HIV
6. Broad, stigma-free prevention messages aimed at normalizing the disease while those affected seek treatment and remain in care
7. Creation of statewide specific program activities aimed at reducing disparities among MSM, youths, and minority populations.

Section 4: HIV Transmission Cluster and Outbreaks in PA, 2018-2021

The PA Department of Health (PADOH) started implementation of HIV Cluster detection and response activities at the end of 2018. The PADOH monitors two types of HIV transmission clusters, namely Molecular cluster, and Time-Space cluster. A molecular cluster is of national interest if at least five cases were diagnosed in the most recent 12-month period at a genetic distance threshold of 0.5%, and a time-space cluster is of interest if the number of cases is above what would be expected or there is a significant increase of cases in vulnerable populations such as PWID, women of childbearing age, homeless individuals, or persons with STD coinfection. A total of 20 HIV transmission clusters were identified between 2018-2021. There were 8 molecular and 12 time-space clusters of interest. In addition, PADOH also participated in the investigation of two national molecular clusters. The cluster incidence data is presented in the table 19 below:

Table 19: Number of Identified HIV Clusters by Type, Entity and Year of identification in PA, 2018-2021

Cluster Type	CDC national clusters				PA clusters				Total	
	2018	2019	2020	2021	2018	2019	2020	2021		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	%
Molecular	1	1	0	0	0	6	1	1	8	40
Time-Space	0	0	0	0	1	1	5	5	12	60
Total	1	1	0	0	1	7	6	6	20	100

Data source: PA HIV surveillance

The locations of these clusters varied geographically in the state. A total of 441 people were identified as members of both Molecular cluster, and Time-Space cluster. Males represented 87.5% of the cases. MSM was the most predominant mode of HIV transmission accounting for 65.5% of the people identified in the clusters. By age, individuals aged 25 to 34 years accounted for 47.4% of people in the HIV transmission clusters. By race/ethnicity, 52.6% of individuals in the cluster identified as white individuals. A complete description of the characteristics of the individuals with HIV identified as cluster members are shown in tables 20-23 below.

Table 20: The Number HIV Cluster Cases by Sex and Race/Ethnicity in PA, 2018-2021

Race/Ethnicity	Sex at birth					
	Female		Male		Total*	
	No.	%	No.	%	No.	%
AI/AN[+]	0	0	1	0.2	1	0.2
Asian	0	0	1	0.2	1	0.2
Black/African American	26	5.9	125	28.3	151	34.2
Hispanic/Latino[++]	7	1.6	49	11.1	56	12.7
White	22	5	210	47.7	232	52.6
Total	55	12.5	386	87.5	441	100

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
* Count may be incomplete due to lag in reporting.

Table 21: The Number of HIV Cluster Cases by Sex and Age at Diagnosis in PA, 2018-2021

Age group (years)	Female No.	Female %	Male No.	Male %	Total* No.	Total* %
≤12	0	0	1	0.2	1	0.2
13-14	1	0.2	0	0	1	0.2
15-24	4	0.9	58	13.2	62	14.1
25-34	18	4.1	190	43.1	209	47.4
35-44	11	2.5	70	15.9	81	18.4
45-54	13	2.9	40	9.1	53	12
55-64	8	1.8	22	5	30	6.8
≥65	0	0	4	0.9	4	0.9
Total	**55**	**12.5**	**386**	**87.3**	**441**	**100**

Data source: PA HIV surveillance

* Count may be incomplete due to lag in reporting.

Table 22: The Number of HIV Cluster Cases by Sex and Transmission Category in PA, 2018-2021

Transmission category	Female No.	Female %	Male No.	Male %	Total* No.	Total* %
Heterosexual contact	49	11.1	51	11.6	100	22.7
IDU	6	1.4	11	2.5	17	3.9
MSM	0	0	289	65.5	289	65.5
MSM&IDU	0	0	32	7.3	32	7.3
Unknown	0	0	3	0.7	3	0.7
Total	**55**	**15.5**	**386**	**87.5**	**441**	**100**

Data source: PA HIV surveillance
* Count may be incomplete due to lag in reporting.

Table 23: The Number of HIV Cluster Cases by Transmission Category and Race/Ethnicity in PA, 2018-2021

	Transmission category							
Race/ethnicity	Heterosexual contact No.	IDU No.	MSM No.	MSM& IDU No.	All pediatric mode No.	Unknown No.	Total No.	%
AI/AN[+]	1	0	0	0	0	0	1	0.2
Asian	0	1	0	0	0	0	1	0.2
Black/African American	57	1	87	6	0	0	151	34.2
Hispanic/Latino[++]	14	1	38	2	0	1	56	12.7
White	28	14	164	24	0	2	232	52.6
Total	**100**	**17**	**289**	**32**	**0**	**3**	**441**	**100**

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
* Count may be incomplete due to lag in reporting.

Section 5: Ryan White HIV/AIDS Program (RWHAP) Part B, HIV Diagnoses in the Counties and RWHAP Part B Subrecipients Regions

The HIV Care section is responsible for the coordination and delivery of HIV care and support services. This is accomplished through contracts with seven regional subrecipients. These subrecipients in turn contract with local providers to provide direct services. This system provides a statewide service delivery network for persons with or impacted by HIV.

The Care section receives funding from several sources: Ryan White Part B Grant (including the Special pharmaceutical benefits program [SPBP]) provided by HRSA, Housing opportunities for persons living with AIDS (HOPWA) provided through Department of Housing and Urban Development (HUD), state funding, and rebates from SPBP. The Department receives about $40 million each year through HRSA and is required to provide approximately $20 million in funds to match. The SPBP generates rebates through discounted drug pricing with pharmaceutical companies. These rebates provide about $75 million dollars to the program each year. These are the funds we use to provide services to the community.

Approximately 16,000 individuals utilize Ryan White services in PA each year. Services are defined by Core Medical Services or Support Services.

The Core Medical services include:
- Early intervention services (EIS)
- Health insurance premiums and cost sharing assistance
- Home and community-based health services
- Home health care
- Hospice
- Medical case management (including treatment adherence)
- Medical nutrition therapy
- Oral health care
- Outpatient/ambulatory health services
- Mental health services
- Substance abuse service-outpatient

Support services include:
- Childcare services
- Emergency financial assistance
- Food bank/home delivered meals
- Health education/risk reduction
- Housing services
- Linguistic services
- Medical transportation
- Non-medical case management
- Other professional services (ex. legal services)
- Outreach services
- Psychosocial support services
- Referral for health care and support services

- Rehabilitation services
- Respite care
- Substance abuse services - residential

The program is required to validate the eligibility of an individual every 12 months along with ensuring our funds are used as the payer of last resort. The Program must also provide client level data to HRSA each year. HOPWA funding is provided to regional grantees for rental assistance, short term mortgage payments and other housing-related services for people infected with or affected by HIV.

Funding includes resources for:
- Tenant Based Rental Assistance (TBRA)
- Short Term Rent/Mortgage/Utility (STRMU)
- Permanent housing placement
- Supportive services – case management

In 2021 HOPWA helped 511 households receive housing assistance through the HUD HOPWA program and 94 percent of all clients receiving HOPWA housing assistance established or maintained a stable living situation.

The Commonwealth of PA has seven regional HIV care subrecipients (Figure 17) supported by the RWHAP Part B. These subrecipients roles include providing a statewide service delivery network to PLWH and their families. They are AIDS Activities Coordinating Office (AACO), AIDSNET, Northeast United Way of the Wyoming Valley (NE United Way), Southcentral-Family Health Council of PA (SC-FHC), Southwestern-Jewish Healthcare Foundation (SW-JHF), Northwest (NW) Clarion, and Northcentral District Allied Connections (Northcentral). AACO encompassing Philadelphia, Chester, Delaware, Montgomery, and Bucks counties, provides services in the region with the highest estimated number of PLWH. A total of 23,768 (59.6%) of PLWH at year-end 2020 resided in the region served by AACO (Table 24). Out of this, a total of 6,528 (27.5%) were females, 16,887 (71%) were males and, 353 (1.5%) identified as transgender (Table 25). About 14,056 (59.1%) of those PLWH residing in the AACO region were Blacks/African Americans, 5,054 (21.4%) were white individuals and 3,595 (15.1%) were Hispanics/Latinos (Table 26). In addition, 13,546 (59.4%) were aged 25 to 54 years at year-end 2020 (Table 27). By transmission mode, 9,428 (39.7%) were MSM; 4,298 (18.1%) were IDU and 7,736 (32.5%) acquired HIV through heterosexual contact (Table 28). The breakdown of PLWH in other subrecipients regions are highlighted in tables 24 to 28

Figure 17: The Seven Regional HIV Care Subrecipients in PA, 2020
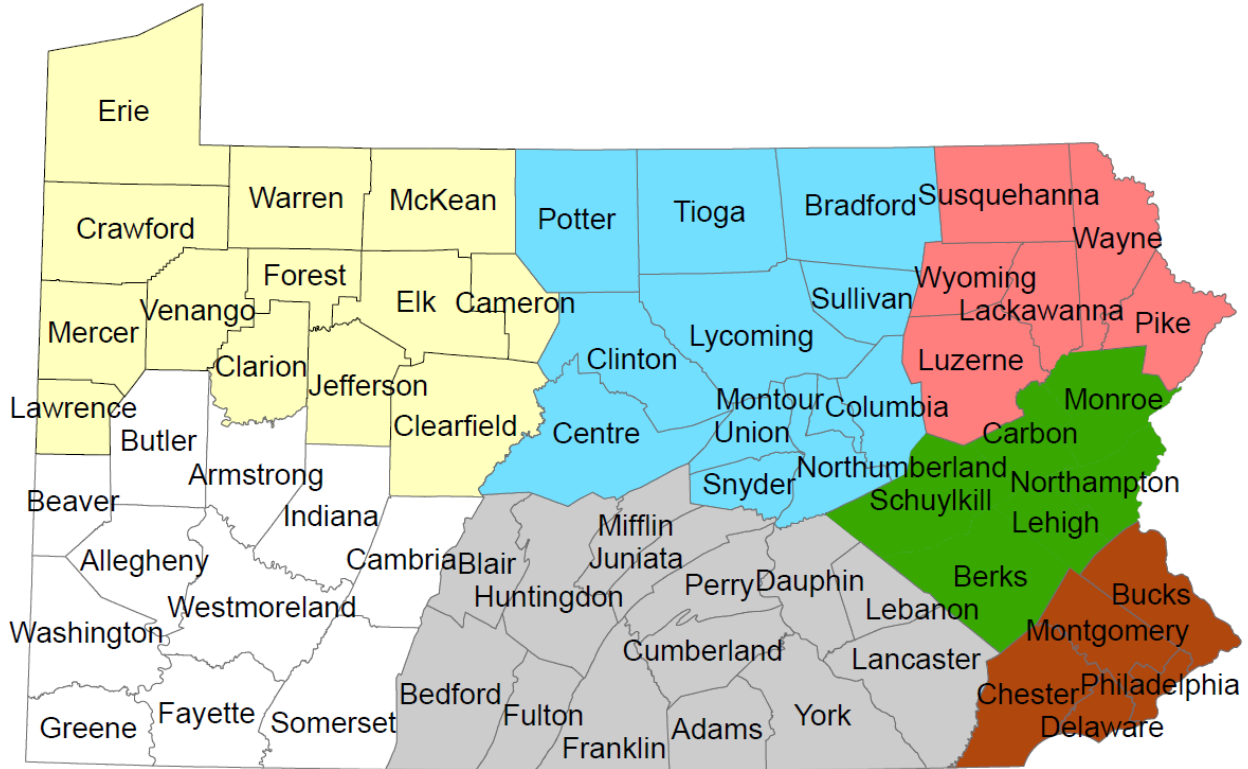
Data source: PA Department of Health, Division of HIV disease.

Legend

- ■ AIDS Activities Coordinating Office (AACO)
- ■ AIDSNET
- ■ Northeast (NE) United Way
- ■ Southcentral-Family Health Council (SC-FHC)
- □ Southwest-Jewish Healthcare Foundation (SW-JHF)
- ■ Northwest (NW) Clarion
- ■ Northcentral

Table 24: The Number of PLWH in RWHAP Part B Subrecipients Region, PA, 2020

Regional Subrecipients	Number	Percent
AACO	23,768	59.6
AIDSNET	3,792	9.5
NE United Way	1,045	2.6
Northcentral	1303	3.3
NW Clarion	917	2.3
SC-FHC	4,565	11.4
SW-JHF	4,519	11.3
Total	**39,909**	**100**

Data source: PA HIV surveillance

Table 25: The Number of PLWH in RWHAP Part B Subrecipients Region by Sex, PA, 2020

Regional Subrecipients	Female No.	Female %	Male No.	Male %	Transgender No.	Transgender %	Total No.
AACO	6,528	27.5	16,887	71.0	353	1.5	23,768
AIDSNET	1,293	34.1	2,483	65.5	16	0.4	3,792
Northcentral	193	18.5	849	81.2	3	0.3	1,045
NE United Way	362	27.8	935	71.8	6	0.5	1,303
NW Clarion	209	22.8	708	77.2	0	0	917
SC-FHC	1,312	28.7	3,229	70.7	24	0.5	4,565
SW-JHF	817	18.1	3,654	80.9	48	1.1	4,519
Total	**10,714**	**26.8**	**28,745**	**72.0**	**450**	**1.1**	**39,909**

Data source: PA HIV surveillance

Table 26: The Number of PLWH in RWHAP Part B Subrecipients Region by Race/Ethnicity in PA, 2020

Regional Subrecipients	Race/Ethnicity							
	AI/AN[+]	Asian	Black/African American	Hispanic/ Latino[++]	Multiple races/unknown	NHPI[+++]	White	Total
	No.	No.	No.	No.	No.	No.	No.	No.
AACO	44	252	14,056	3,594	755	13	5,054	23,768
AIDSNET	2	17	809	1,642	192	2	1,128	3,792
Northcentral	3	9	315	197	50	0	471	1,045
NE United Way	2	7	318	246	76	1	653	1,303
NW Clarion	1	6	266	101	43	1	499	917
SC-FHC	2	30	1,160	1,105	307	2	1,959	4,565
SW-JHF	0	42	1,736	262	274	6	2,199	4,519
Total	**54**	**363**	**18,660**	**7,147**	**1,697**	**25**	**11,963**	**39,909**

Data source: PA HIV surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
[+++]NHPI=Native Hawaiian and Other Pacific Islander.

Table 27: The Number of PLWH in RWHAP Part B Subrecipients Region by Age Group in PA, 2020

Regional Subrecipients	Age Group							
	≤12 No.	15-24 No.	25-34 No.	35-44 No.	45-54 No.	55-64 No.	≥65 No.	Total No.
AACO	3	484	3,342	4,162	5,679	6,842	3,256	23,768
AIDSNET	0	61	366	589	998	1,232	546	3,792
Northcentral	0	15	99	191	295	310	135	1,045
NE United Way	0	16	161	248	319	390	169	1,303
NW Clarion	0	20	107	161	222	295	112	917
SC-FHC	0	75	530	747	1,287	1,332	594	4,565
SW-JHF	0	93	736	789	1,076	1,290	535	4,519
Total	**3**	**764**	**5,341**	**6,887**	**9,876**	**11,691**	**5,347**	**39,909**

Data source: PA HIV surveillance

Table 28: The Number of PLWH in RWHAP Part B Subrecipients Region by Transmission Category in PA, 2020

Regional Subrecipients	Transmission Category						
	Heterosexual contact No.	IDU No.	MSM No.	MSM&IDU No.	Other* No.	Pediatric mode No.	Total No.
AACO	7,736	4,298	9,428	1,013	1,289	4	23,768
AIDSNET	1,266	792	1,141	149	437	7	3,792
Northcentral	242	231	402	72	97	1	1,045
NE United Way	391	229	501	66	114	2	1,303
NW Clarion	234	145	380	68	90	0	917
SC-FHC	1,300	764	1,863	199	437	2	4,565
SW-JHF	882	373	2,690	239	334	1	4,519
Total	**12,051**	**6,832**	**16,405**	**1,806**	**2,798**	**17**	**39,909**

Data source: PA HIV surveillance
* Other transmission category included unknown risk factor, no risk reported, no identified risk factor and received blood transfusion/transplant.

Section 5: Social Determinants of Health and PLWH in PA

According to the World Health Organization (WHO), "*social determinants of health (SDOH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, and political systems.*" [30] These forces and systems in SDOH are contributors to health inequities. These health inequities often create the differences seen in health status/outcomes observed in different populations.

The SDOH identified are education; employment; health systems and services; housing; income and wealth; the physical environment; public safety; the social environment; and transportation. This section of the report looks at SDOH through the lens of socioeconomic status (SES). SES includes income, educational attainment, quality of life, financial security, social status, and social class. [30] It also includes opportunities and privileges that distinguish a group of people from other groups. HIV disease has been shown to be rooted in inequities, both social and economic affecting individuals of lower SES, particularly in impoverished communities. [31] Pellowski, Jennifer A et al. in their research described HIV as the "pandemic of the poor" and the burden of the disease is borne by those of the lowest SES and racial/ethnic minorities. [32]

This section of the report will provide an overview of the SDOH/SES in relation to PLWH by census tract at year-end 2020 in PA.

Technical notes

SDOH data discussed in this section were obtained from the U.S. Census Bureau's American Community Survey (ACS) and the Environmental Systems Research Institute (ESRI). The SDOH data are from the 2015–2019 ACS estimates because census tract data are only available in the 5-year estimates. ESRI ensures the most recent updated data are always available for use. This report discusses six SDOH indicator variables namely: federal poverty status, health insurance coverage, median household income, employment status, and educational attainment level.

Data presented in this report reflect the census tract of the PLWH current residential address at year-end 2020. A census tract is a standard area used by the U.S. Census Bureau for the purpose of counting the population. Census tracts are small, relatively permanent statistical subdivisions of a county or statistically equivalent entity. The census tracts generate geographic units which are stable and necessary for the presentation of statistical data. The population size of a census tract is usually between 1,200 and 8,000 people with an average of 4,000 people. Census tracts are designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment. [33]

Links to the interactive maps
PLWH and Poverty status: https://arcg.is/1qSDyW
PLWH and Insurance status: https://arcg.is/y5vu4
PLWH and Median Household Income: https://arcg.is/0SjSHm0
PLWH and Employment Status: https://arcg.is/1fzS800
PLWH and Educational Attainment: https://arcg.is/KG4yj
PLWH by Census Tract in Rural and Urban Counties: https://arcg.is/1Kfu5G0
PLWH by Census Tract and Location of Ryan White Part B Subrecipients Providers, Pa:
https://arcg.is/1iSbr4

PLWH and Poverty Status
Figures 18 and 19 focuses on the percent of the population whose income in the past 12
months is below the poverty level and PLWH in the census tract. PLWH Data was classified
into 5 categories using natural data breakpoints and poverty levels were presented in
gradients ranging from less than 4% to greater than 29%. There are several places where the
population whose income was below poverty level were greater than 29%. These areas are
clustered around major urban cities and most notably are the Philadelphia and Pittsburgh
areas. Also, the PLWH are also clustered around these urban cities where greater than 29%
of the population are living below the poverty level as seen by the dark dots on the map. Here
is the link to the interactive map which shows the relationship between poverty and PLWH in
PA.
Link: https://arcg.is/1qSDyW

Figure 18: PLWH and Poverty Status by Census Tract in PA, 2020
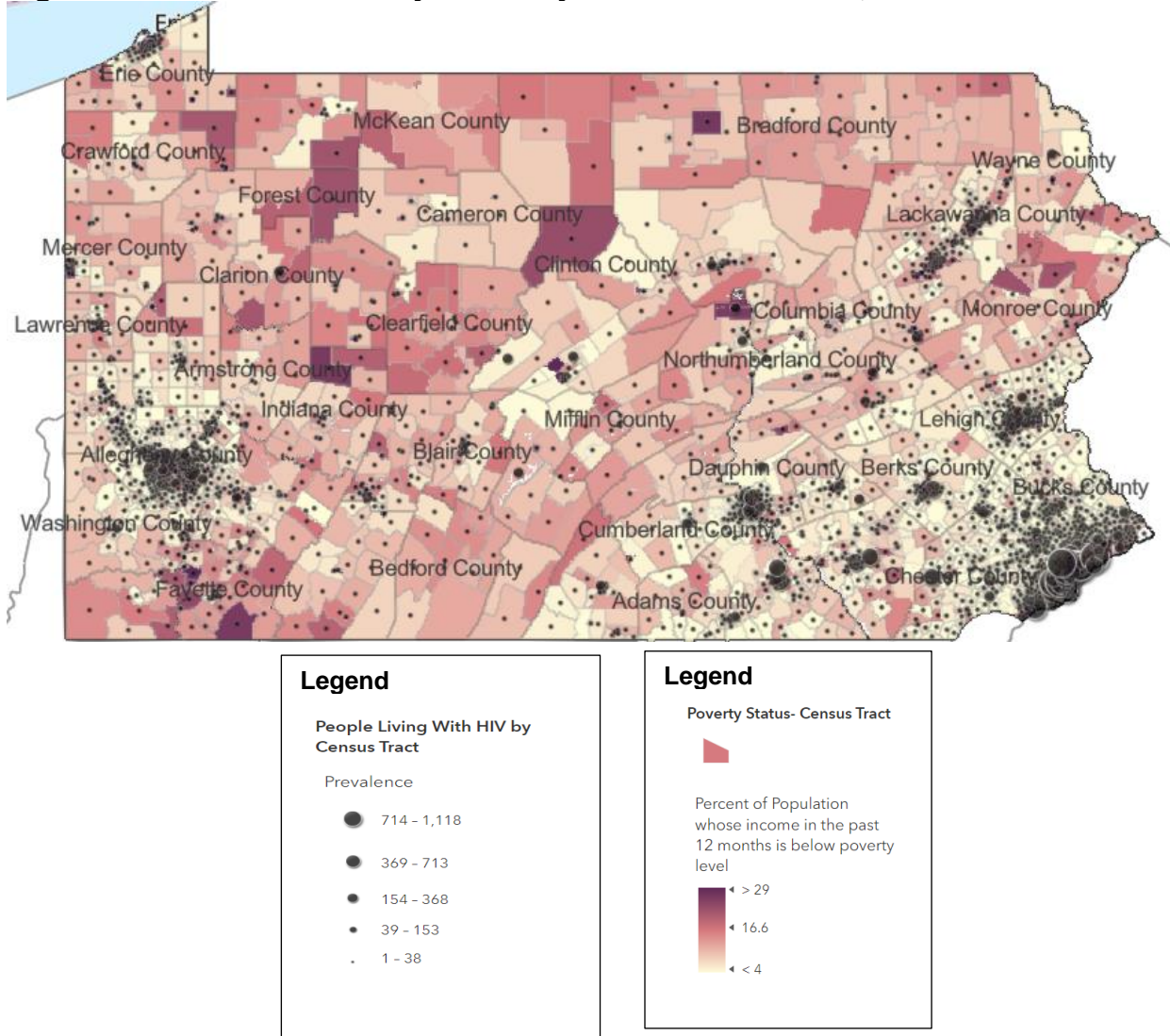
Legend

People Living With HIV by Census Tract

Prevalence

- 714 – 1,118
- 369 – 713
- 154 – 368
- 39 – 153
- 1 – 38

Legend

Poverty Status- Census Tract

Percent of Population whose income in the past 12 months is below poverty level

- > 29
- 16.6
- < 4

Data sources:
PA HIV surveillance
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B17020.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Poverty_by_Age_Boundaries/FeatureServer

Figure 19: PLWH and Poverty Status by Census Tract around Philadelphia and Allegheny Counties, PA, 2020

Legend

People Living With HIV by Census Tract

Prevalence

- 714 – 1,118
- 369 – 713
- 154 – 368
- 39 – 153
- 1 – 38

Legend

Poverty Status- Census Tract

Percent of Population whose income in the past 12 months is below poverty level

- ◄ > 29
- ◄ 16.6
- ◄ < 4

Data sources:
PA HIV surveillance
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table B17020.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Poverty_by_Age_Boundaries/FeatureServer

PLWH and Insurance Status

Figures 20 and 21 focus on the percent of the population with no health insurance coverage and PLWH in the census tract. Percent population without insurance was presented in gradients ranging from less than 3.1% to greater than 17.8%. PLWH Data was classified into 5 classes using natural breaks. There are multiple census tracts in the central region of the state where there is high percentage of uninsured Pennsylvanians as well as in cities around the Philadelphia and Pittsburg area. Also, the PLWH are also clustered around these urban cities where greater than 17.8% of the population are without health insurance coverage. Here is the link to the interactive map which shows the relationship between lack of insurance coverage and PLWH in PA.

Link: https://arcg.is/y5vu4

Figure 20: PLWH and Insurance Status by Census Tract in PA, 2020

Legend

Health Insurance Coverage Census Tract

Percent of Population with No Health Insurance Coverage

- > 17.8
- 10.4
- < 3.1

Legend

People Living With HIV by Census Tract

Prevalence

- 714 – 1,118
- 369 – 713
- 154 – 368
- 39 – 153
- 1 – 38

Data sources:

PA HIV surveillance data

U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B27010.

https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Health_Insurance_Boundaries/FeatureServer

Figure 21: PLWH and Insurance Status by Census Tract Around Philadelphia and Allegheny Counties, PA, 2020
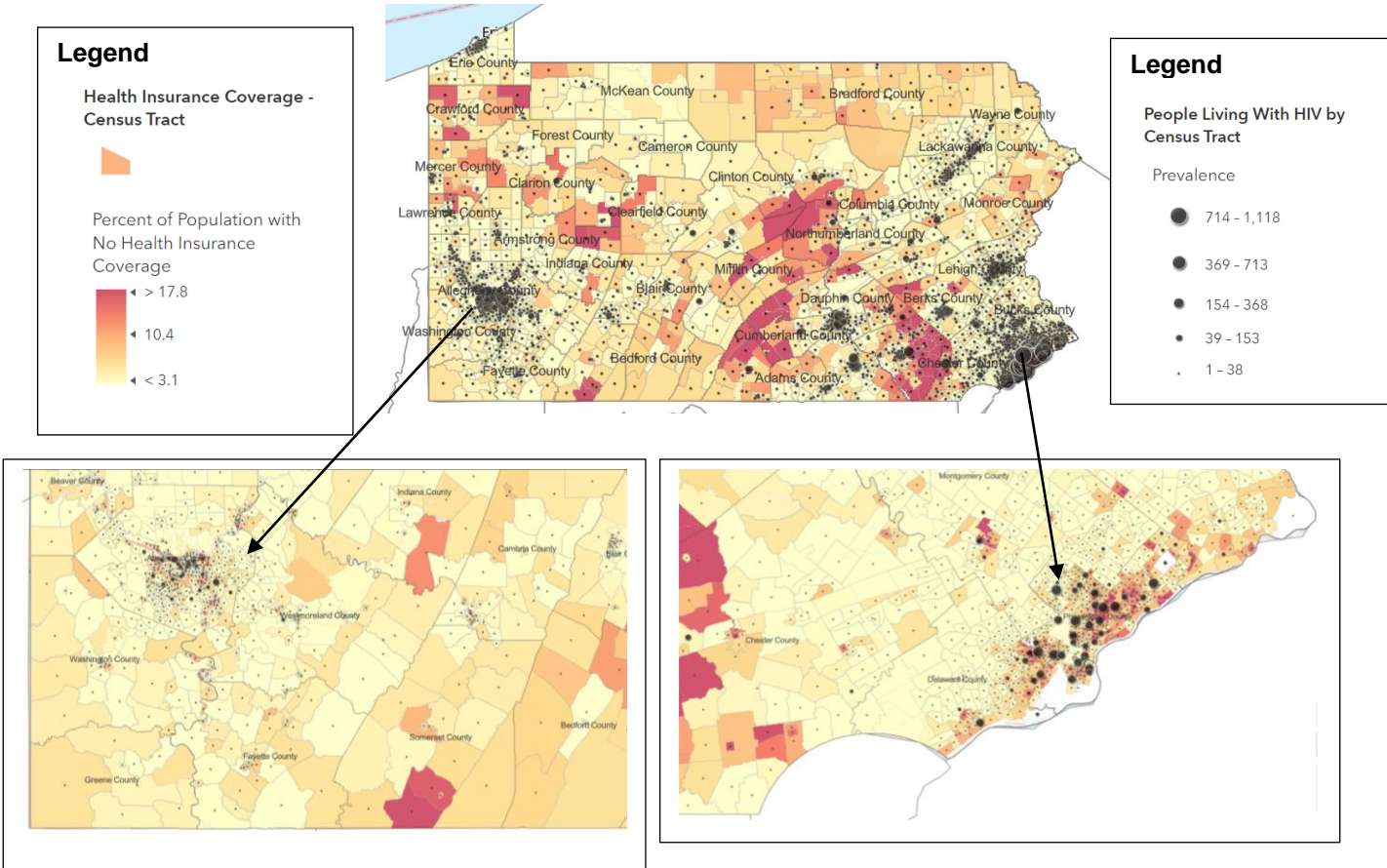
Data sources:
PA HIV surveillance data
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table B27010.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Health_Insurance_Boundaries/FeatureServer

PLWH and Median Household Income

Figures 22 and 23 focus on the median household income in the past 12 months (inflation-adjusted dollars to last year of 5-year range) and PLWH in the census tract. Median household income was presented in gradients ranging from less than $29,100 to greater than $88,500. PLWH Data was classified into 5 classes using natural breaks. There are multiple census tracts in the southeast region and part of the southwest region of the state have household median incomes greater than $88,500. However, census tracts around the major urban cities are low median income areas. PLWH are also clustered around these urban cities where the median household income in past 12 months was less than $29,100. Here is the link to the interactive map which shows the relationship between median household income and PLWH in PA.

Link: https://arcg.is/0SjSHm0

Figure 22: PLWH and Median Household Income by Census Tract, PA, 2020

Legend

Median Household Income - Census Tract

Median Household Income in past 12 months (inflation-adjusted dollars to last year of 5-year range)

◄ > 88,500
◄ 58,800
◄ < 29,100

Legend

People Living With HIV by Census Tract

Prevalence

● 714 – 1,118
● 369 – 713
● 154 – 368
· 39 – 153
. 1 – 38

Data sources:
PA HIV surveillance data
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B19013B, B19013C, B19013D, B19013E, B19013F, B19013G, B19013H, B19013I, B19049, B19053.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Median_Income_by_Race_and_Age_Selp_Emp_

Figure 23: PLWH and Median Household Income by Census Tract Around Philadelphia and Allegheny Counties, PA, 2020
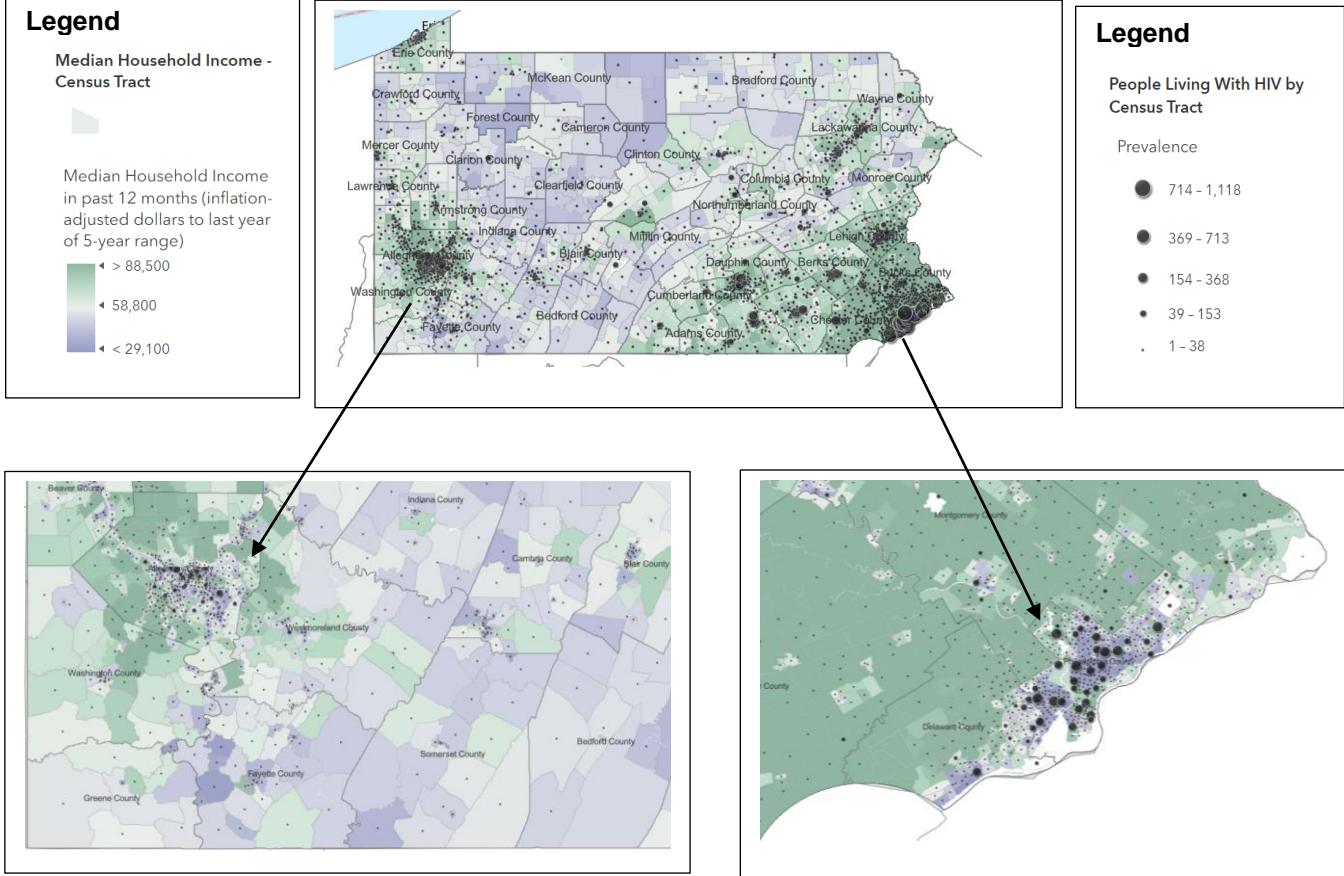
Data sources:
PA HIV surveillance data
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B19013B, B19013C, B19013D, B19013E, B19013F, B19013G, B19013H, B19013I, B19049, B19053.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Median_Income_by_Race_and_Age_Selp_Emp_
Boundaries/FeatureServer

PLWH and Employment Status

Figures 24 and 25 focus on the employment status and PLWH in the census tract. The percentage of unemployed was presented in gradients ranging from less than 3% to greater than 13.5%. PLWH Data was classified into 5 classes using natural breaks. There are several census tracts in the rural areas with high percentage of unemployed population. Census tracts around the major urban cities also have high percentage of unemployed. PLWH are also clustered around these census tracts. Here is the link to the interactive map which shows the relationship between employment status and PLWH in PA.

Link: https://arcg.is/1fzS800

Figure 24: PLWH and Employment Status by Census Tract, PA, 2020
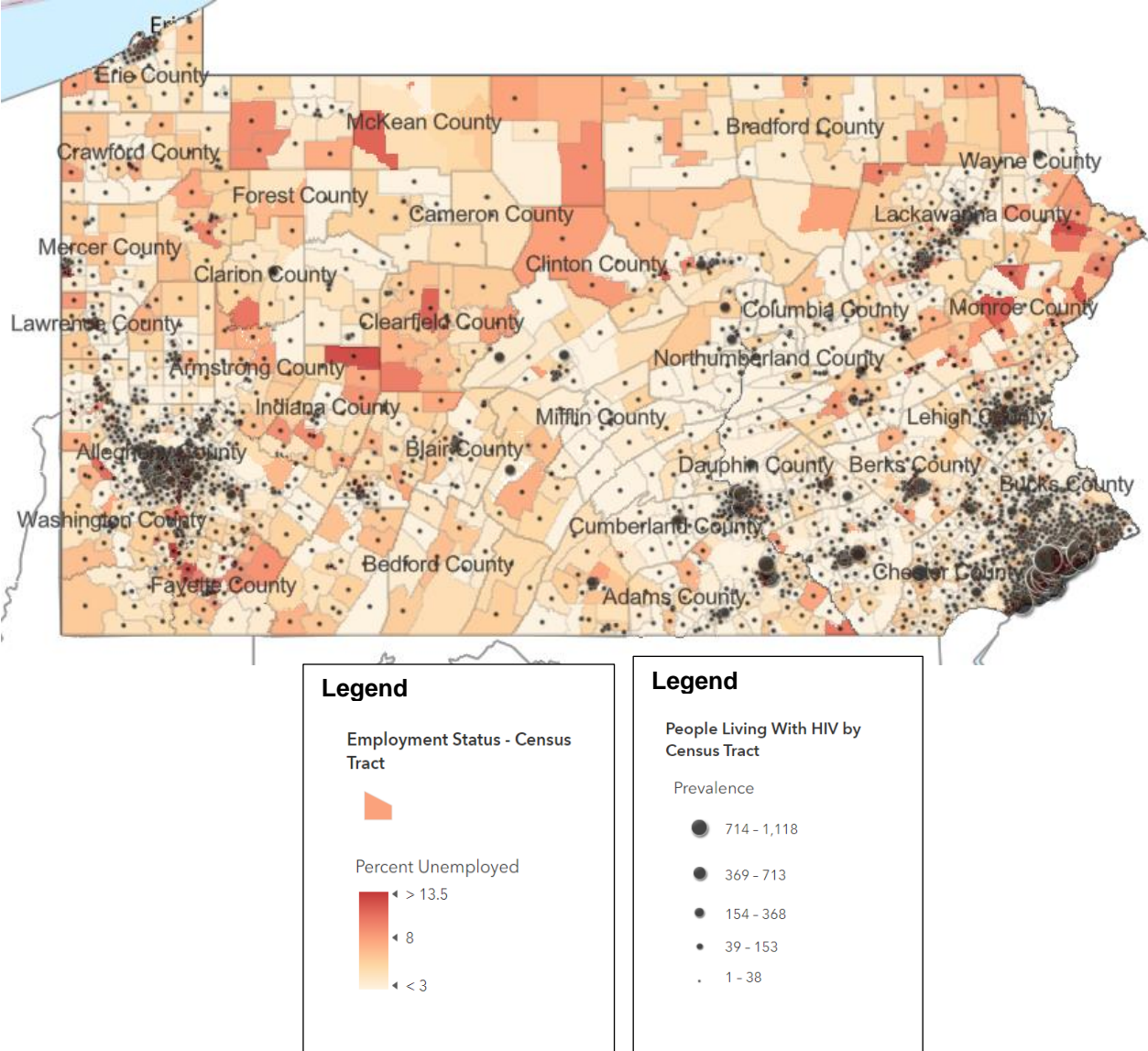
Data sources:
PA HIV surveillance data
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B23020, B23025.
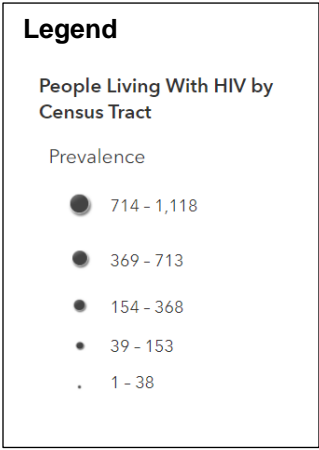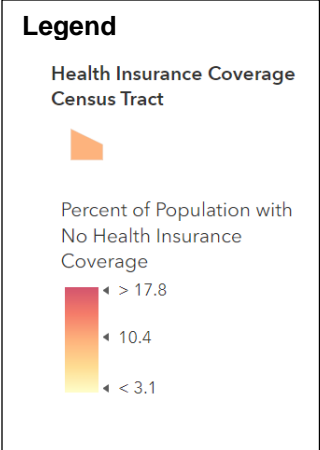https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Employment_Status_Boundaries/FeatureServer

Figure 25: PLWH and Employment Status by Census Tract Around Philadelphia and Allegheny Counties, PA, 2020
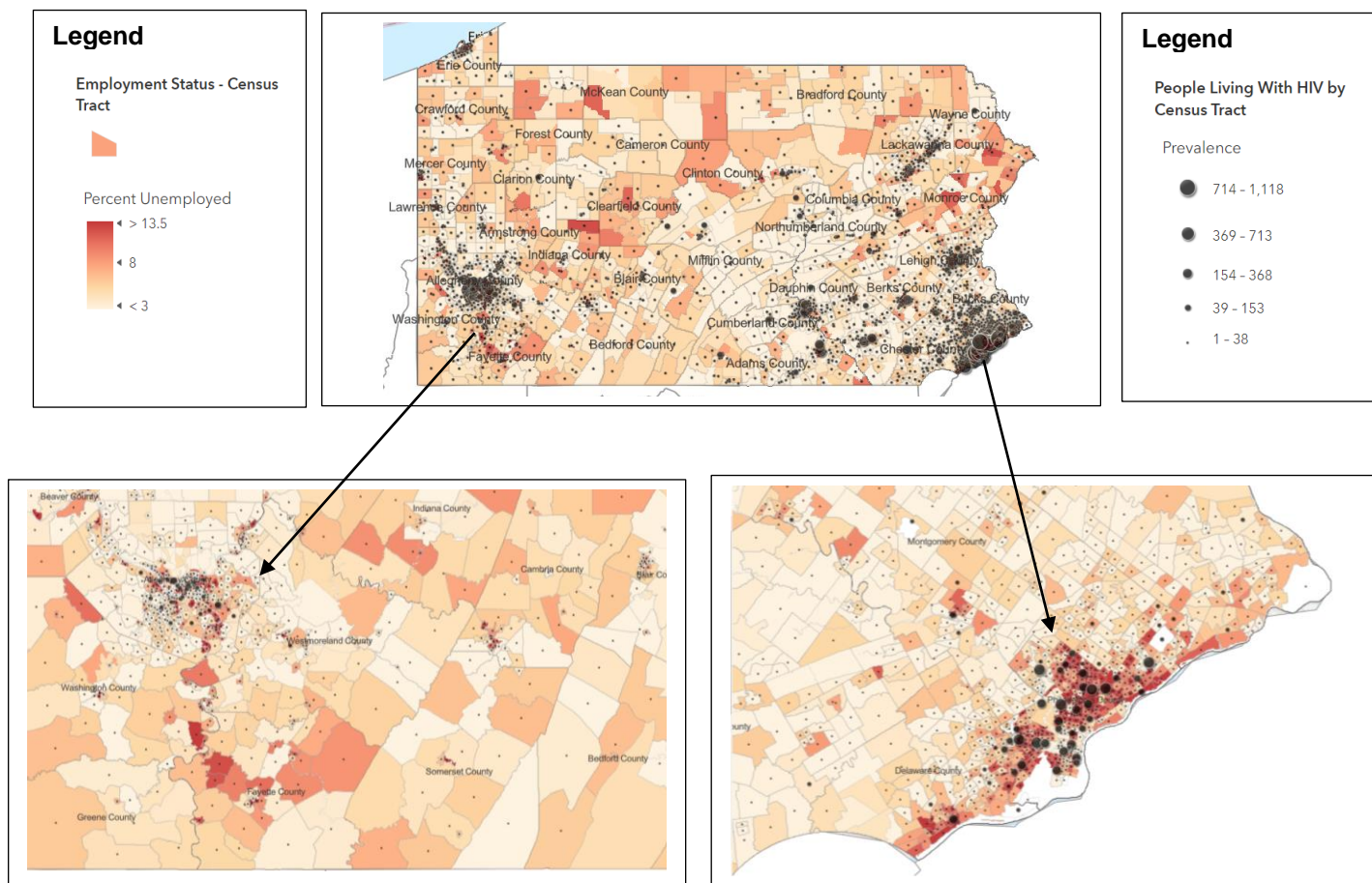
Data sources:
PA HIV surveillance data
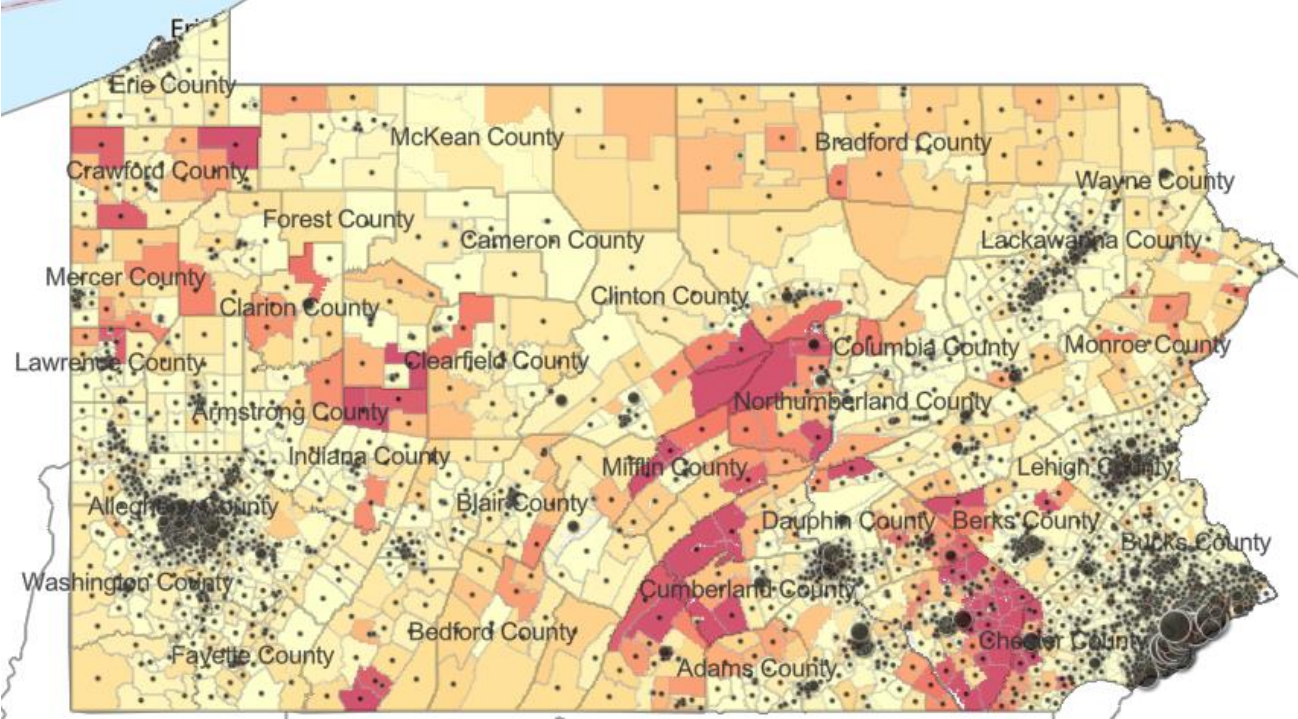U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B23020, B23025.
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Employment_Status_Boundaries/FeatureServer

PLWH and Educational Attainment

Figures 26 and 27 focus on the educational attainment and PLWH in the census tract. The percent of population 25 years and over whose highest education completed is less than high school was presented in gradients ranging from less than 3% to greater than 22%. PLWH Data was classified into 5 classes using natural breaks. There are multiple census tracts in the southcentral region with high population with less than high school education. Census tracts around the major urban cities also have high percentage population with less than high school education. PLWH are also clustered around these census tracts in the urban centers. Here is the link to the interactive map which shows the relationship between employment status and PLWH in PA.

Link: https://arcg.is/KG4yj

Figure 26: PLWH and Educational Attainment by Census Tract, PA, 2020
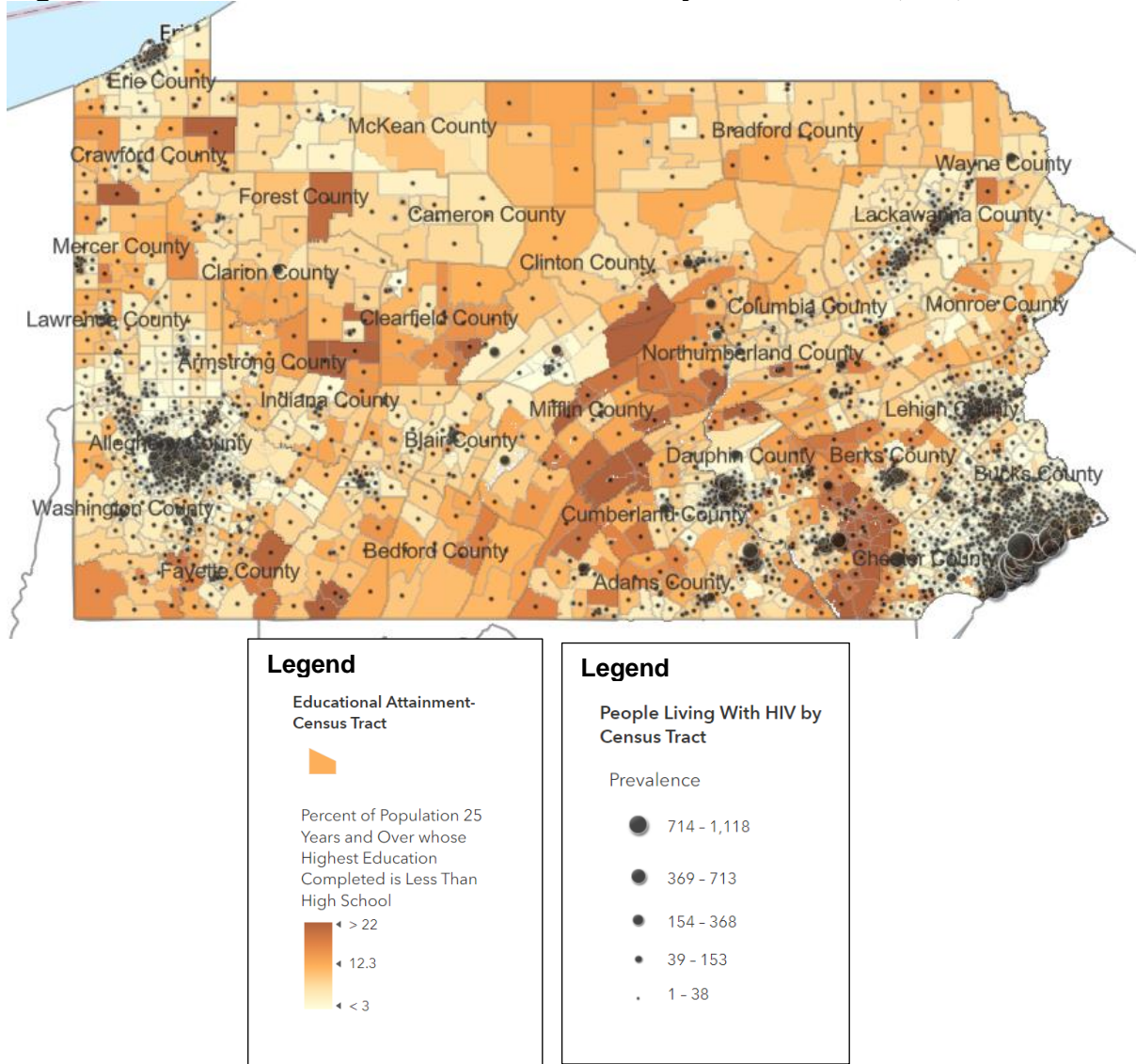
Legend

Educational Attainment-Census Tract

Percent of Population 25 Years and Over whose Highest Education Completed is Less Than High School

◄ > 22
◄ 12.3
◄ < 3

Legend

People Living With HIV by Census Tract

Prevalence

● 714 – 1,118
● 369 – 713
● 154 – 368
· 39 – 153
. 1 – 38

Data sources:
PA HIV surveillance data
U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B15002
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Educational_Attainment_Boundaries/FeatureServer

Figure 27: PLWH and Educational Attainment by Census Tract Around Philadelphia and Allegheny Counties, PA, 2020
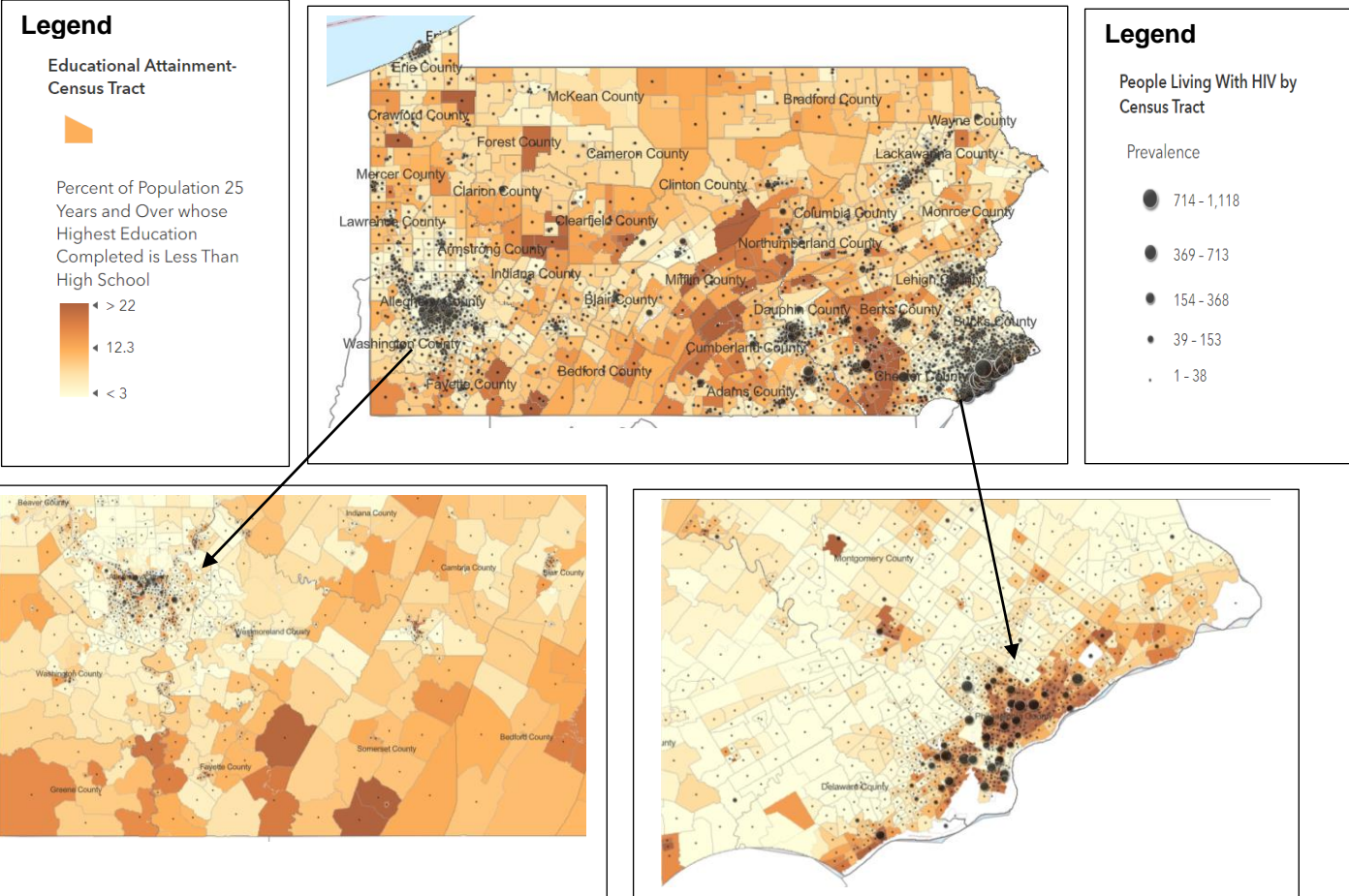
Data sources:
PA HIV surveillance data
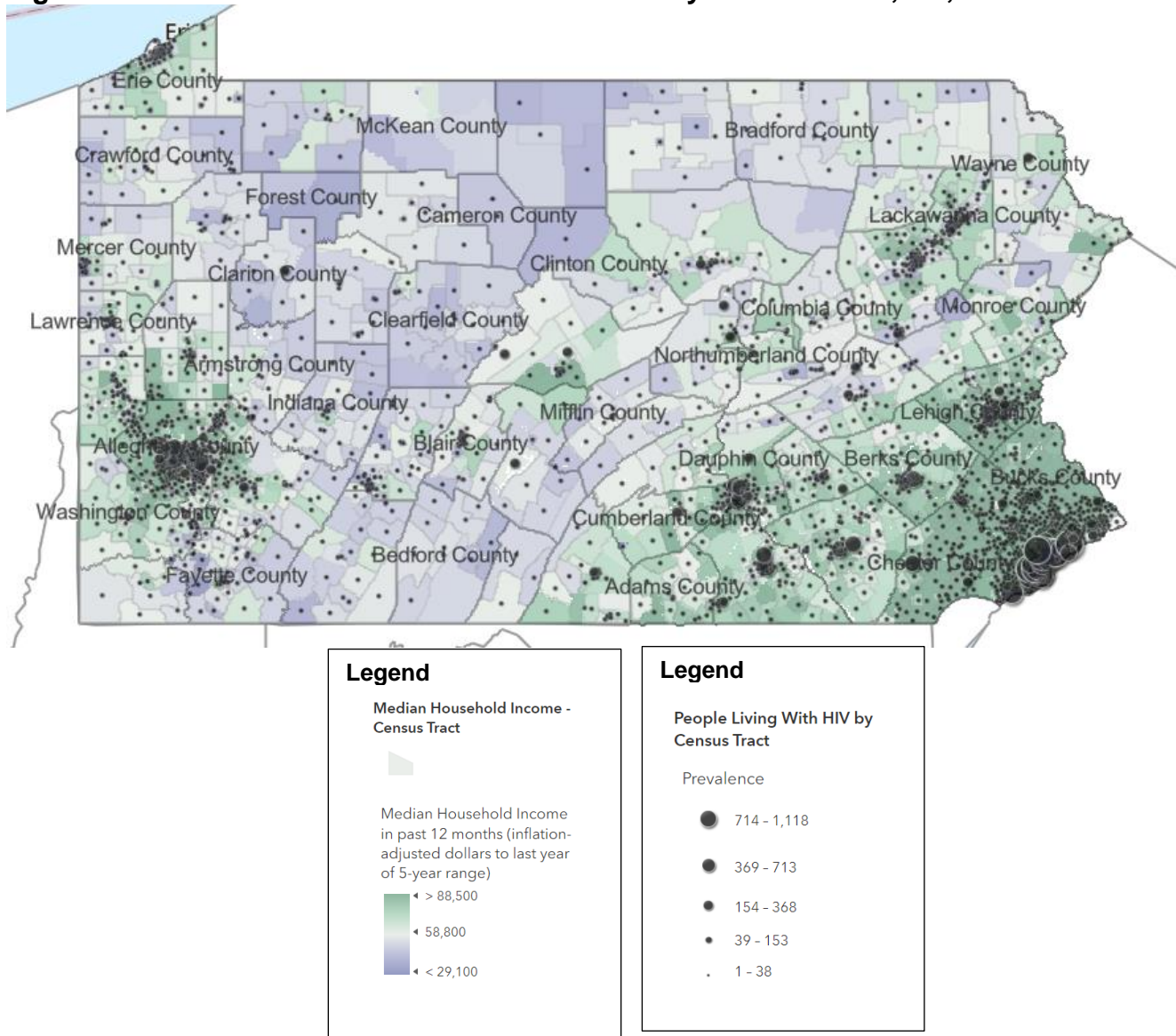U.S. Census Bureau's American Community Survey (ACS) 2015-2019 5-year estimates, Table(s) B15002
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Educational_Attainment_Boundaries/FeatureServer

PLWH in Rural and Urban Counties

Figures 28 and 29 focus on the location PLWH in the census tract in rural and urban counties in PA. PLWH Data was classified into 5 classes using natural breaks. PLWH are clustered around these census tracts in the urban centers. However, there are several PLWH in rural counties, which are often underserved, and efforts should be made to ensure that these individuals have access to care and support services. Below is the link to the interactive map which shows the geographical location of PLWH in PA.

Link: https://arcg.is/1Kfu5G0

Figure 28: PLWH by Census Tract in Rural and Urban Counties, PA,2020
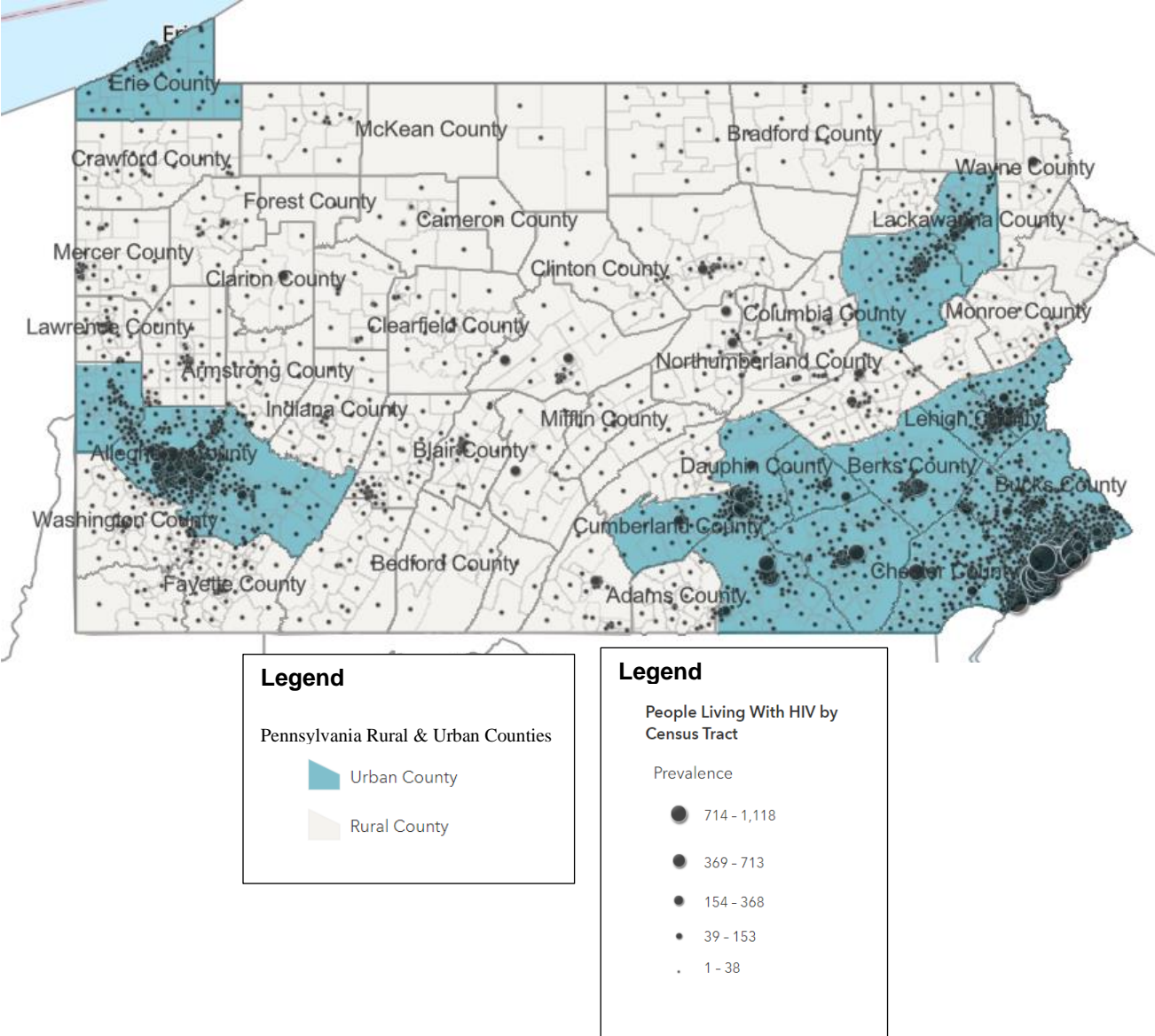
Legend

Pennsylvania Rural & Urban Counties

Urban County

Rural County

Legend

People Living With HIV by Census Tract

Prevalence

● 714 – 1,118

● 369 – 713

● 154 – 368

· 39 – 153

· 1 – 38

Data sources:
PA HIV surveillance data
Esri, U.S. Census. https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/USA_Tracts/FeatureServer

Figure 29: PLWH by Census Tract in Rural and Urban Counties With Focus on Locations Around Philadelphia and Allegheny Counties, PA, 2020
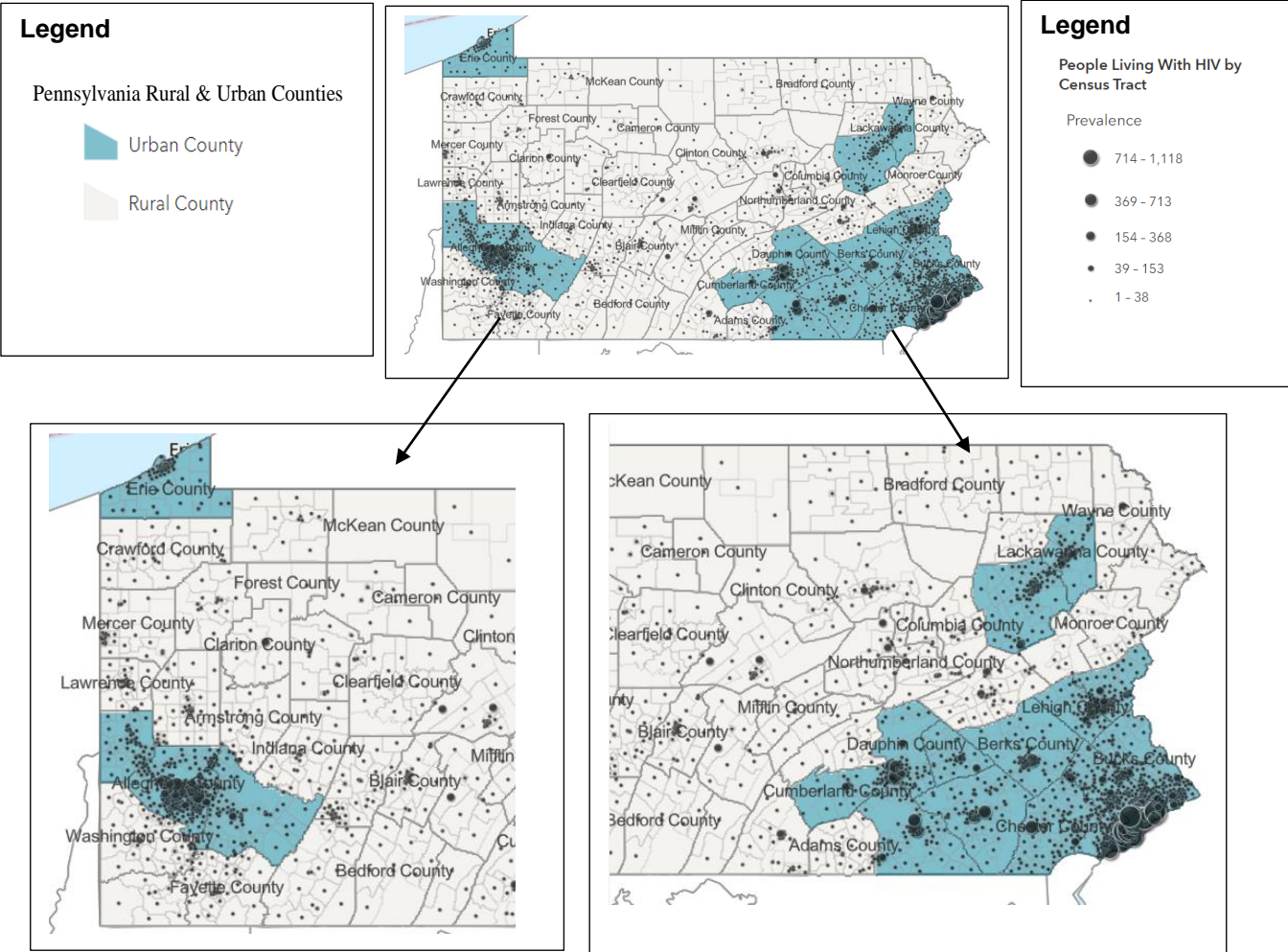
Data sources:
PA HIV surveillance data
Esri, U.S. Census. https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/USA_Tracts/FeatureServer

PLWH and the Location of Ryan White Part B Subrecipients Providers
Figures 30 and 31 focus on PLWH and proximity to Ryan White Part B Subrecipients Providers. PLWH Data was classified into 5 classes using natural breaks. PLWH are clustered around census tracts in the urban centers with close proximity to services providers. However, there are several PLWH in rural counties, which are often underserved. However, the PADOH is increasing its efforts in ensuring that individuals residing in these rural counties have access to care and support services. Below is the link to the interactive map which shows the geographical location of Ryan White Part B Subrecipients Providers in PA.
Link: https://arcg.is/1iSbr4

Figure 30: PLWH by Census Tract and Location of Ryan White Part B Subrecipients Providers, PA, 2020
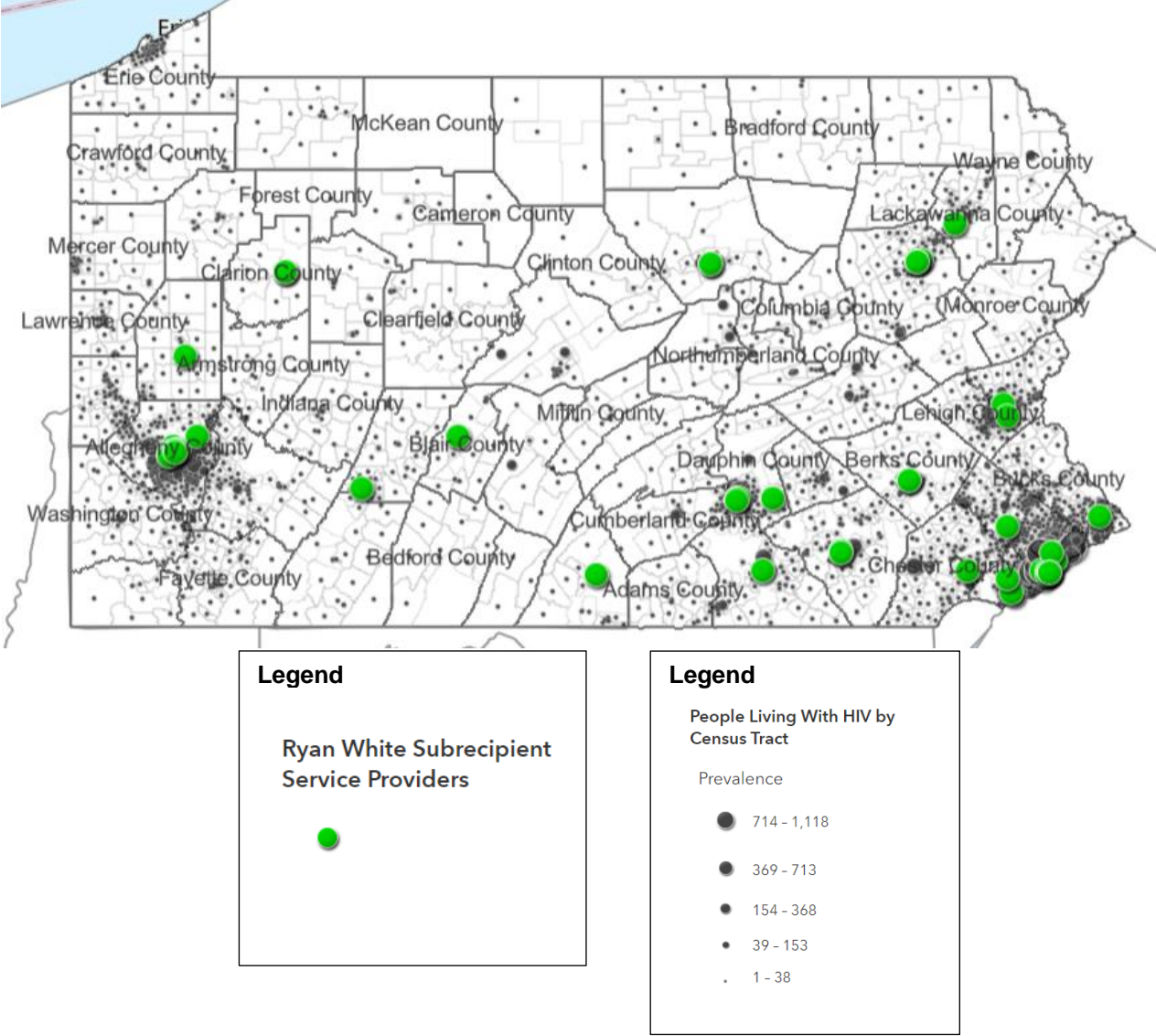
Data sources:
PA HIV surveillance data
PA Division of HIV disease, Ryan White Part B Care Program

Figure 31: PLWH by Census Tract and Location of Ryan White Part B Subrecipients Providers Around Philadelphia and Allegheny Counties, PA, 2020
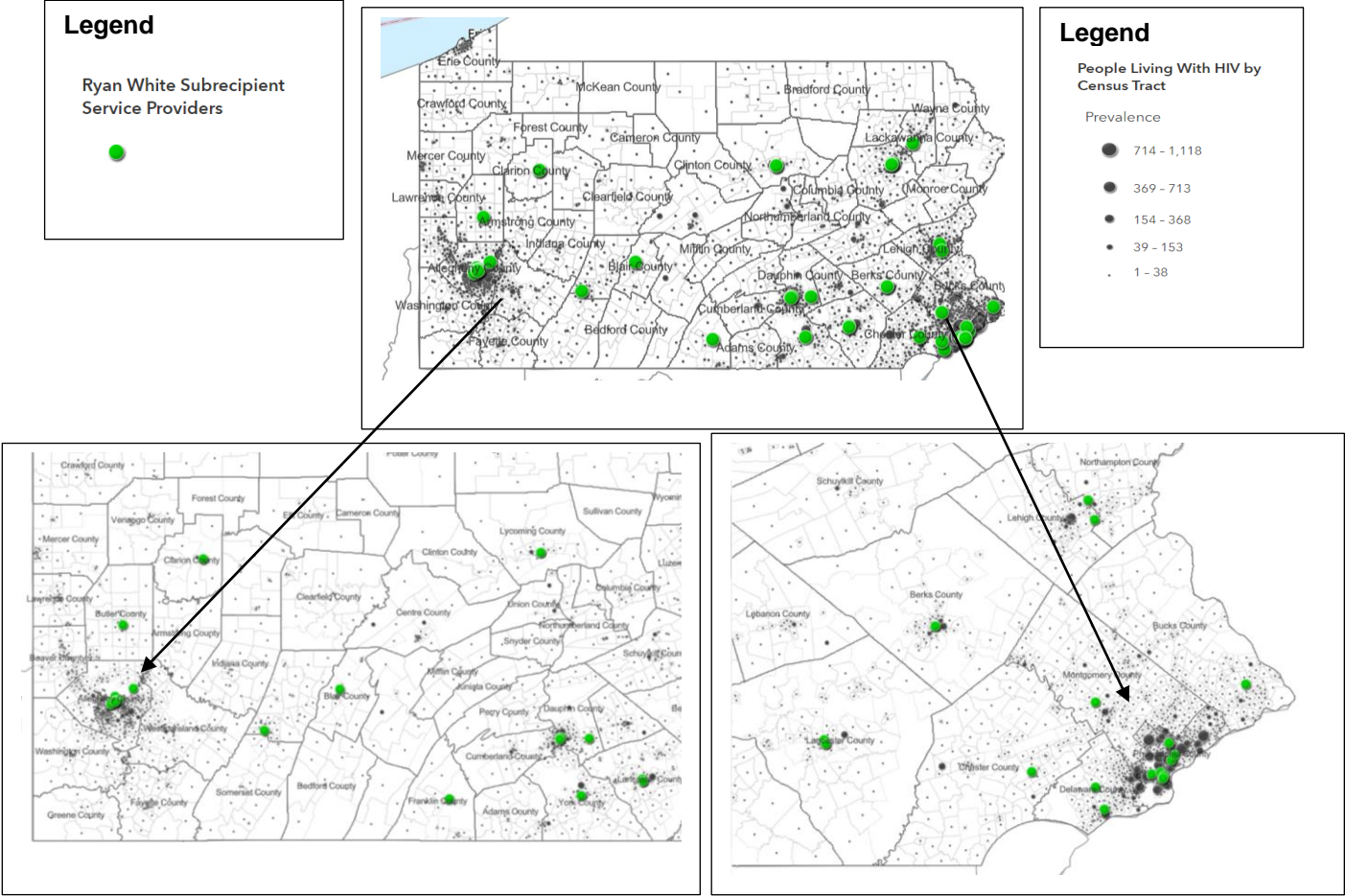
Legend

Ryan White Subrecipient Service Providers

Legend

People Living With HIV by Census Tract

Prevalence

714 – 1,118
369 – 713
154 – 368
39 – 153
1 – 38

Data sources:
PA HIV surveillance data
PA Division of HIV disease, Ryan White Part B Care Program

Section 6: HIV Prevention in PA

The HIV Prevention program activities utilizes state funds as well as Centers for Disease Control and Prevention (CDC) funds to implement a comprehensive HIV prevention program to reduce morbidity, mortality, and related health disparities in accordance with the National HIV/AIDS Strategy (NHAS) and the Ending the HIV Epidemic Initiative. The program implements multiple strategies and activities through guidance from the CDC. These include identification of persons with HIV and uninfected persons at risk for HIV, HIV testing, HIV Self-Testing (HST), partner services (PS),PA Expanded HIV Testing Initiative (PEHTI), linkage to care, and Pre-Exposure Prophylaxis (PrEP). The HIV prevention program provides rapid HIV test kits and/or laboratory support to agencies and organizations across the commonwealth (excluding Philadelphia which is independently funded by the CDC) to promote testing in both clinical (health care) and non-clinical (community based) settings. Annually, the commonwealth supports approximately 70,000 HIV tests in STD clinics, local health departments, community-based organizations, and outreach testing sites (such as bars, campgrounds, street outreach). In the year 2020, the COVID-19 pandemic had a negative impact on the number of tests done in these settings.

PEHTI is a collaboration with Pennsylvania State University. Starting in 2012, this initiative was designed to increase routine HIV testing in health care settings such as hospitals, emergency departments, physician offices, and correctional facilities. PEHTI has expanded its initiative to focus on integrating hepatitis and sexually transmitted disease (STD) testing along with HIV testing in areas with high prevalence and for individuals at highest risk for Hepatitis C virus (HCV), STD and HIV transmission. PEHTI has also worked with other organizations to develop webinars for Routine HIV Testing in healthcare settings and third-party billing.

The HIV Self-Testing (HST) program was started in January 2021 and is a collaboration between the PADOH, PEHTI, and the HIV Prevention and Care Project (HPCP), University of Pittsburgh). The goal of the HST program is to ensure testing is available for anyone who wishes to be tested. The program helps to remove barriers by allowing individuals to conduct testing in the privacy of their own homes. Individuals residing in PA (excluding Philadelphia County*) can order an HIV home test kit through www.getmyHIVtest.com.

Partner services (PS) is a collection of services provided to individuals who test positive for HIV or STDs. Partner services include:
- Partner elicitation and notification
- Linkage to medical care
- Treatment for STDs
- Referral to appropriate support services

Partner services are an integral function of public health to identify, notify, and test all contacts of individuals who are known to be newly infected. Treating STDs and linking people living with HIV to medical care is essential to stopping the spread of disease.

PrEP is a prescription medication that can help reduce the risk of getting HIV. Historically, PrEP was only considered for individuals at high risk for HIV. Currently, CDC recommends that all sexually active adults and adolescents should be informed of and offered PrEP. PrEP can be prescribed in pill form to be taken orally every day or can be prescribed in injectable form to be administered by a healthcare provider every two months. Other safe sex practices should be used in conjunction with PrEP to prevent other STIs. Routine HIV and STI testing is necessary to be on PrEP.

HIV Testing in PA, 2020
A total of 45,634 tests were conducted in the year 2020 in healthcare, non-healthcare, and mobile settings. In health care settings, a total of 42,131 (92.3%) tests were conducted and in non-healthcare and mobile setting, a total of 3,503 (7.7%) tests were conducted. In these settings, a total of 415 tests were HIV-positive. These HIV-positive tests included both newly and previously diagnosed HIV disease. Among the 415 positive test results, 119 (28.7%) were newly identified, 272(65.5%) were previously identified and 24 (5.8%) were of unknown status. By race/ethnicity and transmission mode in healthcare settings, 25.6% (10,794/42,131) of tests conducted were among Blacks/African Americans, 46.3% (19,522/42,131) were among white individuals and 12% (5,136/42,131) identified as Hispanics/Latinos. By transmission category in health care settings, 64.7% (27,262/42,131) of the tests had unknown transmission category. Tables 29 and 30 provide detailed information of tests done in the two settings by race/ethnicity, transmission mode and HIV testing outcomes. In the non-healthcare and mobile settings 52.6% (1,843/3,503) of tests were among whites, 17.5% (614/3,503) were among Blacks/African Americans and 13.9% (488/3,503) were Hispanics/Latinos. By transmission category, 29.2% (1,023/3,503) were MSM, 30.6% (1,072/3,503), were through IDU, 1.8% (63/3,503) were MSM& IDU and 29.5% (1,033/3,503) identified as heterosexuals.

Table 29: Distribution of HIV Tests in Healthcare Settings by Transmission Category and Race/Ethnicity in PA, 2020

Race/ethnicity	Transmission Category									
	MSM & IDU	MSM	Transgender PWID	Trans gender	PWID	Heterosexual Males	Heterosexual Females	Unknown	Total	Percent
Hispanic/Latino[++]	11	577	1	31	71	649	656	3,140	5,136	12.2
AI/AN[+]	0	16	0	1	0	13	18	39	87	0.2
Asian	0	118	0	6	2	53	66	304	549	1.3
Black/African American	28	560	2	61	78	1,675	1,376	7,014	10,794	25.6
NHPI[+++]	0	9	0	1	0	16	19	69	114	0.3
White	100	2,766	10	203	857	1,492	2,432	11,662	19,522	46.3
Multiple races	0	1	0	0	0	8	12	27	48	0.1
Unknown Race	10	252	1	49	105	233	224	5,007	5,881	14
Total	149	4,299	14	352	1,113	4,139	4,803	27,262	42,131	100
Percent	0.4	10.2	0	0.8	2.6	9.8	11.4	64.7	100	

Data source: National HIV Prevention Program Monitoring and Evaluation (NHM&E) data reporting system, EvaluationWeb
[+]AI/AN=American Indian/Alaska Native   [++] Hispanic/Latino persons can be of any race.   [+++]NHPI=Native Hawaiian and Other Pacific Islander

Table 30: Distribution of HIV Tests in Non-Health Care Settings and Mobile Units by Transmission Category and Race/Ethnicity in PA, 2020

Race/ethnicity	Transmission Category									
	MSM& IDU	MSM	Transgender PWID	Transgender Persons	PWID	Heterosexual Males	Heterosexual Females	Unknown	Total	Percent
Hispanic/Latino[++]	9	125	0	4	59	128	112	51	488	13.9
AI/AN[+]	1	2	0	0	1	2	2	0	8	0.2
Asian	0	51	0	1	1	2	4	0	59	1.7
Black/African American	9	173	0	3	66	121	120	122	614	17.5
NHPI[+++]	0	2	0	0	0	0	0	0	2	0.1
White	31	652	3	15	544	245	256	97	1,843	52.6
Multiple races	1	12	0	1	3	5	11	1	34	1
Unknown	12	6	0	0	398	17	8	14	455	13
Total	63	1,023	3	24	1,072	520	513	285	3,503	100
Percent	1.8	29.2	0.1	0.7	30.6	14.8	14.6	8.1	100	

Data source: National HIV Prevention Program Monitoring and Evaluation (NHM&E) data reporting system, EvaluationWeb
[+]AI/AN=American Indian/Alaska Native [++] Hispanic/Latino persons can be of any race. [+++]NHPI=Native Hawaiian and Other Pacific Islander
- Dash indicates cell size of ≤5.

HIV Positive Tests and Testing Outcomes in All Settings in PA

A total of 415 tests were HIV positive out of the 45,634 valid tests which translates to 0.9% positivity. A total of 182 (43.95) individuals were linked to care within 30 days and 273 (65.8%) were linked at some point in time. A total of 119 (28.7%) individuals were newly diagnosed with HIV through testing efforts at these CDC funded sites. Among these newly diagnosed individuals, a total of 101 (84.9%) were linked to care within 30 days, 81 (68.1%) were interviewed for partner services within 30 days, and 13 (10.9%) were provided navigation services for linkage to HIV medical care (Table 31). Tables 32 and 33 provide detailed breakdown of newly identified HIV-positive persons in both health care and non-health care settings. Out of the 119 newly identified HIV-positive persons, 104 were identified in health care settings and 15 in non-health care settings.

Table 31: HIV Positive Tests and Testing Outcomes in All Settings[1] in PA, 2020

Selected characteristics	Number	Percent
Valid Tests	45,634	
Total HIV-positive Tests[2]		
Number of HIV-positive Tests	415	
Positivity (Overall)	415	0.9
Linked to Care within 30 Days	182	43.9
Linked to Care in Any Timeframe	273	65.8
Newly Diagnosed HIV [1]		
Number of Newly identified HIV-positive persons	119	
Positivity (Newly identified HIV-positive persons)	119	0.3
Provided Test Result	119	100.0
Linked to Care within 30 Days	101	84.9
Interviewed for partner service (PS) within 30 Days	81	68.1
Interviewed for PS in Any Timeframe	102	85.7
Provided/Referred to Essential Support Services among Newly Diagnosed HIV		
Navigation services for linkage to HIV medical care	13	10.9
Linkage services to HIV medical care	13	10.9
Medication adherence support	12	10.1
Health benefits navigation and enrollment[3]	11	9.2
Evidence-based risk reduction interventions	118	99.2
Behavioral health services[4]	9	7.6
Social Services[5]	6	5.0
Previously Diagnosed HIV		
Number of previously identified HIV-positive persons	272	
Positivity (Previously identified HIV-positive persons)	272	0.6
In Care at Time of Test	144	52.9
Not in Care at Time of Test	128	47.1
Linked to Care within 30 Days	62	22.8
HIV-positive Tests, Prior Status Unknown		
Number of status unknown positives	24	

Data source: National HIV Prevention Program Monitoring and Evaluation (NHM&E) data reporting system, EvaluationWeb
[1] Includes in Health Care, Non-health Care Settings, Mobile Unit Settings, and Setting unknown
[2] Includes newly diagnosed and previously diagnosed HIV and prior status unknown HIV
[3] May include, but are not limited to outreach and education on available health benefit options (e.g., private insurance, health maintenance organizations, Medicaid, Medicare, medication assistance programs), eligibility assessment, and assistance with enrollment
[4] Behavioral health services include mental health treatment and substance use treatment
[5] Social Services include housing services, transportation services, domestic violence intervention, and employment services

Table 32: HIV Tests and HIV-positive Tests in Health Care Settings, by Age, Gender, Race/Ethnicity, and Population Group in PA, 2020

Selected characteristics	Total Number of Valid HIV Tests	Newly Diagnosed HIV disease		Previously Diagnosed HIV disease		Prior status unknown HIV	
	No.	No.	%	No.	%	No.	%
Age group (years)							
<13	20	0	0	0	0	0	0
13-19	2,617	2	0.1	1	0	0	0
20-29	19,129	56	0.3	56	0.3	8	0.0
30-65	19,896	45	0.2	202	1.0	7	0.0
≥ 66	397	1	0.3	9	2.3	0	0
Unknown	72	0	0	0	0	0	0
Gender							
Male	25,914	91	0.4	221	0.9	15	0.1
Female	15,607	12	0.1	39	0.2	0	0.0
Transgender	366	1	0.3	5	1.4	0	0
Unknown	244	0	0	3	1.2	0	0
Race/Ethnicity							
Hispanic or Latino	5,136	20	0.4	34	0.7	0	0
AI/AN	87	2	2.3	0	0.0	0	0
Asian	549	2	0.4	7	1.3	0	0
Black/African American	10,794	39	0.4	135	1.3	11	0.1
NHPI	114	0	0	0	0	1	0.9
White	19,522	41	0.2	92	0.5	2	0
Multiple races	48	0	0.0	0	0.0	1	2.1
Unknown	5,881	0	0.0	0	0.0	0	0
HIV Population Group							
MSM/IDU	149	7	4.7	26	17.4	1	0.7
MSM	4,299	67	1.6	130	3.0	9	0.2
Transgender/IDU	14	0	0.0	0	0.0	0	0
Transgender persons	352	1	0.3	5	1.4	0	0
PWID	1,113	3	0.3	28	2.5	1	0.1
Heterosexual males	4,139	13	0.3	29	0.7	3	0.1
Heterosexual females	4,803	10	0.2	28	0.6	0	0
Unknown	27,262	3	0	22	0.1	1	0
Total	**42,131**	**104**	**0.2**	**268**	**0.6**	**15**	**0.0**

Data source: National HIV Prevention Program Monitoring and Evaluation (NHM&E) data reporting system, EvaluationWeb
+AI/AN=American Indian/Alaska Native.
++ Hispanic/Latino persons can be of any race.
+++NHPI=Native Hawaiian and Other Pacific Islander.

Table 33: HIV Tests and HIV-positive Tests in Non-Health Care Settings, by Age, Gender, Race/Ethnicity, and Population Group in PA, 2020

Selected characteristics	Total Number of Valid HIV Tests No.	Newly Diagnosed HIV disease No.	%	Previously Diagnosed HIV disease No.	%	Prior status unknown HIV No.	%
Age Group (years)							
<13	1	0	0	0	0	0	0
13-19	104	0	0	0	0	0	0
20-29	1,309	8	0.6	1	0.1	4	0.3
30-65	2,025	7	0.3	3	0.1	5	0.2
≥ 66	44	0	0	0	0	0	0
Unknown	20	0	0	0	0	0	0
Gender							
Male	2,391	12	0.5	3	0.1	8	0.3
Female	1,006	3	0.3	1	0.1	1	0.1
Transgender	26	0	0	0	0	0	0
Unknown	80	0	0	0	0	0	0
Race/Ethnicity							
Hispanic or Latino[++]	488	2	0.4	1	0.2	3	0.6
AI/AN[+]	8	1	12.5	0	0	0	0
Asian	59	0	0	0	0	0	0
Black/African American	614	7	1.1	2	0.3	3	0.5
NHPI[+++]	2	0	0	0	0	0	0
White	1,843	5	0.3	1	0.1	3	0.2
Multiple races	34	0	0	0	0	0	0
Unknown	455	0	0	0	0	0	0
HIV Population Group							
MSM/IDU	63	2	3.2	1	1.6	1	1.6
MSM	1,023	8	0.8	0	0	6	0.6
Transgender/IDU	3	0	0	0	0	0	0
Transgender persons	24	0	0	0	0	0	0
PWID	1,072	0	0	1	0.1	0	0
Heterosexual males	520	2	0.4	0	0	1	0.2
Heterosexual females	513	3	0.6	0	0	1	0.2
Unknown	285	0	0	2	0.7	0	0
Total	3,503	15	0.4	4	0.1	9	0.3

Data source: National HIV Prevention Program Monitoring and Evaluation (NHM&E) data reporting system, EvaluationWeb
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
[+++]NHPI=Native Hawaiian and Other Pacific Islander.

Pre-Exposure Prophylaxis (PrEP) Activities in PA

Pre-Exposure Prophylaxis is a medication taken by individuals who are HIV negative, that is, those that have not acquired HIV, to prevent HIV disease. PrEP, if taken as prescribed has been shown to reduce the risk of acquiring HIV through sex and injection drug use by about 99% and 75%, respectively. PrEP is one of the HIV prevention tools used in PA. Figure 32 summarizes some of the approaches used in PA to ensure that individuals who are eligible for PrEP are identified and referred to PrEP providers.

Figure 32: Pre-Exposure Prophylaxis (PrEP) Activities in PA

PrEP in the Participating Provider Agreements (PPAs)
- Allows for uninsured and underinsured individuals to access PrEP services
- The commonwealth does not provide funding for PrEP medication
- Department reimburses for provider visit and provides laboratory services
- No cost to the provider or client
- Provider is responsible to navigate client through patient assistance programs or insurance marketplace

STD Data to PrEP
- Clients identified as high risk for HIV acquisition based on repeated STD infections through PA-NEDSS
- DIS and field staff meet with these individuals for treatment confirmation and provide referral to local PrEP providers when appropriate

Tele-PrEP
- The option to provide PrEP services remotely is increasingly more popular and common
- The commonwealth offers reimbursement through our PPAs for this service starting in 2020
- PPA providers will have the option to do follow-up PrEP visits after the client is seen in person for the initial visit

PrEP Partnership
- HIV Prevention is collaborating with the Department of Drug and Alcohol Programs to increase knowledge of PrEP among PWID and others with substance abuse disorder

Data source: Division of HIV Diseases, HIV prevention Program

Indicators of Risk for HIV Disease in PA

The risk factors for HIV disease are those determinants that increase the likelihood of exposure to HIV. The PA Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS) are both proxies reviewed to determine these risk indicators. This section of the epidemiologic overview will also provide information on the different risks by race/ethnicity, age, and transmission mode in individuals newly diagnosed with HIV disease.

The BRFSS is a telephone survey that collects US residents' health-related risk behaviors, chronic health conditions, and use of preventive services. In this report, a summary of self-reporting on HIV testing at year-end 2019 will be presented. Please note that the YRBS is conducted in the spring of odd-numbered years, and the results are released in the summer of the following year. For this overview, the most recent available data is the 2019 YRBS.

The YRBS is a national school-based survey conducted by CDC, states, territorial, tribal, and local governments. It obtains data from high school students from the ninth grade to the 12th grade. It monitors six types of health-risk behaviors, including behaviors that contribute to unintentional injuries and violence; sexual behaviors related to unintended pregnancy and sexually transmitted infection, including HIV; alcohol and other drug use; tobacco use; unhealthy dietary behaviors; and inadequate physical activity. Three of these indicators will be examined in this profile: behaviors that contribute to unintentional injuries and violence; sexual behaviors related to unintended pregnancy; and sexually transmitted infection, including HIV; alcohol and other drug use.[34]

The YRBS focuses on high school students in the ninth to 12th grades and examines those factors that might predispose this group to HIV. Using 2019-2020 school enrollment reports from the PA Department of Education, 540,854 students were enrolled in ninth to 12th grades statewide and educated by public Local Education Agencies.[35] Based on the 2019 YBRS (most recent data), 89.3% of high school students in PA were never tested for HIV despite 30.4% being currently sexually active.[36] Out of the 30.4% currently sexually active, 48.6% did not use a condom during the last sexual intercourse, and 15.4% also used drugs or drank alcohol before last sexual intercourse.[36] Drug and alcohol use are significant risk factors for HIV. In addition, their use may lead to increased participation in risky sexual behaviors that might expose an individual to HIV and other sexually transmitted diseases.[37] The low level of HIV testing among this age group combined with a high level of risk-taking behavior is concerning. Table 34 provides more information on unintentional injuries and violence, alcohol and other drug use, and sexual behaviors among adolescents.

Table 34: Selected Indicators of Risk for HIV Disease Among Adolescents in 9th to 12th grades in PA, 2019

Selected High School Youth Risk Behavior Survey, 2019	Grade				
	Total	9th	10th	11th	12th
Unintentional Injuries and Violence	%	%	%	%	%
Were ever physically forced to have sexual intercourse	8.5	7.0	8.3	7.9	10.5
Experienced sexual violence by anyone (including kissing, touching, or being physically forced to have sexual intercourse when they did not want to, one or more times during the 12 months before the survey)	10.3	10.6	10.3	10.5	9.8
Experienced sexual dating violence (being forced to do sexual things (counting such things as kissing, touching, or being physically forced to have sexual intercourse) they did not want to do by someone they were dating or going out with, one or more times during the 12 months before the survey, among students who dated or went out with someone during the 12 months before the survey)	6.1	8.1	6.2	5.3	4.9
Alcohol and Other Drug Use					
Had their first drink of alcohol before age 13 years (other than a few sips)	12.2	14.1	15.3	11.5	7.7
Currently drank alcohol (at least one drink of alcohol, on at least 1 day during the 30 days before the survey)	25.6	16.4	21.5	29.6	35.4
Currently were binge drinking (four or more drinks of alcohol in a row for female students or five or more drinks of alcohol in a row for male students, that is, within a couple of hours, on at least 1 day during the 30 days before the survey)	11.2	7.8	8.3	13.7	15.5
Ever took prescription pain medicine without a doctor's prescription or differently than how a doctor told them to use it (counting drugs such as codeine, Vicodin, Oxycontin, Hydrocodone, and Percocet, one or more times during their life)	11.2	10.5	10.0	11.0	13.1
Ever injected any illegal drug, one or more times in their life	1.4	1.6	2.1	1.5	0.5
Sexual Behaviors					
Ever had sexual intercourse	40.6	19.2	38.0	46.8	58.5
Had sexual intercourse for the first time before age 13 years	2.6	2.4	3.4	3.6	0.7
Had sexual intercourse with four or more persons (during their life)	8.8	3.5	7.0	8.8	15.2
Were currently sexually active (had sexual intercourse with at least one person during the 3 months before the survey)	30.4	12.5	27.5	37.0	45.2
Did not use a condom during last sexual intercourse (among students who were currently sexually active)	48.6	N/A	39.5	48.5	56.2
Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active)	15.4	N/A	14.0	12.3	17.3
Were never tested for HIV (not counting tests done if they donated blood)	89.3	93.5	89.4	90.0	84.1
Were not tested for an STD, other than HIV (such as chlamydia or gonorrhea, during the 12 months before the survey)	89.2	94.3	90.5	89.4	82.5

Data source: http://www.stat.yale.edu/Courses/1997-98/101/confint.htm
Centers for Disease Control and Prevention. 2019 Youth Risk Behavior Survey. Youth Online: High School YRBS - Pennsylvania 2019 Results | DASH | CDC. Accessed on November 15, 2021

Using the BRFSS data, an assessment of the level of HIV testing can be made. It should be noted that, in the HIV continuum of care, testing for HIV is an important component in estimating the number of PLWH who have been diagnosed and are aware of their status. Table 35 describes the proportion of PA residents aged 18 to 64 years who reported they have ever been tested for HIV. While the overall testing rate was 46%, more females (50%) reported having ever been tested for HIV than males (42%). Likewise, 59% of individuals aged 30 to 44 years reported having ever been tested for HIV compared to 38% among those aged 18 to 29 years or 41% among those aged 45 to 64 years. By race/ethnicity, 75% of Blacks/African Americans reported having ever been tested for HIV compared to 60% among Hispanics/Latinos or 40% among white individuals (Table 35).

Table 35: The Percentage of Adults Aged 18-64 Years, Ever Tested for HIV in PA, 2019

Sociodemographic characteristics	Percent	CI*
All	**46**	**44-48**
Sex		
Female	50	47-53
Male	42	39-45
Sexual orientation		
Lesbian, gay or bisexual	63	53-72
Straight	41	39-43
Age group		
18-29	38	34-43
30-44	59	55-63
45-64	41	38-43
Educational status		
Less than high school	45	36-53
High school	45	41-48
Some college	46	42-50
College degree	47	44-50
Income		
Less than $15,000	58	50-65
$15,000-$24,999	55	49-61
$25,000-$49,999	47	42-52
$50,000-$74,999	45	39-50
$75,000+	44	41-47
Race/ethnicity		
White	40	38-42
Black/African American	75	70-80
Hispanic/Latino	60	51-67

* Denotes 95% Confidence Interval. A confidence interval gives an estimated range of values which is likely to include an unknown population parameter, the estimated range being calculated from a given set of sample data. Source: http://www.stat.yale.edu/Courses/1997-98/101/confint.htm
Data source: PA Behavioral Risk Factor Surveillance System, 2019. https://www.phaim1.health.PAgov/EDD/WebForms/BRFSSstate.aspx. Accessed November 15, 2021

Section 7: HIV care continuum in PA

HIV care continuum
According to HIV.gov (HIV Care Continuum | HIV.gov), "the HIV care continuum is a public health model that outlines the steps or stages that people with HIV go through from diagnosis to achieving and maintaining viral suppression".

As per CDC's guidance, there are two approaches to monitor the HIV care continuum: the prevalence-based and diagnosed-based. The prevalence-based HIV care continuum describes the number of people who are at each step of the continuum as a percentage of the total number of people with HIV (known as HIV prevalence). Prevalence includes both people whose HIV has been diagnosed and those who have HIV but don't know it. The diagnosis-based HIV care continuum depicts each step as a percentage of the number of people with diagnosed HIV disease. For the purposes of this profile, a diagnosed-based HIV care continuum will be utilized. The data reported in this section should be interpreted with caution because at the time of data collection, the Commonwealth of PA did not have complete reporting of all CD4 and viral load (VL) data. Prior to October 31, 2020, the PA HIV regulation required only reporting of detectable viral load (VL) tests and CD4 results that were below 200 cells/μl or 14 percent. This makes it less likely to receive CD4 and VL test results outside these limits. The excluded test results are essential for assessing HIV Care Continuum. However, on October 31, 2020, PA's disease reporting regulations were changed to mandate the reporting of all CD4 and HIV viral load laboratory results. Therefore, with this regulation change, PADOH will have the data that will inform future HIV care continuum analysis. Also, data on prescribed antiretroviral therapy (ART) is limited and would not be representative of the number of people living with HIV prescribed ART. Therefore, the data provided for the HIV care continuum demonstrates a minimum estimate of the HIV Care Continuum for people living with HIV in PA.

Steps in the HIV Care Continuum

Diagnosed: Number of persons aged ≥13 years with HIV at the end of the calendar year. Diagnosed prevalence is defined as the number of persons with HIV diagnosed through the end of 1 year and are living through the end of the next year.

Linked to Care: Percentage of persons with newly diagnosed HIV who were linked to care within one month after diagnosis as evidenced by a documented CD4 count or viral load.
• Numerator: Number of persons aged ≥13 years with newly diagnosed HIV during the calendar year who were linked to care within one month of their diagnosis date as evidenced by a documented test result for a CD4 count or viral load.
• Denominator: Number of persons aged ≥13 years with newly diagnosed HIV during the calendar year.

Receipt of Care: Percentage of persons with diagnosed HIV who had at least one CD4 or viral load test during the calendar year.
• Numerator: Number of persons aged ≥13 years with diagnosed HIV who had a care visit during the calendar year, as measured by documented test results for CD4 count or viral load.
• Denominator: Number of persons aged ≥13 years with HIV diagnosed by previous year-end and alive at year-end.

Retained in Care: Percentage of persons with documentation of 2 or more CD4 or viral load tests performed at least 3 months apart during the calendar year.
• Numerator: Number of persons aged ≥13 years with diagnosed HIV who had two care visits that were at least 90 days apart during the calendar year, as measured by documented test results for CD4 count or viral load.
• Denominator: Number of persons aged ≥13 years with HIV diagnosed by previous year-end and alive at year-end.

Viral Suppression: Percentage of persons aged ≥13 years with HIV who had a viral load test result of <200 copies/mL at the most recent viral load test during the calendar year.
• Numerator: Number of persons aged ≥13 years with diagnosed HIV whose most recent viral load test in the calendar year showed that HIV viral load was suppressed.
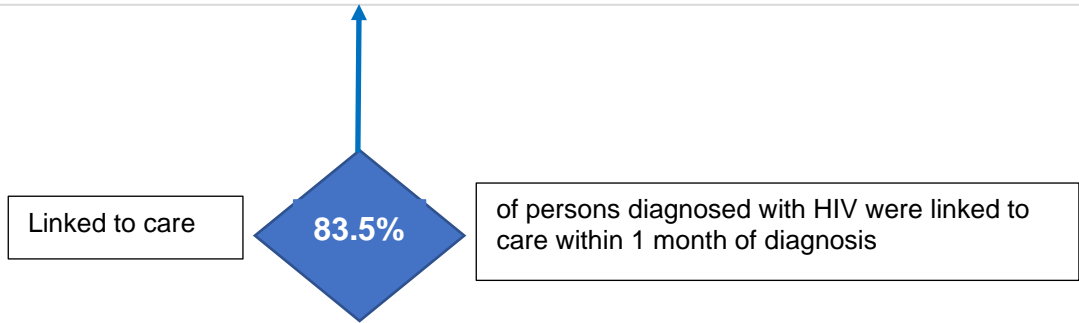Denominator: Number of persons aged ≥13 years with HIV diagnosed by previous year-end and alive at year-end.

Figure 33: Diagnosed-based HIV Care Continuum in PA, 2019
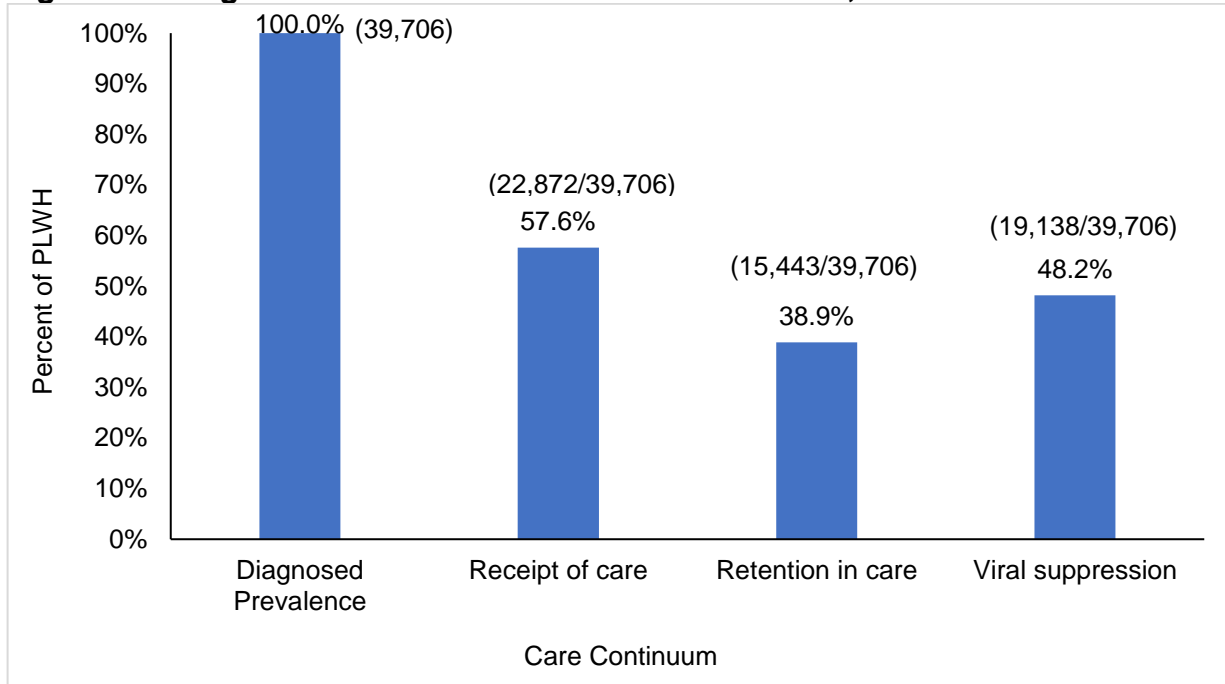
Data source: PA HIV surveillance data
Note: Estimates were derived from using CDC's monitoring HIV care outcomes using HIV surveillance data

A total of 989* individuals were newly diagnosed with HIV in 2019, and 83.5 % (826/989) were linked to care within one month after diagnosis. In the HIV care continuum, an estimated 39,706 people were diagnosed up to the year 2018 and were alive at year-end 2019 in PA. Out of these, an estimated 57.6% were in receipt of care, 38.9% were retained in care, and 48.2% were virally suppressed (Figure 33). Receipt of care is defined as at least one care visit during the calendar year. Retention in care is defined as two or more visits at least three months (≤91 days) apart in the calendar year. A viral load (VL) test result of < 200 copies/mL indicates HIV viral suppression. VL test results are from the most recent test during the specified year.

Note:* Estimates were derived from using CDC's monitoring HIV care outcomes using HIV surveillance data. Therefore, the number estimated by CDC is different from the data obtained from the frozen dataset used for analysis in this report.

The Unmet Need Framework Estimates using the Required Method

The unmet need estimate provided in this application was prepared using the required methodology and the HIV surveillance data. However, the enhanced methodology was not utilized due to our Ryan White (RW) data limitation. The RW data collection method is being reevaluated and restructured to collect only RW part B data for the assessment of RW Part B services in the State. In addition, data covering the analysis period from 2015 to 2019 is not available in a form that can be used to calculate the enhanced estimate. Therefore, using the RW part B data as part of the enhanced estimates is not feasible currently. Attached to this profile in Appendix A, is the unmet need estimate.

The Needs of PLWH in PA

Using the 2019 data, an estimated 227 (22.9%) individuals newly diagnosed with HIV disease in the year 2019 were late diagnoses. This means about 1 in 4 newly diagnosed individuals had documentation of an AIDS-defining condition or CD4 test result of less than 200 cells/mL or CD4 percentage of total lymphocytes of less than 14% at the time of diagnosis. Also, from the unmet need framework, an estimated 34% (13,209/38,874) of PLWH had an unmet need and 17.8% (4,575/25,665) of PLWH were in care but not virally suppressed.

Based on the data, the following steps will ensure that the goals of the HIV care continuum are being met:

- Reduction in barriers to access to care such as transportation, homelessness/housing, and stigma
- Expansion of HIV testing among close contacts of individuals living with HIV
- Ensuring that all persons living with HIV have access to antiretroviral therapy and are engaged in care
- Ensuring that those retained or engaged in care have access to services that will help alleviate other challenges that might otherwise become barriers to accessing care, such as transportation, housing, and food.
- Expansion of case management services

Section 8: HIV and Co-morbidities

Sexually transmitted infections/diseases (STIs/STDs)
STIs are infections that are transmitted from person to person mainly through sexual contact, including anal, vaginal, or oral sex. An individual with an STI is at increased risk of acquiring HIV because both STI and HIV have similar risk behaviors such as not using condoms or having multiple partners.[37] STIs such as syphilis and gonorrhea are closely linked with HIV. In the U.S, according to the CDC, HIV and syphilis are mostly diagnosed among MSM. [38] In this profile, the three STDs that will be included are syphilis, gonorrhea, and Chlamydia trachomatis infection (Tables 36,37 and 38).

Viral hepatitis
In this profile, data on hepatitis C virus (HCV) and HIV coinfection will be presented. HCV is a bloodborne virus transmitted through direct contact with the blood of an infected person. The main routes of transmission are injection drug use (IDU) and sexual contact. HIV/HCV coinfection is common among people who inject drugs. Among MSM, sexual transmission is the most important transmission mode. HCV is one of the primary causes of chronic liver disease and among individuals coinfected with HIV, the progress of the liver injury progresses rapidly in this population (Table 39).

Technical note: Our data tables on STIs are presented for Philadelphia County and the rest of the state counties without Philadelphia County. This is because data on STIs are collected using different systems by Philadelphia County and the rest of the Commonwealth of PA.

HIV and STD Co-occurring Infection Among People Newly Diagnosed with HIV Disease and PLWH in PA, 2019

The HIV STD co-occurring data will be presented in two parts: Philadelphia data only and the rest of PA, excluding Philadelphia. Philadelphia data were provided by the Philadelphia Department of Public Health and will be displayed as provided.

Table 36: HIV/STD Co-occurring Among People Newly Diagnosed with HIV (Excluding Philadelphia) in PA, 2019

Selected characteristics	Newly diagnosed HIV disease	HIV/STD Coinfection among newly diagnosed HIV disease in 2019		HIV and co-occurring STD		
		HIV/STD coinfection	Percent of total	Chlamydia Trachomatis infection	Gonorrhea	Syphilis
	No.	No.	%	No.	No.	No.
Total	**989***	**121**	**12.2**	**40**	**23**	**58**
Sex/gender						
Female	227	7	3.1	4	2	1
Male	751	114	15.2	36	21	57
Transgender	11	0	0	0	0	0
Age at year-end 2019 (years)						
13-24	216	29	13.4	16	8	5
25-34	363	61	16.8	17	10	34
35-44	172	19	11.0	2	4	13
45-54	129	8	6.2	0	0	4
≥55	109	4	3.7	2	0	2
Race/ethnicity						
AI/AN[+]	1	0	0	0	0	0
Asian	14	0	0	0	0	0
Black/African American	468	45	9.6	13	8	24
Hispanic/Latino[++]	180	24	13.3	7	6	11
Multiple races/NHPI+++/other races	31	1	3.2	0	0	1
White	295	51	17.3	20	9	22
HIV transmission category						
MSM	522	94	18.0	35	17	42
IDU	104	2	1.9	0	1	1
MSM and IDU	34	7	20.6	0	1	6
Heterosexual contact	208	16	7.7	4	4	8
Other**	121	2	1.7	1	0	1

Data source: PA HIV surveillance and PADOH STD Surveillance
Note:* Estimates were derived from using CDC's monitoring HIV care outcomes using HIV surveillance data. Therefore, the number estimated by CDC is different from the data obtained from the frozen dataset used for analysis in this report.
[+]AI/AN=American Indian/Alaska Native. [++] Hispanic/Latino persons can be of any race. [+++]NHPI=Native Hawaiian and Other Pacific Islander. Other** includes unknown risk, risk not identified, and risk not reported

Table 37: HIV/STD Co-occurring Among PLWH (Excluding Philadelphia), PA, 2019

Selected characteristics	PLWH Total No.	HIV/STD Coinfection among PLWH at year-end 2019				
		HIV/STD coinfection No.	Percent of total %	Chlamydia Trachomatis infection No.	Gonorrhea No.	Syphilis No.
Total	39,921	854	2.1	305	269	280
Sex/gender						
Female	10,731	56	0.5	35	14	7
Male	28,737	798	2.8	270	255	273
Transgender	453	0	0	0	0	0
Age at year-end 2019 (years)						
≤12	3	0	0	0	0	0
13-24	873	117	13.4	48	49	20
25-34	5,482	355	6.5	125	114	116
35-44	6,928	173	2.5	58	57	58
45-54	10,561	128	1.2	52	31	45
≥55	16,074	81	0.5	22	18	41
Race/ethnicity						
AI/AN[+]	50	0	0	0	0	0
Asian	374	6	1.6	3	1	2
Black/African American	18,694	338	1.8	127	112	99
Hispanic/Latino[++]	7,090	141	2.0	42	48	51
Multiple races/NHPI[+++]/other	1,716	21	1.2	10	6	_
White	11,997	348	2.9	123	102	123
HIV transmission category						
MSM	16,276	664	4.1	228	211	225
IDU	6,992	33	0.5	10	14	9
MSM and IDU	1,825	45	2.5	15	10	20
Heterosexual contact	12,142	77	0.6	39	20	18
Pediatric mode	19	7	36.8	2	3	2
Other**	2,667	28	1.0	11	11	6

Data source: PA HIV surveillance and PADOH STD Surveillance
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
[+++]NHPI=Native Hawaiian and Other Pacific Islander.

Table 38: HIV/STD Co-occurring Among PLWH in Philadelphia, PA, 2019

HIV/Chlamydia Coinfection	Number	Rate/100,000 population	Population
Total	**600**	**39.3**	**1,526,006**
Sex at birth			
Female	66	8.2	806,193
Male	534	74.2	719,813
Race/ethnicity			
Hispanic/Latino	89	47.4	187,611
American Indian/Alaskan Native	*	*	3,498
Asian	*	*	95,521
Black/African American	424	65.8	644,287
Multiple races	18	64.4	27,942
White	64	11.4	562,585
Transmission category			
Heterosexual contact[1]	78	30.5	255,841
IDU[2]	24	43.6	55,000
MSM[3]	444	1082	41,037
MSM&IDU	10	N/A	N/A
Pediatric mode	14	N/A	N/A
Other/Unknown	30	N/A	N/A
Age at HIV Diagnosis			
<15	16	5.7	282,809
15-24	317	119.6	265,014
25-34	186	75.6	246,062
35-44	55	2.9	188,323
45-54	22	11.1	197,970
55-64	*	*	160,808
>64	*	*	185,020
[1]Population estimate based on the number of individuals 18+ who are living below the poverty line (Definition used by NHBS Het cycle)			
[2]Population estimate based on persons who have ever injected drugs			
[3]Population estimate based on an estimated number of active MSM in the past 5 years			
Notes: *Cell sizes <6 are suppressed. Rates were calculated using the 2010 decennial census data.			
HIV/Gonorrhea Coinfection	**Number**	**Rate/100,000 population**	**Population**
Total	**786**	**51.5**	**1,526,006**
Sex at birth			
Female	44	5.5	806,193
Male	742	103.1	719,813
Race/ethnicity			
Hispanic/Latino	98	52.2	187,611
American Indian/Alaskan Native	*	*	3,498
Asian	6	6.3	95,521
Black/African American	548	85.1	644,287
Multiple races	20	71.6	27,942
White	110	19.6	562,585
Transmission category			

Heterosexual contact[1]	81	31.7	255,841
IDU[2]	30	54.5	55,000
MSM[3]	605	1474.3	41037
MSM&IDU	27	N/A	N/A
Pediatric Mode	12	N/A	N/A
Other/Unknown	31	N/A	N/A
Age at HIV Diagnosis			
<15	12	4.2	282,809
15-24	428	161.5	265,014
25-34	238	96.7	246,062
35-44	77	4.1	188,323
45-54	27	13.6	197,970
55-64	*	*	160,808
>64	*	*	185,020

[1]Population estimate based on the number of individuals 18+ who are living below the poverty line (Definition used by NHBS Het cycle)

[2]Population estimate based on persons who have ever injected drugs

[3]Population estimate based on an estimated number of active MSM in the past 5 years

Notes: *Cell sizes <6 are suppressed. Rates were calculated using the 2010 decennial census data.

HIV/Syphilis Coinfection	Number	Rate/100,000 population	Population
Total	**442**	**29.0**	**1,526,006**
Sex at birth			
Female	16	2.0	806,193
Male	426	59.2	719,813
Race/ethnicity			
Hispanic/Latino[++]	63	33.6	187,611
AI/AN[+]	*	*	3,498
Asian	*	*	95,521
Black/African American	299	46.4	644,287
Multiple races	12	42.9	27,942
White	63	11.2	562,585
Transmission category			
Heterosexual contact[1]	47	18.4	255,841
IDU[2]	19	34.5	55,000
MSM[3]	345	840.7	41,037
MSM&IDU	18	N/A	N/A
Pediatric mode	0	N/A	N/A
Other/Unknown	13	N/A	N/A
Age at HIV Diagnosis			
<15	0	0.0	282,809
15-24	206	77.7	265,014
25-34	151	61.4	246,062
35-44	58	3.1	188,323
45-54	25	12.6	197,970
55-64	*	*	160,808
>64	*	*	185,020

[1]Population estimate based on the number of individuals 18+ who are living below the poverty line (Definition used by NHBS Het cycle)		
[2]Population estimate based on persons who have ever injected drugs		
[3]Population estimate based on an estimated number of active MSM in the past 5 years		
Notes: *Cell sizes <6 are suppressed. Rates were calculated using the 2010 decennial census data.		

Data source: Philadelphia Department of Public Health, 2019
[+]AI/AN=American Indian/Alaska Native.
[++] Hispanic/Latino persons can be of any race.
* indicates cell size of ≤6.

Hepatitis C (HCV) and HIV Co-occurring Incidence and Prevalence in PA

Table 39: HCV HIV Co-occurring Among people Newly Diagnosed with HIV and PLWH at Year-end 2019 in PA

Selected characteristics	Newly diagnosed HIV disease			PLWH		
	Total	HCV HIV Coinfection		Total	HCV HIV coinfection	
	No.	No.	% of total	No.	No.	% of total
Total	**989***	**38**	**3.8**	**39,921**	**292**	**0.7**
Sex/Gender						
Female	227	11	4.8	10,731	58	0.5
Male	751	27	3.6	28,737	234	0.8
Transgender	11	0	0	453	0	0
Age at year-end 2019 (years)						
≤12	0	0		3	0	0
13-24	216	1	0.5	873	5	0.6
25-34	363	14	3.9	5,482	60	1.1
35-44	172	10	5.8	6,928	55	0.8
45-54	129	5	3.9	10,561	71	0.7
≥55	109	8	7.3	16,074	101	0.6
Race/ethnicity						
American Indian/Alaska Native	1	0	0	50	1	2.0
Asian	14	0	0	374	2	0.5
Black/African American	468	12	2.6	18,694	103	0.6
Hispanic/Latino	180	0	0.0	7,090	0	0
Multiple races/Native Hawaiian/other races	31	6	19.4	1,716	27	1.6
White	295	20	6.8	11,997	159	1.3
HIV transmission mode						
Male-to-male sexual contact (MSM)	522	11	2.1	16,276	136	0.8
Injection drug use (IDU)	104	10	9.6	6,992	57	0.8
MSM and IDU	34	3	8.8	1,825	21	1.2
Heterosexual contact	208	10	4.8	12,142	46	0.4
Pediatric mode	0	0	0.0	19	3	15.8
Other**	121	4	3.3	2,667	29	1.1

Data source: PA HIV surveillance and PADOH Infectious Disease Surveillance

Note:* Estimates were derived from using CDC's monitoring HIV care outcomes using HIV surveillance data. Therefore, the number estimated by CDC is different from the data obtained from the frozen dataset used for analysis in this report.

+AI/AN=American Indian/Alaska Native. ++ Hispanic/Latino persons can be of any race.   +++NHPI=Native Hawaiian and Other Pacific Islander.

 Other** includes unknown risk, risk not identified, and risk not reported

Appendix A: The Unmet Need Framework Estimates using the Required Method

[X] Pennsylvania%20Un
met%20Need%20Dat

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