HIV/AIDS EPIDEMIOLOGY REPORT

2016

COUNTY OF SAN DIEGO
HHSA
HEALTH AND HUMAN SERVICES AGENCY

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County of San Diego, Health and Human Services Agency
Epidemiology and Immunization Services Branch

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COUNTY OF SAN DIEGO
HEALTH AND HUMAN SERVICES AGENCY
PUBLIC HEALTH SERVICES

HIV/AIDS Epidemiology Report - 2016

Data 1980-2016, reported through June 30, 2017

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I. EXECUTIVE SUMMARY

Introduction

This document provides information about Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) cases in San Diego County from the first case reported in 1980 through the end of 2016. This report focuses primarily on the social and demographic groups most affected by HIV and the behaviors that can result in viral transmission. The intent is to bring together recent HIV surveillance information to highlight changing patterns and emerging trends. For more information about terms used in this report, see *Appendix 1*.

Detailed data on People Living with HIV and AIDS (PLWHA), in 2016, and recent diagnoses (2012-2016), are presented in this report. This will assist stakeholders in meeting the goals and objectives of the National HIV/AIDS Strategy[1] and the County of San Diego Getting to Zero initiative to end the HIV epidemic in the region.

The Getting to Zero initiative was adopted by the County of San Diego Board of Supervisors, in 2016, to increase public awareness of HIV and strengthen countywide prevention efforts. The initiative sets clear goals and objectives, encourages collaboration between local organizations and health care providers, and pursues policy changes that support HIV eradication. The initiative is comprised of three strategies: test, treat, and prevent. More information about the Getting to Zero initiative can be found at getting2zerosd.com.

Since the HIV epidemic began, 30,785 individuals with HIV disease (either HIV or AIDS) have been reported to the local health department. This includes individuals who have resided at some point in time in San Diego County, but were diagnosed elsewhere. Through December 31, 2016, 13,643 PLWHA were living and residing in the county. In 2016, 499 new HIV diagnoses were reported among county residents. See *Appendices 2* and *3* for information about the limitations of reporting and the reporting process.

National and State Comparisons

The most recent year for which complete national and state HIV data are available is 2015. At that time, California had the largest number of individuals with HIV disease and the third largest number of individuals with AIDS diagnosed in the United States. In 2015, San Diego County had the second largest number of newly diagnosed HIV disease cases in any local health jurisdiction in California (after Los Angeles County), and the third largest number of PLWHA in the state (after Los Angeles and San Francisco Counties).

Tables 1 and *2* compare new HIV diagnoses and PLWHA in San Diego County to national and state estimates for 2015. The rates of new HIV diagnoses and PLWHA for males, Whites, Asians, and Hispanics/Latinos were higher in the county than the national and state estimates. More information about rate computation can be found in *Appendix 4*. While the national rates for males were over three times those for females for both new HIV diagnoses and PLWHA, the county rates for males were over nine times those for females. Comparing national and local data for mode of transmission, San Diego County had a higher percentage of cases with male-to-male sexual contact and lower percentages of cases from heterosexual transmission and people who inject drugs (PWID).

[1]The goals of the National HIV/AIDS Strategy are to reduce new HIV infections; increase access to care and optimize health outcomes; reduce health disparities and inequities; and achieve a more coordinated national response.

In 2015, 1.4% of the PLWHA alive in the United States resided in San Diego County and 10.7% of those living in California lived in the county (*Table 2*). Since the HIV epidemic began, approximately 1% of AIDS cases in the nation and 9% of the AIDS cases in California have been diagnosed in San Diego County (*Table 3*).

People Living with HIV/AIDS

As noted above, 13,643 PLWHA were residing in San Diego County through December 31, 2016. These individuals were most commonly male, White or Hispanic/Latino, more than 49 years of age, and men who had male-to-male sexual contact (*Tables 2 and 4*). The rate for Black/African American women was over eight times greater than that for White women (481.0 and 55.0, respectively, *Table 5*).

Since the epidemic began, more individuals diagnosed with HIV disease have resided in the Central Region than in any other Health and Human Services Agency (HHSA) Region. Over time, the percentage of cases diagnosed in the county while residing in the Central Region has declined, while the percentages residing in the South and East Regions have increased. The majority of PLWHA who lived in the Central Region were White (52%), followed by Hispanic/Latino (29%) and Black/African American (15%) (*Tables 6 and 7*). The South Region had the second highest number of PLWHA, where the majority was Hispanic/Latino (70%), with smaller percentages of individuals who were White (16%) and Black/African American (11%). For more information about the six HHSA Regions, see *Appendix 5*.

Ten percent of PLWHA in San Diego County are women. The percentages of female cases by race/ethnicity varies. Six percent of White PLWHA, 11% of Latino PLWHA, and 19% of Black/African American PLWHA are female (*Table 5*). Since 1997, more female PLWHA lived in the Central Region at the time of their diagnosis than in any other HHSA Region, though they comprised the lowest percentage of total cases living there (7%) (*Table 8*).

For men, the predominant risk factor for transmission was male-to-male sexual contact (81%) followed by male-to-male sexual contact and injection drug use (8%) (*Table 9*). There were differences in male cases across race/ethnicities. Blacks/African Americans had a greater proportion of heterosexual (9%) and PWID (8%) risk factors for transmission than either Whites (2% and 4%, respectively) or Hispanics/Latinos (5% and 5%, respectively) (*Table 10*).

In females, heterosexual contact (74%) was the primary mode of transmission, followed by PWID (19%). White females had the greatest proportion of cases attributable to PWID (28%) compared to Black/African American (18%) and Hispanic/Latino (14%) (*Table 11*). A greater percentage of females than males reported Mexico or another country as the country of birth (*Table 12*).

More information about country of birth for Hispanic/Latino and Asian/Pacific Islander PLWHA is available in *Table 13 and Table 14*.

The San Diego County community with the greatest percentage of PLWHA was the City of San Diego (69%), followed by Chula Vista (7%) and Oceanside (3%) (*Table 15*).

Recent HIV Diagnoses

Figure 1 presents annual data on HIV diagnoses made in San Diego County. In 2016, 499 new HIV diagnoses were reported in the county, which is near the lower end of the overall range of cases reported annually since

2007 (481-619 cases). The peak year of HIV diagnoses was 1990. In the five-year period from 2012 to 2016, the average age at the time of diagnosis was 36 years (*Table 16*). Whites had a slightly older average age at diagnosis (40 years) compared to other race/ethnicities.

The percentage of people of color who have been diagnosed with HIV disease has increased over time, from 28% in 1980 to 1991 to 64% in 2012 to 2016 (*Figure 2*). In 2016, Blacks/African Americans had the third largest number of cases per year, but the highest rate of HIV disease diagnosis (*Table 17* and *Figure 3*). The annual HIV disease rate among Blacks/African Americans was over three times that observed among Whites. Hispanics/Latinos had the highest number of HIV disease diagnosis and a rate that was two times that observed among Whites, but about one-half that observed among Blacks/African Americans.

Most recent HIV disease diagnoses in San Diego County were among residents of the Central Region (*Table 18*). In this region, the percentage of White cases declined to 39% while the percentage of Hispanic/Latino cases increased to 39%, compared to PLWHA (52% and 29%, respectively) (*Table 7*).

Heterosexual contact has become a somewhat more frequent mode of transmission over time for male cases, from 2% to 9%, while PWID decreased from 8% to 4%, but male-to-male sexual contact remains the primary risk factor for transmission (78%) (*Table 9* and *Figure 4*).

Although the primary mode of transmission changed little for men over time, there were changes for females. Heterosexual contact increased in frequency while PWID decreased (*Table 9*). Heterosexual contact with a male known to be HIV-positive accounted for 73% of female HIV diagnoses in recent years, while PWID partners accounted for 6% and partners who had male-to-male sexual contact account for 4% *(Figure 5)*. Gathering risk information is challenging, particularly when gathering partner information. Some known HIV-positive partners may be PWID, have male-to-male sexual contact, or have other risk factors for HIV acquisition that are not disclosed to female partners and therefore not captured in the dataset.

AIDS Cases

On April 11, 2014, the Centers for Disease Control and Prevention (CDC) released a revised surveillance HIV case definition that, in part, included changes regarding whether a case was considered to progress to AIDS (*Appendix 3*). Previously, a patient was classified as an AIDS case if he or she was diagnosed with HIV and an opportunistic infection, or had a CD4 count of less than 200 cells/µL, or a CD4 percentage of less than 14%. Effective January 1, 2014, the CD4 percentage was used for AIDS diagnosis only when the CD4 count was unknown. In addition, for newly diagnosed cases, a CD4 count of less than 200 cells/µL, or diagnosis with an opportunistic infection is not diagnostic for AIDS if a patient had a negative HIV test within 180 days of the HIV diagnosis date. This accounts for a potential drop in CD4 that may be due to seroconversion and early HIV diagnosis rather than progression of HIV disease to AIDS. The new definition resulted in fewer reported AIDS cases beginning in 2014, but more accurately reflected HIV disease progression.

The time between HIV diagnosis and AIDS diagnosis is an important measure of success in getting individuals tested and treated for HIV. A longer time period between these two diagnoses generally indicates that a patient was

identified earlier in the course of infection. Late testers are AIDS cases that are identified with less than 12 months following HIV diagnosis. In San Diego County, the percentage of HIV cases progressing to AIDS in less than one year decreased overall from 31% to 22% (*Figure 6*). Variability in the percentages for Black/African American cases may be due to the small number of Black/African American cases per year. The case definition changes described above may affect the percentage of cases with progression from HIV to AIDS in less than one year, and thus differences since 2014 should be interpreted with caution.

Cases with less than 30 days between HIV and AIDS diagnosis are said to have simultaneous diagnoses. The 30-day window occurs when there is a delay between the results of initial HIV testing and CD4 counts that may be AIDS-defining, or when a patient presents with an AIDS-defining condition and has no previous HIV testing. One-fifth of HIV diagnoses in recent years have been simultaneous HIV and AIDS diagnoses (*Figure 7*). The percentage of cases with simultaneous diagnoses increased slightly over time, and earlier racial/ethnic differences flattened out.

One possible explanation for the increase in cases presenting with more advanced HIV disease (simultaneous diagnosis) is an artifact of changes in reporting. Improvements in capturing laboratory test results, such as Electronic Laboratory Reporting (ELR), have likely contributed to this trend. CD4 test reporting to local health jurisdictions became law in 2008, but it has taken time to be fully implemented. Before 2008, low CD4 tests may have been underreported, resulting in an underestimation of AIDS cases.

HIV Care Continuum

The HIV care continuum (*Figure 8*) is a model that outlines the five sequential steps or stages of HIV medical care through which people living with HIV progress, from initial diagnosis to achieving the goal of viral suppression (a very low level of HIV in the body, less than 200 copies/mL). Viral suppression is the goal of treatment because it helps HIV infected individuals stay healthy and live longer and because it greatly reduces the chances of transmitting the virus to others. The HIV care continuum model shows the proportion of individuals living with HIV who are engaged at each stage in the continuum.

The enhanced HIV/AIDS Reporting System (eHARS) and the AIDS Regional Information and Evaluation System (ARIES), along with laboratory test results, provide the data for the HIV care continuum. The 2016 HIV care continuum (*Figure 8*) includes all those individuals living with HIV and residing in San Diego County, regardless of where they were diagnosed. The primary limitation of continuum data is that people move and there is limited and delayed information on those moving outside California at this time. Thus, some individuals who appear to be living with HIV in San Diego County and out of care are actually living elsewhere out of the region.

Of those diagnosed with HIV, those having had at least one CD4 or viral load test are said to be linked to HIV primary care. In San Diego County, this figure was 75% during 2016 (*Figure 8*). The level of engagement in care for people living with HIV disease has been measured by determining the percentage that are regularly seeing a provider for HIV care, sometimes referred to as engaged in care or retained in care. This was defined as having two or more CD4 or viral load tests at least 90 days

apart within a 12 month period. During 2016, 47% of those diagnosed with HIV in the county were engaged in care.

The next stage is receiving a prescription for antiretroviral therapy (ART) during the 12 month period. Data for ART in San Diego County are currently unavailable. The last stage, viral suppression, can suggest the level of ART uptake. PLWHA who take HIV medicine as prescribed and get and keep an undetectable viral load have effectively no risk of transmitting HIV to their HIV-negative sexual partners (Data Sources section, page 32). In San Diego County, 60% were virally suppressed during 2016 (*Figure 8*). The fact that a higher percentage of PLWHA had achieved viral suppression than had remained engaged in care, in 2016, is likely due to the strict definition used to define engagement in care that may exclude some individuals who are actually receiving care, on ART, and virally suppressed. More information about the HIV care continuum is available by contacting the HIV surveillance unit.

About the Data

Several changes occurred between 2014 and 2016 that may have improved the timeliness and accuracy of the HIV surveillance data in this report compared to prior reports. These include the required reporting of CD4 laboratory results, a revised HIV surveillance case definition (both described in more detail under AIDS Cases; pages 7-8), and the launch of ELR.

The California Department of Public Health Office of AIDS initiated ELR in 2015, with pilot laboratories demonstrating a high level of participation. By the end of 2016, most commercial and hospital laboratories in San Diego County were sending HIV-related and CD4 test results to the State ELR system. The ELR system allows for more rapid reporting of new HIV diagnoses and for updating disease progression in existing cases. The system also updates the case addresses, which provide a more accurate understanding of where residents living with HIV disease reside in the county. Data presented in this report remain subject to future revisions as new information is reported.

Birth sex is used in the gender descriptions in this report. It is recognized that information about HIV infection in transgender and non-binary genders would improve the understanding of the local HIV epidemic. However, case data are not detailed enough to reliably provide this information.

The year of HIV diagnosis presented in this report is the year of first diagnosis, unless otherwise stated. This report uses HIV diagnosis year wherever possible, as this is the earliest indication of infection.

Additional information on HIV/AIDS reporting and statistics in San Diego can be found at:

www.sdhivaids.org

Key Findings

Through 2016, it is estimated that 13,643 people were living with HIV and residing in San Diego County.

For both new HIV diagnoses and PLWHA , San Diego County has higher rates of males, Whites, Asians, and Hispanics/Latinos compared to state and national estimates.

The average annual rate for HIV disease diagnosis in the last five years was stable with an average of 15.3 new HIV disease diagnoses per 100,000 per year.

In recent years, the mode of exposure for most men (83%) and women (82%) was sexual contact with men.

The burden of the HIV epidemic has been greatest for Black/ African Americans followed by Hispanics/Latinos.

Most PLWHA and also recent cases lived in or were diagnosed in the Central Region of San Diego County but a growing proportion have been diagnosed in the South Region.

Table 1. HIV Disease Diagnosis Case Counts, Percentages, and Rates, United States and California, 2015, and San Diego County, 2015 and 2016.

	United States			California			San Diego County[1]					
	2015			2015			2015			2016		
	No.	(%)	Rate[2]	No.	(%)	Rate[2]	No.	(%)	Rate[2]	No.	(%)	Rate[2]
Sex												
Male	32,306[3]	(81)	24.7[3]	4,361	(88)	22.5	453	(90)	27.6	443	(89)	26.8
Female	7,435[3]	(19)	5.4[3]	522	(11)	2.7	49	(10)	3.0	56	(11)	3.4
Race/Ethnicity												
American Indian/Alaska Native	197	(<1)	8.3	17	(<1)	9.8	3	(1)	---	2	(<1)	---
Asian	947	(2)	5.5	315	(6)	6.1	35	(7)	9.5	25	(5)	6.6
Black/African American	17,432	(44)	43.7	883	(18)	39.5	65	(13)	41.7	64	(13)	40.8
Hispanic/Latino	9,695	(24)	17.2	2,167	(44)	14.3	208	(41)	19.2	232	(46)	21.1
Native Hawaiian/Other Pacific Islander	80	(<1)	14.4	15	(<1)	10.5	2	(<1)	---	2	(<1)	---
White	10,465	(26)	5.3	1,436	(29)	9.6	175	(35)	11.5	166	(33)	10.9
Multiple races	1,060	(3)	16.1	115	(2)	11.0	14	(3)	14.4	7	(1)	7.1
Mode of Transmission												
Male-to-male sexual contact	26,459	(66)	---	3,273	(66)	---	351	(70)	---	321	(64)	---
People Who Inject Drugs	2,347	(6)	---	193	(4)	---	20	(4)	---	21	(4)	---
Male-to-male sexual contact and injection drug use	1,270	(3)	---	156	(3)	---	22	(4)	---	19	(4)	---
Heterosexual	9,588	(24)	---	831	(17)	---	84	(17)	---	91	(18)	---
Other[4]	212	(1)	---	495	(10)	---	25	(5)	---	47	(9)	---
Total	39,876[5]	(100)	12.4	4,948[6]	(100)	12.7	502	(100)	15.4	499[7]	(100)	15.2

[1]Newly diagnosed with HIV disease while residing in San Diego County.
[2]Rates per 100,000 population. Rates not calculated for fewer than 5 cases or when denominators are unknown. Caution should be taken in interpreting rates for fewer than 20 cases.
[3]For United States, includes only adults and adolescents (not children <13 years).
[4]Includes blood/tissue exposure, maternal transmission, and no identifiable risk.
[5]Includes 135 children (<13 years at diagnosis) for whom sex is not reported.
[6]Includes 60 transgender male-to-female and 5 transgender female-to-male.
[7]Includes 1 for whom race is unknown.
Note: Percentages may not total to 100 due to rounding.

Table 2. PLWHA Case Counts, Percentages, and Rates, United States and California, 2015, and San Diego County, 2015 and 2016.

	United States			California			San Diego County[1]			San Diego County[2]		
	2015			2015			2015			2016		
	No.	(%)	Rate[3]	No.	(%)	Rate[3]	No.	(%)	Rate[3]	No.	(%)	Rate[3]
Sex												
Male	738,832[4]	(76)	563.9[4]	111,763	(87)	577.6	12,425	(90)	757.2	12,275	(90)	742.2
Female	232,692[4]	(24)	169.7[4]	15,069	(12)	77.1	1,361	(10)	83.9	1,368	(10)	83.7
Race/Ethnicity												
American Indian/Alaska Native	2,904	(<1)	122.6	400	(<1)	231.3	72	(1)	522.0	53	(<1)	375.5
Asian[5]	12,887	(1)	74.8	4,961	(4)	96.2	430	(3)	116.6	414	(3)	109.6
Black/African American	405,857	(42)	1,017.8	22,595	(18)	1,010.3	1,753	(13)	1,125.2	1,798	(13)	1,145.7
Hispanic/Latino	213,736	(22)	379.4	44,480	(35)	293.2	4,655	(34)	430.2	4,697	(34)	427.6
Native Hawaiian/Pacific Islander	891	(<1)	160.3	274	(<1)	192.1	28	(<1)	214.0	35	(<1)	261.8
White	298,670	(31)	150.9	52,842	(41)	352.9	6,637	(48)	434.9	6,418	(47)	421.7
Multiple races	37,934	(4)	577.3	2,856	(2)	274.4	211	(2)	216.4	223	(2)	224.8
Unknown	967	(<1)	---	7	(<1)	---	0	---	---	5	(<1)	---
Mode of Transmission												
Male-to-male sexual contact	526,456	(54)	---	85,554	(67)	---	10,105	(73)	---	9,933	(73)	---
People Who Inject Drugs	126,704	(13)	---	8,049	(6)	---	804	(6)	---	812	(6)	---
Male-to-male sexual contact and injection drug use	53,090	(5)	---	9,128	(7)	---	1,086	(8)	---	993	(7)	---
Heterosexual	250,615	(26)	---	18,770	(15)	---	1,470	(11)	---	1,489	(11)	---
Other[6]	16,981	(2)	---	6,914	(5)	---	321	(2)	---	416	(3)	---
Total	973,846[7]	(100)	303.5	128,415[8]	(100)	330.1	13,786	(100)	422.4	13,643	(100)	414.9

[1]PLWHA through 12/31/2015, resided in San Diego County at HIV and/or AIDS diagnosis.
[2]PLWHA through 12/31/2016, currently known to reside in San Diego County, regardless of residence at HIV and/or AIDS diagnosis.
[3]Rates per 100,000 population. Rates not provided when denominators are unknown.
[4]Includes only adults and adolescents (not children <13 years).
[5]Includes Asian/Pacific Islander legacy cases that were reported before Asian and Native Hawaiian or other Pacific Islander became two separate categories.
[6]Includes blood/tissue exposure, maternal transmission, and no identifiable risk.
[7]Includes 2,322 children (<13 years at end of year) for whom sex is not reported.
[8]Includes 1,537 transgender male-to-female, 42 transgender female-to-male, and 4 alternative gender identity.
Note: Percentages may not total to 100 due to rounding.

Table 3. HIV and AIDS Cases, in 2016, and Cumulative, 1981-2016, AIDS Cases, United States, California, and San Diego County.

Diagnoses	United States	California	San Diego County[1]
HIV, 2016[2]	39,782	4,972	499
AIDS, 2016[3]	18,160	1,948	177
Cumulative AIDS, 1981-2016	1,232,246	175,772	15,899

[1]Diagnosed while residing in San Diego County.
[2]Diagnosis of HIV infection regardless of the stage of disease, included simultaneous HIV/AIDS diagnosis.
[3]Diagnosis of AIDS infection, included simultaneous HIV/AIDS diagnosis and individuals who progressed from HIV to AIDS.

Table 4. HIV Disease Diagnosis Case Counts and Percentages by Age Group at HIV Disease Diagnosis and for PLWHA, San Diego County, 2016.

	At Diagnosis[1]		PLWHA[2]		
Age Group, Years	Number	(%)	Number	(%)	Rate[3]
Less than 13	143	(1)	15	(<1)	2.8
13-19	432	(2)	41	(<1)	14.3
20-29	6,725	(30)	876	(6)	159.0
30-39	8,631	(38)	2,245	(16)	472.5
40-49	4,587	(20)	3,340	(24)	797.7
More than 49	2,133	(9)	7,126	(52)	693.6
Total	22,651	(100)	13,643	(100)	414.9

[1]HIV disease diagnosed between 1980 and 12/31/2016 while residing in San Diego County.
[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.
[3]Rate per 100,000.
Note: Percentages may not total to 100 due to rounding.

Table 5. HIV Disease Diagnosis Case Counts and Percentages Among Females by Race/Ethnicity Over 5-Year Time Periods and PLWHA, San Diego County, 2002-2016.

	Numbers and Percentages of Females Diagnosed by Time Period												
	2002-2006[1]			2007-2011[1]			2012-2016[1]			PLWHA[2]			
Race/Ethnicity	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Rate[5]	Total cases[4]
Black/African American	86	(23)	372	69	(17)	400	48	(16)	297	345	(19)	481.0	1,798
Hispanic/Latino	140	(13)	1,103	100	(9)	1,124	100	(9)	1,067	513	(11)	92.6	4,697
White	79	(6)	1,372	85	(7)	1,135	83	(9)	892	408	(6)	55.0	6,418
Other[6]	12	(8)	145	15	(8)	197	27	(13)	206	102	(14)	---	730
Total	317	(11)	2,992	269	(9)	2,856	258	(10)	2,462	1,368	(10)	83.7	13,643

[1]Cases who resided in San Diego County at HIV disease diagnosis.
[2]PLWHA currently known to be living in San Diego County through 12/31/2016, regardless of when diagnosed or residence at HIV disease diagnosis.
[3]Number and percent of all cases who are female within each race/ethnicity group.
[4]Females and males.
[5]Rates per 100,000 female population. Rate not calculated for unknown denominator.
[6]Includes Asian, Pacific Islander, American Indian, Alaska Native, multiple races, and unknown.
Note: HIV became reportable in April 2006.

Table 6. HIV Disease Diagnosis Case Counts and Percentages by HHSA Region Over 5-Year Time Periods, San Diego County, 1992-2016.

Time Period of Diagnosis	HHSA Region[1]												Total in Time Period[2]
	Central		South		East		North Central		North Coastal		North Inland		Unknown		
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	
1992-1996	2,222	(57)	420	(11)	257	(7)	506	(13)	293	(8)	201	(5)	4	(<1)	3,903
1997-2001	1,553	(55)	414	(15)	197	(7)	327	(12)	203	(7)	128	(5)	3	(<1)	2,825
2002-2006	1,596	(53)	485	(16)	199	(7)	357	(12)	215	(7)	136	(5)	4	(<1)	2,992
2007-2011	1,387	(49)	520	(18)	238	(8)	340	(12)	230	(8)	139	(5)	2	(<1)	2,856
2012-2016	1,081	(44)	480	(19)	237	(10)	326	(13)	198	(8)	136	(6)	4	(<1)	2,462
Total in Region[2]	7,839	(52)	2,319	(15)	1,128	(8)	1,856	(12)	1,139	(8)	740	(5)	17	(<1)	15,038

[1]HHSA region at diagnosis for cases residing in San Diego County when diagnosed with HIV disease.
[2]Does not include cases diagnosed from 1980 through 1991.
Notes: Percentages may not total to 100 due to rounding. HIV became reportable in April 2006.

Table 7. PLWHA Case Counts, Percentages, and Rates by HHSA Region and Race/Ethnicity[1], San Diego County, 2016.

	Race/Ethnicity														
	Black/ African American			Hispanic/Latino			White			Others[2]			Total in Region		
HHSA Region	Number	(%)	Rate[3]	Number	(%)	Rate[3]	Number	(%)	Rate[3]	Number	(%)	Rate[3]	Number	(%)	Rate[3]
Central	1,023	(15)	2,120.0	1,972	(29)	944.8	3,552	(52)	2,188.4	333	(5)	---	6,880	(100)	1,372.7
South	239	(11)	835.6	1,506	(70)	537.3	347	(16)	300.7	73	(3)	---	2,165	(100)	432.1
East	176	(15)	762.7	299	(26)	232.0	598	(53)	218.1	63	(6)	---	1,136	(100)	236.1
North Central	177	(11)	862.0	342	(21)	263.6	1,000	(60)	275.6	149	(9)	---	1,668	(100)	256.1
North Coastal	124	(12)	622.1	329	(31)	201.9	543	(51)	179.8	59	(6)	---	1,055	(100)	192.4
North Inland	55	(8)	332.8	243	(34)	129.3	366	(51)	120.0	50	(7)	---	714	(100)	117.9
Total[4]	1,798	(13)	1,145.7	4,697	(34)	427.6	6,418	(47)	421.7	730	(5)	---	13,643	(100)	414.9

[1]HHSA region currently known for PLWHA in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.
[2]Includes Asian, Pacific Islander, American Indian, Alaska Native, multiple races, and unknown.
[3]Rate per 100,000. Rates not calculated for unknown denominators.
[4]Includes 25 PLWHA (0.2%) who have unknown HHSA region.
Note: Percentages may not total to 100 due to rounding.

Table 8. HIV Disease Diagnosis Case Counts and Percentages Among Females by HHSA Region Over 5-Year Time Periods and PLWHA, San Diego County, 2002-2016.

	Numbers and Percentages of Females Diagnosed by Time Period									PLWHA[2]			
	2002-2006			2007-2011			2012-2016						
HHSA Region	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Total cases[4]	No. female[3]	(%) female[3]	Rate[5]	Total cases[4]
Central	133	(8)	1,596	104	(7)	1,387	84	(8)	1,081	473	(7)	195.8	6,880
South	72	(15)	485	55	(11)	520	55	(11)	480	285	(13)	113.5	2,165
East	34	(17)	199	40	(17)	238	36	(15)	237	192	(17)	78.7	1,136
North Central	29	(8)	357	20	(6)	340	31	(10)	326	148	(9)	46.1	1,668
North Coastal	27	(13)	215	32	(14)	230	28	(14)	198	149	(14)	55.3	1,055
North Inland	22	(16)	136	18	(13)	139	21	(15)	136	121	(17)	39.4	714
Total[6]	317	(11)	2,992	269	(9)	2,856	258	(10)	2,462	1,368	(10)	83.7	13,643

[1]HHSA Region at diagnosis for individuals diagnosed while residing in San Diego County.
[2]HHSA Region currently known for PLWHA regardless of when diagnosed or residence at diagnosis.
[3]Numbers and percentages of all cases who are female within each HHSA region.
[4]Females and males.
[5]Rates per 100,000 female population.
[6]HHSA Region unknown for 10 cases diagnosed between 2002 and 2016 and for 25 PLWHA.
Note: HIV became reportable in April 2006.

Table 9. HIV Disease Diagnoses and PLWHA, Case Counts and Percentages by Mode of Transmission, Sex and 5-Year Time Periods, San Diego County, 1992-2016.

Sex		Time Period of Diagnosis[1]											
	Mode of Transmission	1992-1996		1997-2001		2002-2006		2007-2011		2012-2016		PLWHA[2]	
Male	**Adolescent/Adult:**	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
	Male-to-male sexual contact	2,704	(77)	1,927	(77)	2,116	(79)	2,091	(81)	1,718	(78)	9,933	(81)
	PWID[3]	279	(8)	166	(7)	146	(5)	138	(5)	88	(4)	558	(5)
	Male-to-male sexual contact and injection drug use	427	(12)	295	(12)	253	(9)	137	(5)	107	(5)	993	(8)
	Heterosexual	54	(2)	77	(3)	129	(5)	150	(6)	199	(9)	513	(4)
	Other/Risk not specified	35	(1)	9	(<1)	20	(1)	61	(2)	91	(4)	231	(2)
	Pediatric (0-12):												
	All modes	11	(<1)	13	(1)	11	(<1)	10	(<1)	1	(<1)	47	(<1)
	Total	3,510	(100)	2,487	(100)	2,675	(100)	2,587	(100)	2,204	(100)	12,275	(100)
Female	**Adolescent/Adult:**	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
	PWID	136	(35)	104	(31)	61	(19)	49	(18)	25	(10)	254	(19)
	Heterosexual	217	(55)	213	(63)	239	(75)	193	(72)	208	(81)	976	(71)
	Other/Risk not specified	22	(6)	5	(1)	7	(2)	21	(8)	20	(8)	84	(6)
	Pediatric (0-12):												
	All modes	18	(5)	16	(5)	10	(3)	6	(2)	5	(2)	54	(4)
	Total	393	(100)	338	(100)	317	(100)	269	(100)	258	(100)	1,368	(100)

[1]Based on first year of diagnosis; HIV diagnosis when known.

[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

[3]PWID is defined as People Who Inject Drugs.

Note: Percentages may not total to 100 due to rounding.

Table 10. HIV Disease Diagnoses and PLWHA, Case Counts and Percentages Among Adult/Adolescent Males by Mode of Transmission and Race/Ethnicity, San Diego County, 2012-2016.

	Race/Ethnicity															
	Black/African American				Hispanic/Latino				White				All Races/Ethnicities[1]			
	2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Male-to-male sexual contact	178	(71)	989	(69)	733	(80)	3,403	(82)	614	(76)	5,008	(84)	1,718	(78)	9,933	(81)
PWID	9	(4)	123	(8)	36	(4)	209	(5)	40	(5)	212	(4)	88	(4)	558	(5)
Male-to-male sexual contact and injection drug use	6	(2)	142	(10)	30	(3)	245	(6)	65	(8)	559	(9)	107	(5)	993	(8)
Heterosexual	41	(16)	129	(9)	84	(9)	210	(5)	66	(8)	150	(2)	199	(9)	513	(4)
Other/NIR[4]	15	(6)	54	(4)	43	(4)	92	(2)	24	(3)	70	(1)	91	(4)	231	(2)
Total	249	(100)	1,437	(100)	966	(100)	4,159	(100)	809	(100)	5,999	(100)	2,203	(100)	12,228	(100)

[1]Includes Asian, Pacific Islander, American Indian, Alaska Native and unknown.

[2]Based on first year of diagnosis; HIV diagnosis when known.

[3]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

[4]Includes blood product/tissue exposure and No Identified Risk (NIR).

Note: Percentages may not total to 100 due to rounding.

Table 11. HIV Disease Diagnoses and PLWHA, Case Counts and Percentages Among Adult/Adolescent Females by Mode of Transmission and Race/Ethnicity, San Diego County, 2012-2016.

	Race/Ethnicity															
	Black/African American				Hispanic/Latino				White				All Races/Ethnicities[1]			
	2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]		2012-2016[2]		PLWHA[3]	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
IDU	1	(2)	60	(18)	8	(8)	67	(14)	16	(19)	111	(28)	25	(10)	254	(19)
Heterosexual	41	(89)	242	(74)	86	(87)	400	(82)	58	(71)	262	(66)	208	(82)	976	(74)
Other/NIR[4]	4	(9)	27	(8)	5	(5)	21	(4)	8	(10)	25	(6)	20	(8)	84	(6)
Total	46	(100)	329	(100)	99	(100)	488	(100)	82	(100)	398	(100)	253	(100)	1,314	(100)

[1]Includes Asian, Pacific Islander, American Indian, Alaska Native and unknown.

[2]Based on first year of diagnosis; HIV diagnosis when known.

[3]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

[4]Includes blood product/tissue exposure and No Identified Risk (NIR).

Note: Percentages may not total to 100 due to rounding.

Table 12. HIV Disease Diagnosis and PLWHA, Counts and Percentages for US, Mexico or Other Country of Birth by Sex, Time Period and PLWHA, San Diego County, 1997-2016.

Sex	Place of Birth	Time Period of Diagnosis[1] 1997-2001 Number	(%)	2002-2006 Number	(%)	2007-2011 Number	(%)	2012-2016 Number	(%)	PLWHA[3] Number	(%)
Male	US[2]	1,857	(75)	1,938	(72)	1,931	(75)	1,681	(76)	9,415	(77)
	Mexico	498	(20)	566	(21)	469	(18)	353	(16)	2,004	(16)
	Other	115	(5)	142	(5)	145	(6)	145	(7)	630	(5)
	Unknown	17	(1)	29	(1)	42	(2)	25	(1)	226	(2)
	Total	2,487	(100)	2,675	(100)	2,587	(100)	2,204	(100)	12,275	(100)
Female	US[2]	209	(62)	167	(53)	153	(57)	174	(67)	844	(62)
	Mexico	78	(23)	92	(29)	60	(22)	41	(16)	287	(21)
	Other	50	(15)	56	(18)	49	(18)	39	(15)	213	(16)
	Unknown	1	(<1)	2	(1)	7	(3)	4	(2)	24	(2)
	Total	338	(100)	317	(100)	269	(100)	258	(100)	1,368	(100)

[1]Based on first year of diagnosis; HIV diagnosis when known.

[2]Includes US Dependencies.

[3]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

Note: Percentages may not total to 100 due to rounding.

Table 13. HIV Disease Diagnoses and PLWHA, Counts and Percentages by Country of Birth of Hispanic/Latino Cases, San Diego County, 2012-2016.

	Diagnosed 2012-2016[1]		PLWHA[2]	
Country of Birth	Number	Percent	Number	Percent
United States	615	57.6	2,086	44.4
Mexico	394	36.9	2,288	48.7
Honduras	9	0.8	27	0.6
El Salvador	9	0.8	21	0.4
Brazil	5	0.5	24	0.5
Cuba	5	0.5	20	0.4
Guatemala	--	--	22	0.5
Other[3]	17	1.5	124	2.6
Not Specified/Unknown	13	1.3	85	1.8
Total	1,067	100.0	4,697	100.0

[1]Based on first diagnosis; HIV diagnosis when known.

[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

[3]The following countries/territories had <5 recent cases or <20 PLWHA: Argentina, Belize, Bolivia, Chile, Columbia, Costa Rica, Dominican Republic, Ecuador, France, Guam, Guatemala, Jamaica, Nicaragua, Nigeria, Panama, Peru, Philippines,

Note: Percentages may not total to 100 due to rounding.

Table 14. HIV Disease Diagnoses and PLWHA, Counts and Percentages by Country of Birth of Asian/Pacific Islander Cases, San Diego County, 2012-2016.

	Diagnosed 2012-2016[1]		PLWHA[2]	
Country of Birth	Number	Percent	Number	Percent
United States	90	61.6	217	48.3
Philippines	21	14.4	101	22.5
Vietnam	9	6.2	27	6.0
China	8	5.5	11	2.4
Other[3]	17	11.6	83	18.5
Not Specified/Unknown	1	0.7	10	2.2
Total	146	100.0	449	100.0

[1]Based on first diagnosis; HIV diagnosis when known.

[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.

[3]The following countries/territories had <5 recent cases or <20 PLWHA: Afghanistan, American Samoa, Brazil, Cambodia, Fiji, Guam, Hong Kong, India, Indonesia, Japan, Kenya, Laos, Malaysia, Mexico, Myanmar, North Korea, Norway, Russia, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, United Kingdom, Zambia.

Note: Percentages may not total to 100 due to rounding.

Table 15. HIV Disease Diagnoses and PLWHA, Counts and Percentages by Community of Residence at Time of HIV Diagnosis, San Diego County, 2012-2016.

	Diagnosed 2012-2016[1]		PLWHA[2]	
Community	Number	Percent	Number	Percent
San Diego	1,565	63.6	5,014	68.6
Chula Vista	196	8.0	478	6.5
Oceanside	96	3.9	239	3.3
El Cajon	81	3.3	183	2.5
Spring Valley	55	2.2	107	1.5
San Ysidro	50	2.0	174	2.4
National City	50	2.0	136	1.9
Escondido	48	2.0	125	1.7
Vista	41	1.7	122	1.7
Carlsbad	35	1.4	88	1.2
La Mesa	35	1.4	105	1.4
San Marcos	29	1.2	53	0.7
Lemon Grove	22	0.9	53	0.7
Santee	19	0.8	57	0.8
Imperial Beach	15	0.6	48	0.7
La Jolla	15	0.6	21	0.3
Lakeside	15	0.6	32	0.4
Coronado	13	0.5	21	0.3
Camp Pendleton	11	0.4	--	--
Ramona	10	0.4	21	0.3
Fallbrook	9	0.4	20	0.3
Poway	9	0.4	26	0.4
Bonita	8	0.3	22	0.3
Encinitas	8	0.3	37	0.5
Other[3]	26	1.1	213	2.9
Total	2,461	100.0	7,310	100.0

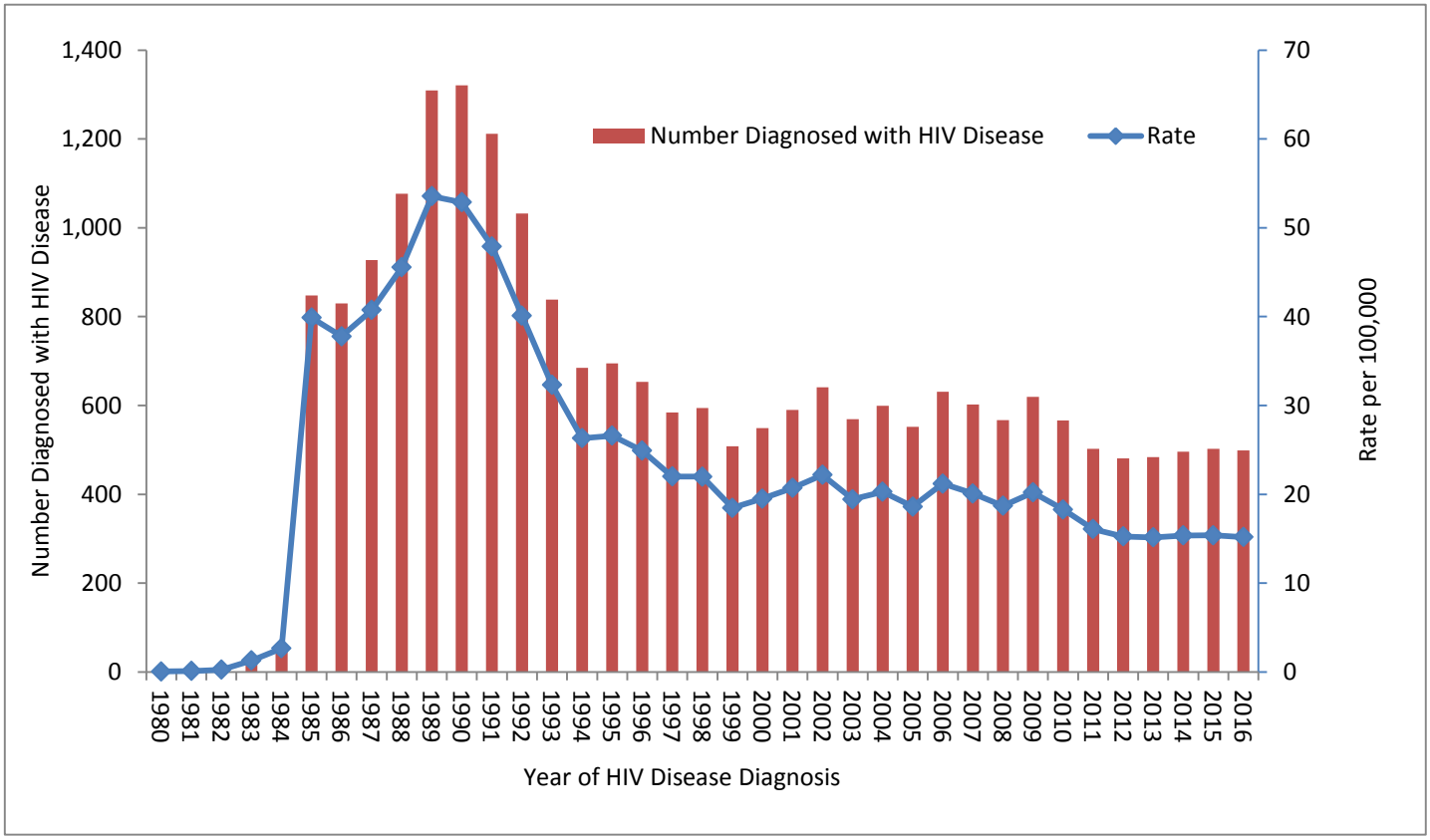
[1]Based on first diagnosis; HIV diagnosis when known.

[2]Of those known to be diagnosed with HIV in San Diego County and currently living in San Diego County through 12/31/2016.

[3]The following communities had <5 recent cases or <20 PLWHA: Alpine, Bonsall, Borrego Springs, Boulevard, Campo, Camp Pendleton, Cardiff-by-the-Sea, Del Mar, Jamul, Julian, Pala, Pauma Valley, Rancho Bernardo, Rancho Santa Fe, Santa Ysabel, Solana Beach, Valley Center, Warner Springs.

Note: Percentages may not total to 100 due to rounding.

Figure 1. HIV Disease Diagnosis Case Counts and Rates, San Diego County, 1980-2016[1].



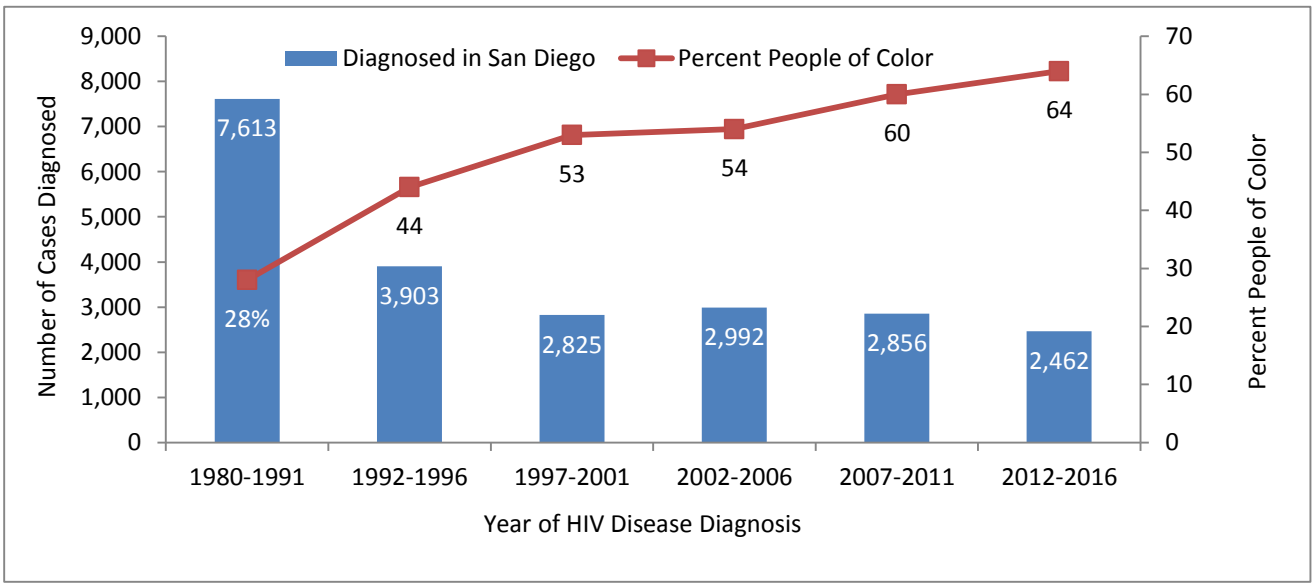
[1]HIV disease diagnosis, regardless of state of disease. This includes cases with a simultaneous HIV/AIDS diagnosis. HIV became reportable in April 2006.

Table 16. Age-Related Measures at HIV Disease Diagnosis and Race/Ethnicity Over 5-Year Time Periods, San Diego County, 1992-2016.

		Race/Ethnic Group				
Time Period	Age-Related Measure	Black	Hispanic/ Latino	White	Other[1]	All Cases
1992-1996	Mean age, years	35	32	37	33	35
	Age of oldest case, years	85	74	88	69	88
	Youngest case, years	<1	<1	<1	<1	<1
	Total number of cases	564	994	2,199	146	3,903
1997-2001	Mean age, years	35	35	38	34	36
	Age of oldest case, years	71	78	77	56	78
	Youngest case, years	<1	<1	1	<1	<1
	Total number of cases	415	933	1,341	136	2,825
2002-2006	Mean age, years	35	35	38	33	36
	Age of oldest case, years	71	73	84	65	84
	Youngest case, years	11	<1	<1	18	<1
	Total number of cases	372	1,103	1,372	145	2,992
2007-2011	Mean age, years	34	35	39	35	36
	Age of oldest case, years	68	83	74	84	84
	Youngest case, years	<1	<1	<1	18	<1
	Total number of cases	400	1,124	1,135	197	2,856
2012-2016	Mean age, years	34	34	40	33	36
	Age of oldest case, years	75	88	81	71	88
	Youngest case, years	2	<1	9	<1	<1
	Total number of cases	297	1,067	892	206	2,462

[1]Includes Asian, Pacific Islander, American Indian, Alaska Native, multiple races, and unknown.
Note: HIV became reportable in April 2006.

Figure 2. HIV Disease Diagnosis Case Counts and Percentages of People of Color[1] Cases by Time Period, San Diego County, 1980-2016.



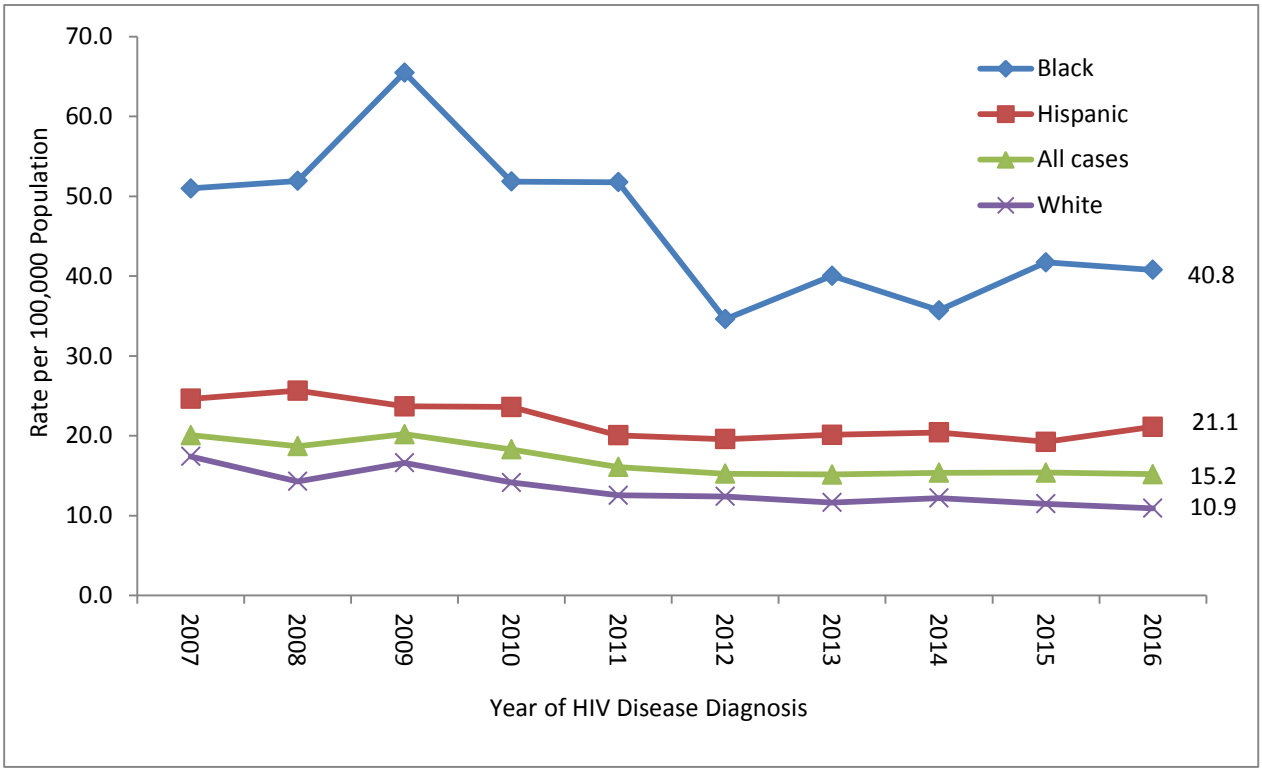
[1]People of Color included anyone who did not identify as Non-Hispanic White.
Note: HIV became reportable in April 2006.

Table 17. HIV Disease Diagnosis Case Counts, Percentages, and Rates by Race/Ethnicity and Year of Diagnosis, San Diego County, 2007, 2012-2016.

	Year of HIV Disease Diagnosis																	
	2007			2012			2013			2014			2015			2016		
Race/Ethnicity	No.	(%)	Rate[1]	No.	(%)	Rate[1]	No.	(%)	Rate[1]	No.	(%)	Rate[1]	No.	(%)	Rate[1]	No.	(%)	Rate[1]
Asian/Pacific Islander	30	(5)	9.6	27	(6)	7.6	24	(5)	6.6	31	(6)	8.3	37	(7)	9.7	27	(5)	6.9
Black/African American	74	(12)	51.0	52	(11)	34.6	61	(13)	40.0	55	(11)	35.7	65	(13)	41.7	64	(13)	40.8
Hispanic/Latino	222	(37)	24.6	200	(42)	19.6	210	(43)	20.1	217	(44)	20.4	208	(41)	19.2	232	(46)	21.1
American Indian/ Alaska Native	6	(1)	40.7	4	(1)	---	1	(<1)	---	1	(<1)	---	3	(1)	---	2	(<1)	---
White	266	(44)	17.4	188	(39)	12.4	177	(37)	11.6	186	(38)	12.2	175	(35)	11.5	166	(33)	10.9
Total[2]	602	(100)	20.1	481	(100)	15.3	484	(100)	15.1	496	(100)	15.4	502	(100)	15.4	499	(100)	15.2

[1]Rates per 100,000 population. Rates not calculated for fewer than 5 cases.
[2]Percentages may not total to 100 due to rounding. Total included multiple races and unknown.
Note: HIV became reportable in April 2006. Included 2007 as a historical reference.

Figure 3. HIV Disease Diagnosis Rates by Race/Ethnicity, San Diego County, 2007-2016.



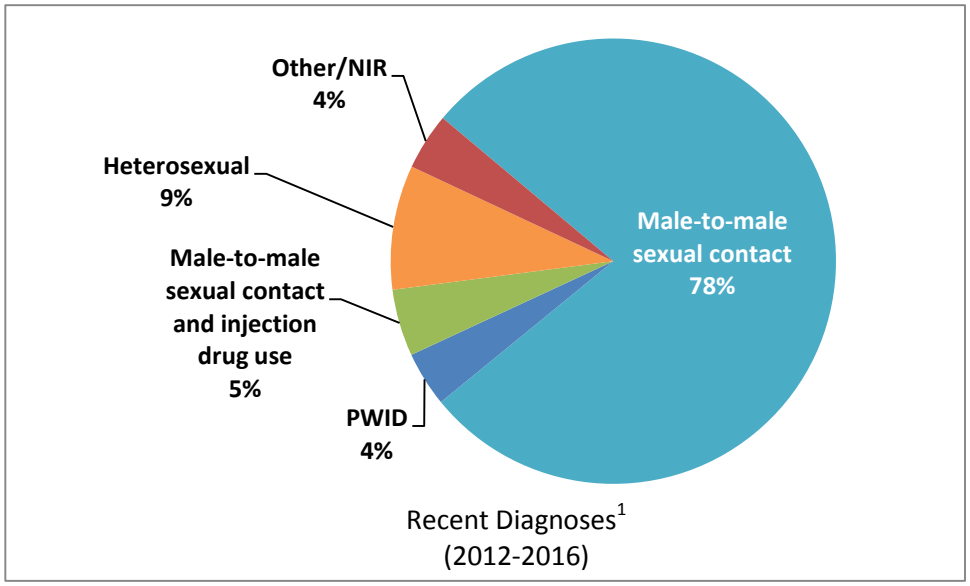
Note: HIV became reportable in April 2006.

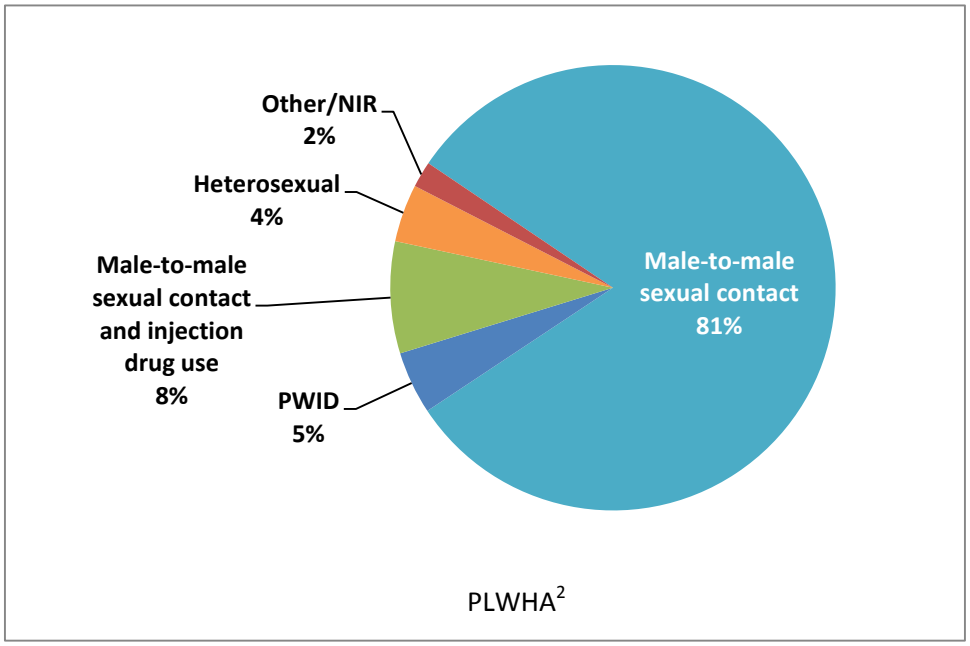
Table 18. HIV Disease Recent Diagnosis Case Counts and Percentages by HHSA Region at Diagnosis and Race/Ethnicity[1], San Diego County, 2012-2016.

	Race/Ethnicity									
	Black/ African American		Hispanic/Latino		White		Others[2]		Total	
HHSA Region	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Central	157	(15)	417	(39)	425	(39)	82	(8)	1,081	(100)
South	48	(10)	354	(74)	52	(11)	26	(5)	480	(100)
East	31	(13)	70	(30)	114	(48)	22	(9)	237	(100)
North Central	34	(10)	85	(26)	157	(48)	50	(15)	326	(100)
North Coastal	22	(11)	78	(39)	85	(43)	13	(7)	198	(100)
North Inland	5	(4)	60	(44)	58	(43)	13	(10)	136	(100)
Total[3]	297	(12)	1,067	(43)	892	(36)	206	(8)	2,462	(100)

[1]For cases residing in San Diego County at HIV disease diagnosis.
[2]Includes Asian, Pacific Islander, American Indian, Alaska Native, multiple races, and unknown.
[3]Includes four cases (0.2%) who have unknown HHSA region.
Note: Percentages may not total to 100 due to rounding.

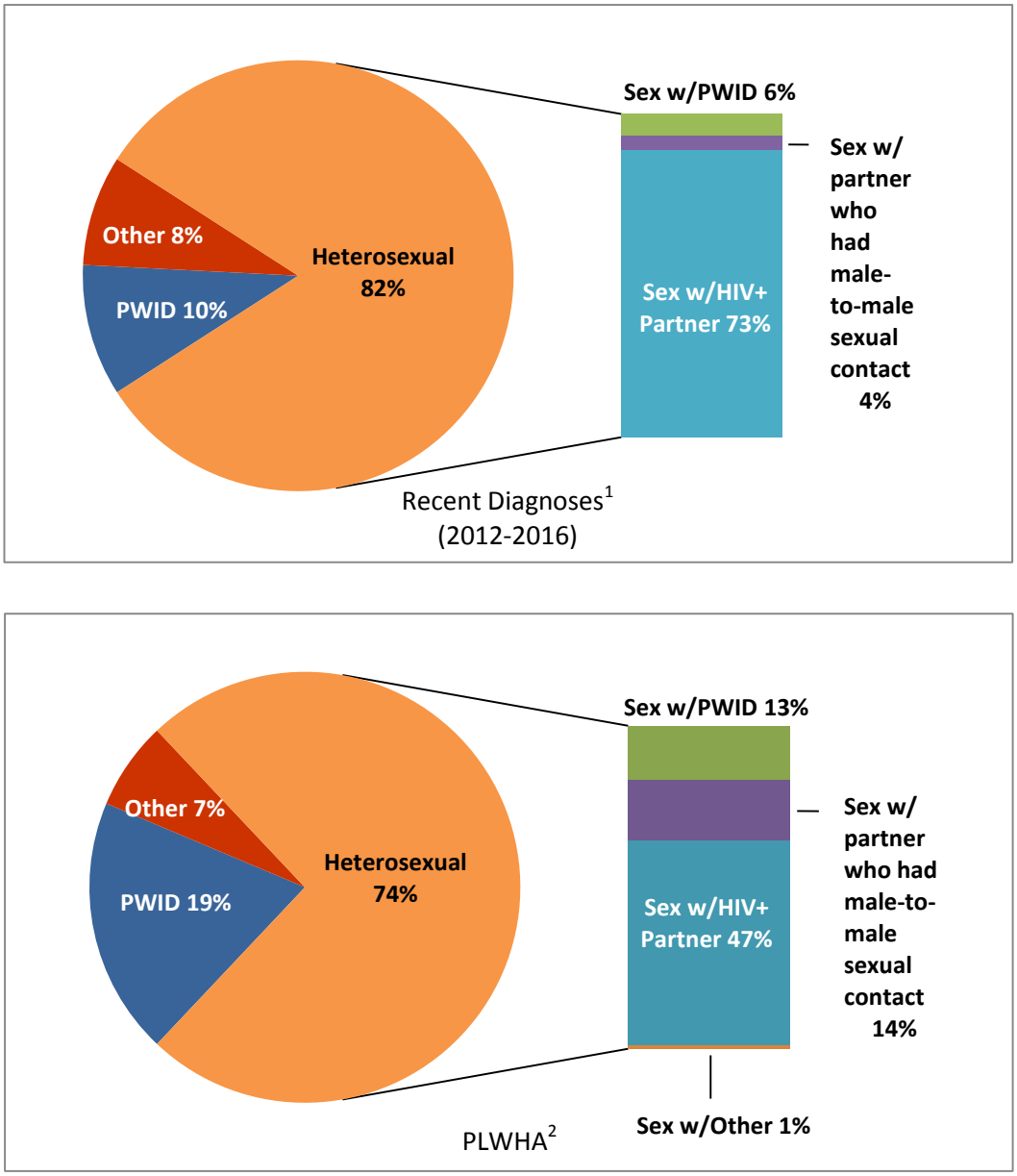
Figure 4. Mode of Transmission for Adult Male HIV Disease Diagnoses and PLWHA, San Diego County, 2012-2016.





[1]Based on first year of diagnosis; HIV diagnosis when known.
[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.
Note: 'Other' includes hemophilia, transfusion/transplant exposure and no identifiable risk.

Figure 5. Mode of Transmission for Adult Female HIV Disease Diagnoses and PLWHA, San Diego County, 2012-2016.



[1]Based on first year of diagnosis; HIV diagnosis when known.
[2]Of those currently known to be living in San Diego County through 12/31/2016, regardless of residence when diagnosed with HIV disease.
Note: 'Other' includes no identifiable risk. 'Sex w/Other' includes heterosexual partners with maternal transmission, blood product/tissue exposure, and no identifiable risk.

Figure 6. "Late Testers": Percentage of HIV Disease Diagnoses Progressing to AIDS in Less than 12 Months By Race/Ethnicity, San Diego County, 2010-2015.

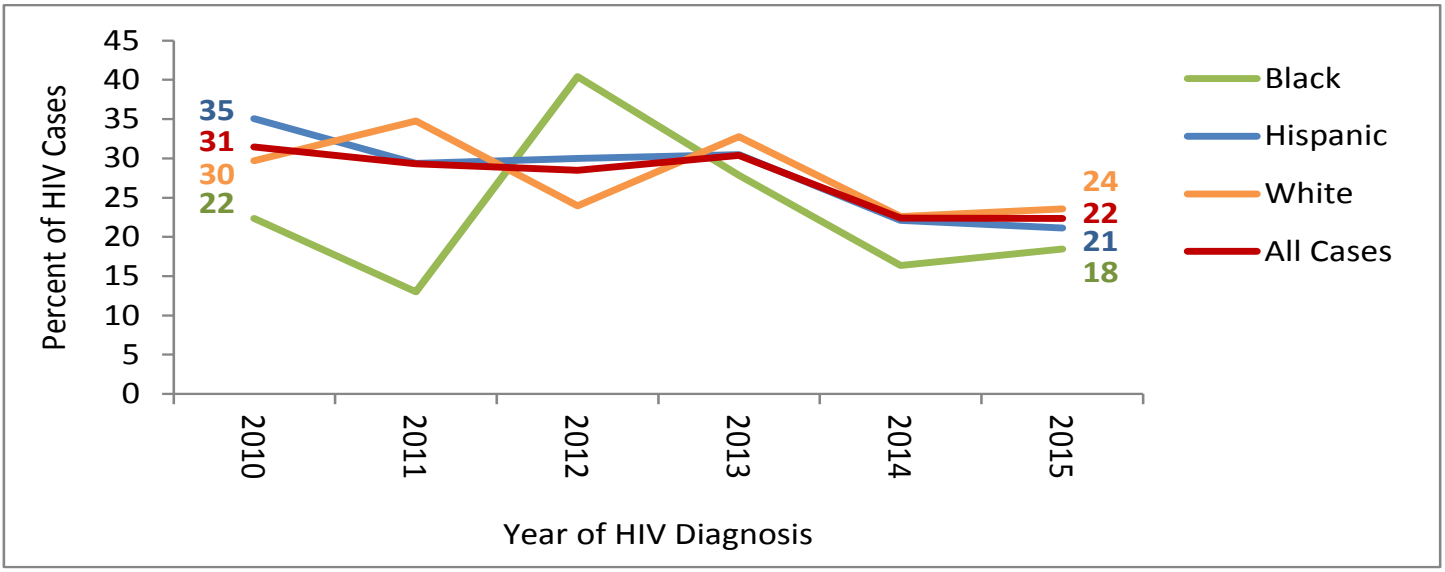
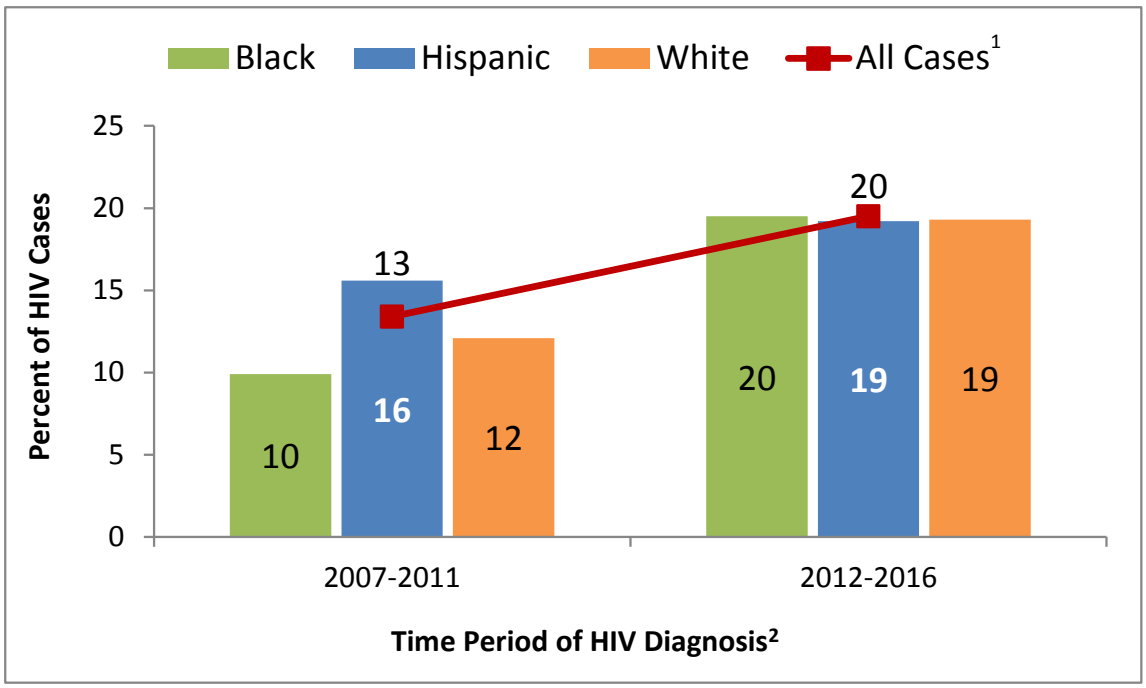
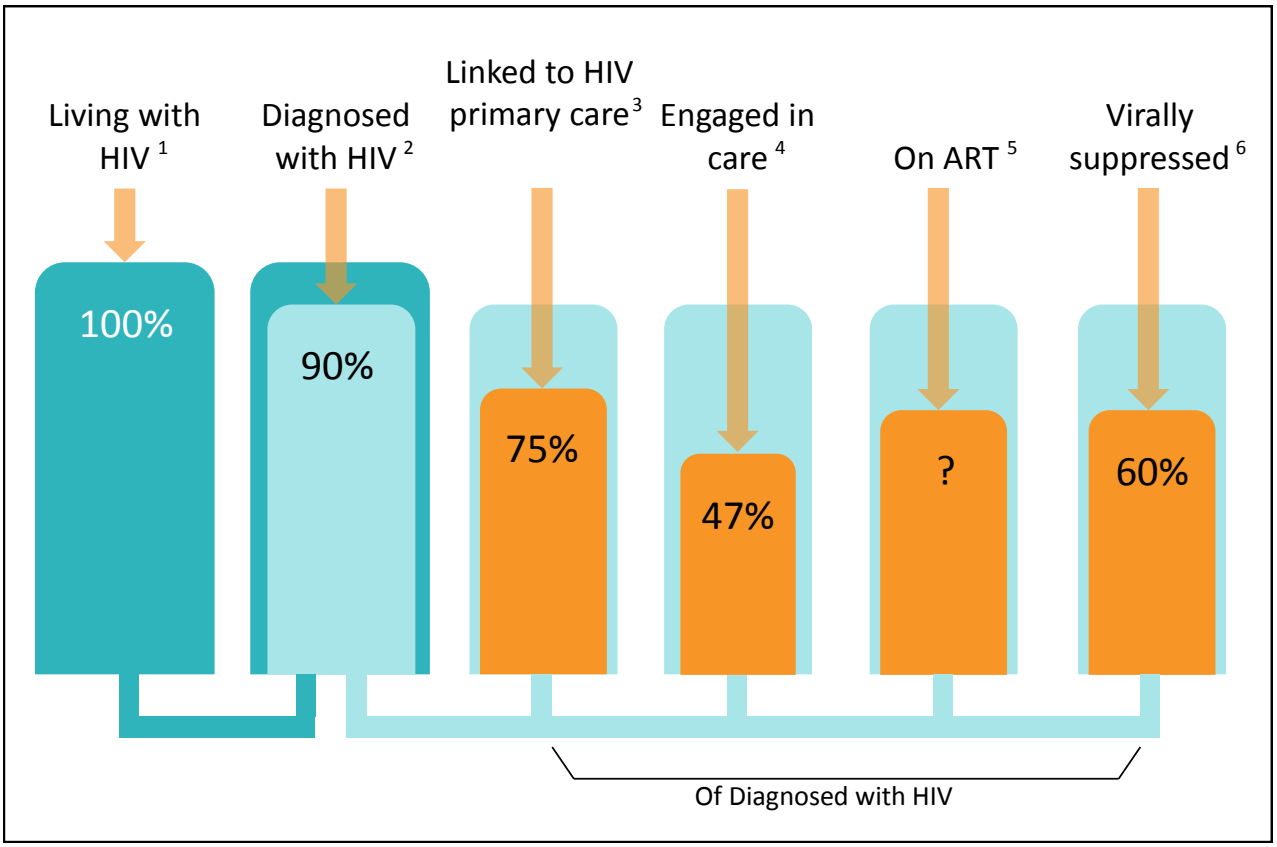


Figure 7. "Simultaneous Diagnosis": Percentage of HIV Diagnoses Progressing to AIDS in Less than 30 Days by Race/Ethnicity and 5-Year Time Periods, San Diego County, 2007-2016.



[1]All Cases includes Asian, Pacific Islander, American Indian, Alaska Native and unknown.
[2]HIV reporting began in April 2006 so no previous time periods are included.

Figure 8. HIV Care Continuum, San Diego County, 2016.



[1]Includes all people living with HIV infection, diagnosed and undiagnosed through 12/31/2016.
[2]Includes all people diagnosed with HIV infection through 12/31/2015 and living through 12/31/2016, regardless of stage of disease.
[3]Of persons diagnosed with HIV infection, defined as persons having had at least one CD4 or viral load test between 1/1/2016 and 12/31/2016.
[4]Of persons diagnosed with HIV infection, defined as persons having had two or more CD4 or viral load tests at least 90 days apart between 1/1/2016 and 12/31/2016 (also referred to as 'retained in care').
[5]Of persons diagnosed with HIV infection, defined as persons having received a prescription for Antiretroviral Therapy (ART) between 1/1/2016 -12/31/2016. No data available for San Diego County.
[6]Of persons diagnosed with HIV infection, defined as persons with virologic suppression (<200 copies/mL) at most recent viral load test between 1/1/2016-12/31/2016.

III. DATA SOURCES

California Department of Public Health, Office of AIDS, California HIV Surveillance Report — 2015. Published October 2017. Accessed December 11, 2017.

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Centers for Disease Control and Prevention. Revised Case Surveillance Definition for HIV Infection — United States, 2014. https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm. Accessed March 22, 2018.

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Centers for Disease Control and Prevention. HIV Surveillance Report, 2016; vol. 28. http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html. Published November 2017. Accessed December 11, 2017.

San Diego Association of Governments, population data, release dates June 12, 2003 and March 15, 2017. Accessed December 11, 2017.

IV. APPENDICES

Appendix 1. Glossary

Adult/Adolescent Cases—AIDS cases who were at least 13 years of age at time of diagnosis.

Case Fatality Rate—The number of deaths due to a disease within a specified time period divided by the number with that disease in the same time period, multiplied by 100.

Incidence —The total number of new cases of a disease occurring within a specified period of time.

Incidence Rate—The number of cases of a disease per specified time period divided by the population at risk, often expressed per 100,000. Incidence rates are useful for comparison of selected factors to demonstrate severity of the epidemic among different ages, gender, and racial/ethnic groups.

Living Cases—Cases are assumed to be alive if documentation of death has not been received. The lag in reporting of death may result in over stating the number of living cases.

Mode of Transmission—The way in which a communicable disease is passed from one person to another. In describing HIV/AIDS cases, it identifies how an individual may have been exposed to HIV, such as having injected drugs, or homosexual or heterosexual contact.

Pediatric Cases—HIV and AIDS cases who were under the age of 13 years at the time of diagnosis.

Prevalence—The number of all living cases (previously and newly diagnosed) of a given disease within a specified time period.

Prevalence Rate—The number of all living cases (previously and newly diagnosed) of a given disease within a specified time period divided by the population at risk, often expressed per 100,000. Prevalence rates are useful for comparison of selected factors to demonstrate the severity of the epidemic among individuals of different ages, gender, and racial/ethnic groups.

Probability—The likelihood of an event (e.g., two variables being related to each other).

Significant—meaningful. In statistics, this refers to a result that produces a p-value result below some set value (generally 0.05), indicating an outcome/event is unlikely to be due to chance.

Statistics—The science, art and technique of collecting, summarizing, analyzing and interpreting information that is subject to chance or systematic variations. Biostatistics is the sub-discipline dealing with biological systems, such as humans.

Surveillance—The systematic and ongoing collection, collation and analysis of health-related information that is used to identify health problems and trends.

Year of Diagnosis—The year in which an individual met the CDC case definition for HIV or AIDS.

Year of Report—The year in which an HIV/AIDS case is reported to the Health and Human Services Agency.

Appendix 2. HIV/AIDS Reporting—Reliability and Limitations

Individuals with HIV or AIDS are required to be reported to the HHSA pursuant to California Code of Regulations, Health & Safety Statutes, Title 17, Section 2643.5 and 2500. Reports come from physicians, other health care providers, hospitals, and clinics via HIV/AIDS Case Report forms. A San Diego County case is an individual diagnosed with HIV or AIDS, while residing in San Diego County.

Active verification of cases and internal tests of the data increase the reliability of the data.

The HIV and AIDS case data used to generate reports may have several limitations as listed below:

1. *Under-reporting of cases* - HIV and AIDS cases for which notification to the Epidemiology Program is delayed results in "under-reporting". It is likely that cases diagnosed in 2016 will continue to be reported in 2017. For consistency, this report is based on data through mid-year. In this case through June 30th, 2017, thus the report will not contain cases reported through December 31, 2017.

2. *Diagnosis date versus report date* - Reporting delays impact the available data. Those cases diagnosed in 2015, for example, may not have been reported to the Health and Human Services Agency until 2016 or later. It is likely that cases diagnosed in 2016 will continue to be reported in 2017. See *Appendix 1*, G*lossary* for Year of Diagnosis and Year of Report.

3. *Collection tools* - While information on a variety of variables is collected, it is still limited. Data on income or specific drug of choice are not collected, for example. The data collected are limited and reflect the quality of data submitted by the reporting facility.

4. *Non-resident cases* - Persons with HIV or AIDS diagnosed elsewhere and relocating to San Diego County after diagnosis, are represented in the People Living with HIV/AIDS (PLWHA) data for the county. Persons receiving medical care or other services in San Diego County while residing outside the county, are not reflected in these data.

5. *Asian/Other Category* - Asian/Pacific Islander and Native American racial/ethnic groups are sometimes grouped into one category, Asian/Other, to allow for adequate case numbers for analysis**.**

6. *Confidentiality* - Charts and graphics with small cell sizes (under 5) may not be described in detail where identification of persons may occur.

Appendix 3. Reporting HIV and AIDS Cases for Health Care Providers

Who must report HIV and AIDS cases?

Every health care provider knowing of or in attendance on a case or suspected case of a HIV or AIDS is required to make a report. (California Code of Regulations, Health & Safety Statutes, Title 17, Section 2643.5 and Section 2500).

When is HIV Reported?

A case is reported when a patient has a test result indicative of HIV infection. This includes:

- Confirmed positive HIV antibody test
- Any viral load test
- P24 antigen test
- Viral isolation test

Providers should report all individuals newly positive for HIV, as well as those the health care provider (ordering the test) has never reported and has no verification that the individual has already been reported with HIV. If an individual meets the case definition for AIDS, they are reported again including the AIDS-defining condition.

The provider should report a case even if the patient may have been reported by another provider. This helps ensure complete case capture, which is critical for local prevention and treatment funding. Health care providers are required to complete a report within 7 days of learning of the HIV test.

When is AIDS Reported?

When an individual is diagnosed with one or more of the AIDS defining conditions listed below, his or her care provider is required to report the case to the local health department within 7 days of the diagnosis (for HIV infected individuals, definitive or presumptive):

- CD4+ T-lymphocyte count <200 mL/mm^3
- Candidiasis of the bronchi, trachea, or lungs
- Candidiasis, esophageal
- Cervical cancer, invasive
- Coccidioidomycosis, disseminated or extra-pulmonary
- Cryptococcosis, extra-pulmonary
- Cryptosporidiosis, chronic intestinal
- Cytomegalovirus disease
- Cytomegalovirus retinitis
- Encephalopathy, HIV-related
- Herpes simplex: chronic ulcers or bronchitis pneumonitis or esophagitis
- Histoplasmosis, disseminated or extrapulmonary
- Isosporiasis, chronic intestinal
- Kaposi's Sarcoma
- Lymphoma, Burkitt's
- Lymphoma, immunoblastic
- Lymphoma, primary in the brain
- *Mycobacterium avium* complex or *M. kansasii*, disseminated or extrapulmonary
- *Mycobacterium tuberculosis*, any site
- *Pneumocystis jirovecii* pneumonia
- Pneumonia, recurrent
- Progressive multifocal leukoencephalopathy
- *Salmonella* septicemia, recurrent
- Toxoplasmosis of the brain
- Wasting syndrome due to HIV

The pediatric AIDS case definition (children 12 years of age and younger) includes all of the above indicator diseases except pulmonary *Mycobacterium tuberculosis*, recurrent pneumonia, cervical cancer and CD4+ T-lymphocyte counts <200 mL/mm^3. Pediatric HIV cases may be diagnosed with AIDS if recurrent bacterial infections are seen. Recently, age-related CD4 cut-off levels have been specified for pediatric AIDS case definition. See Revised Surveillance Case Definition for HIV Infection– United States, 2014 .

The original case definition of AIDS was established by the Centers for Disease Control and Prevention (CDC) in 1981. Additional conditions and diseases were added in 1985, 1987, 1993, and 2014. All case

definitions and revisions have been published in the CDC publication entitled 'Morbidity and Mortality Weekly Report' (MMWR). For the current case definition please see Revised Surveillance Case Definition for HIV Infection– United States, 2014 .

What information is required to be reported?

Reports of HIV and AIDS cases to the local health department shall minimally include: name, address, telephone number, full Social Security Number, racial/ethnic group, gender, date of birth, mode of transmission information, diagnosis (HIV or AIDS) and date of diagnosis. In addition, name, address, and phone number of the person or facility making the report should be provided. Laboratory values, the accession number for those labs, and the name of the laboratory performing those labs should be included

The Epidemiology Program specifically, and the County in general, is required by law to protect the privacy of any individual reported with HIV or AIDS.

How should a report be made?

Providers can submit a confidential case report form available from County of San Diego, Health and Human Services Agency. Forms can be sent to:

Samantha Tweeten, Ph.D., M.P.H.
Senior Epidemiologist
Epidemiology Program
Epidemiology and Immunizations Services Branch
3851 Rosecrans Street, P577
San Diego, CA 92110
(619) 692-8505

Providers also have the option of reporting cases by phone. To report a case or for any additional information, call the Epidemiology Program at **(619) 692 -8545**, or visit www.sdhivaids.org.

Why is reporting necessary?

California law requires reporting of diagnosed HIV and AIDS cases, and they specify what, when, where and how to report cases. Timely and accurate HIV/AIDS case reports provide all stakeholders with a better understanding of our local epidemic. Epidemiologists can monitor trends in populations being affected by HIV infection, project future numbers of AIDS cases, and provide information to those responsible for planning for future health care needs and prevention activities.

Failure to report in a timely manner may have an impact on current and projected funding needs. Funding formulas using data which represent under -reporting of HIV or AIDS cases may translate into under funded programs and services for those with HIV disease.

A summary of legislation related to HIV and AIDS case reporting, confidentiality, and surveillance activities supported by the California Code of Regulations is available by calling the Epidemiology Program at **(619) 692-8545**. For a copy of the regulations and more information on HIV/AIDS reporting, go to the California Department of Public Health, Office of AIDS homepage.

Additional information about reporting and HIV/AIDS in San Diego County may be found at:

www.sdhivaids.org

Appendix 4. Computing Rates, Rates by Racial/Ethnic Groups and Statistics.

Rates provide a better indication of the burden of disease for a given population than absolute numbers of cases; they allow populations of dissimilar sizes to be compared. Rates may be based on the population at large (for HIV or AIDS rates) or a subpopulation utilizing services (clients presenting for HIV Counseling and Testing for HCT rates) or individuals in a research study (sexually transmitted disease [STD] seroprevalence study).

Rate Calculation

Rates are usually given "per 100,000 population" by convention, to make the calculated number easier to compare. Some rates may use other multipliers for the population. For example, infant mortality is calculated per 1,000. A rate is calculated by dividing the number of individuals with a disease/condition in a given time period by the population size, multiplied by 100,000:

$$\frac{\text{Number with disease/condition}}{\text{Number at risk for disease/condition}} \times 100{,}000 = \text{Rate per } 100{,}000$$

For example, if 434 individuals were diagnosed with AIDS in 2001 and this was divided by the 2001 population size (2,864,442) and multiplied by 100,000, the result would be:

$$\frac{434}{2{,}864{,}442} \times 100{,}000 = 15 \text{ AIDS cases per } 100{,}000 \text{ county residents in } 2001$$

Rates by racial/ethnic groups were computed by dividing the number of individuals with HIV/AIDS from a particular racial/ethnic group by the number of that same racial/ethnic group in the population at large. For example, 46 Black/African Americans and 204 Whites were diagnosed with AIDS in 2005. Of the total cases diagnosed that year, 11% were Black/African Americans and 50% were Whites. Based only on the absolute numbers (46 and 204) or the percentages (11% and 50%), it would appear that Whites had a greater disease burden. Using rates allows us to compare the total burden of disease by taking into account population size. In 2005, there were 161,033 Black/African Americans residing in San Diego County and 1,574,617 Whites. Using the rate calculation formula above, the AIDS case rate per 100,000 is 29 for Black/African Americans and 13 for Whites. So the relative burden of AIDS on Black/African Americans is more than twice that for Whites.

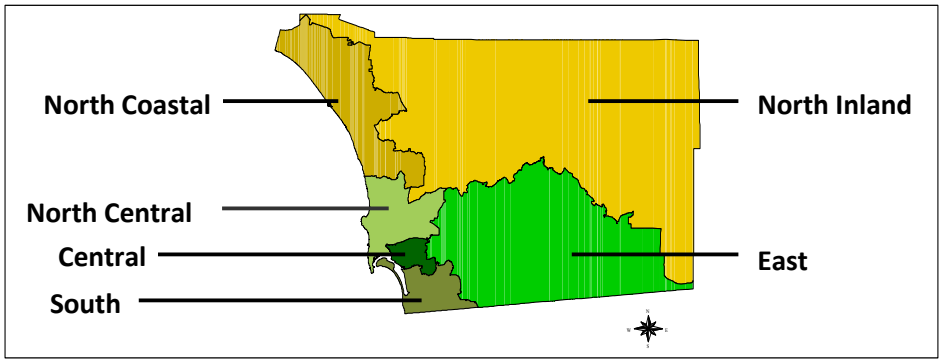
In San Diego County, rates are generally calculated using population estimates determined by the San Diego Association of Governments (SANDAG). Because the US Census is only assessed every ten years and the population of San Diego County is very dynamic, the SANDAG estimates allow for more up-to-date rates for comparison. SANDAG revises population estimates over time, as new information becomes available, and this may lead to revised rates.

Fluctuation in rates occurs over time and between groups. The smaller the number of events (i.e., cases), the greater the fluctuation. Statistical tests are often used to determine when one rate is different from another. One such test is used in this report, the 95% confidence interval. When rates are described here as 'statistically significant' or 'significant', the rates can be said to be different from each other with 95% confidence ($p<.05$).

Appendix 5. Health and Human Services Agency (HHSA) Regions of San Diego

San Diego County is divided into six Health and Human Services Agency regions by zip code. The following list presents the regions and the zip codes contained therein.

Figure 10:
HHSA Regions of
San Diego County



Central

Zip codes 92101, 92102, 92103, 92104, 92105, 92113, 92114, 92115, 92116, 92132, 92134, 92136, 92139, 92112, 92162, 92163, 92164, 92165, 92170, 92175, 92176, 92186, 92191, 92194, 92186, 92191, 92194, 92199, 92152, 92158, 92181, 92187, 92191, 92194, and 92195.

East

Zip codes 91901, 91905, 91906, 91916, 91917, 91931, 91934, 91935, 91941, 91942, 91945, 91948, 91962, 91963, 91977, 91978, 91980, 92019, 92020, 92021, 92040, 92071, 91944, 92090, 91946, and 92090.

North Central

Zip codes 92037, 92106, 92107, 92108, 92109, 92110, 92111, 92117, 92119, 92120, 92121, 92122, 92123, 92124, 92126, 92130, 92131, 92133, 92140, 92142, 92145, 92138, 92147,92166, 92168, 92171, 92172, 91990, 92193, 92196, 92177, and 92147.

North Coastal

Zip codes 92007,92008,92009,92013, 92014, 92024, 92051, 92052, 92054, 92055, 92056, 92057, 92067, 92013, 92058, 92068,92075, 92077, 92081, 92083, 92084, 92672, 92092, 92093, 92169, 92161, 92038, 92137, 92078, 92091, 92199, 92096, 92013, 92078, 92091, 92077, 92081, 92008, 92058, and 92096.

North Inland

Zip codes 92003, 92004, 92025, 92026, 92027, 92028, 92029, 92036, 92059, 92060, 92061 , 92064, 92065, 92066, 92069, 92070, 92082, 92086, 92127, 92128, 92129, 92259, 92390 , 92536, 92592, 92046,92198, 92190, and 92079.

South

Zip codes 91902, 91910, 91911, 91913, 91914, 91915, 91932, 91950, 92010, 92011, 92118, 91921, 91990, 92135, 92154, 92155, 92173, 92179, 91909, 91912, 92143, 91951, 91933, 92073, 92050, 92153, 92158, 91921, and 91990.

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