# HIV Surveillance Statistics 2018


County of Orange Health Care Agency, Public Health Services
HIV/AIDS Surveillance and Monitoring Program

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# HIV SURVEILLANCE STATISTICS 2018

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# INTRODUCTION

This report provides a summary of HIV/AIDS cases reported in Orange County through December 31, 2018. This report is intended to provide accurate and timely information that may result in reducing the spread and impact of HIV throughout Orange County. This report supplements the information given through the annual HIV/AIDS Fact Sheet, data requests, website reports and presentations, and oral presentations at public meetings.

## HIV/AIDS Surveillance Program

Orange County's HIV/AIDS surveillance is conducted through active surveillance to identify and collect information on cases of HIV and AIDS diagnosed at hospitals, clinics, private physician offices, laboratories, and community-based organizations (CBOs). Mandated reporters, including laboratories and health care providers, submit reports of HIV cases to the HIV/AIDS Surveillance and Monitoring Program. HIV/AIDS Surveillance Communicable Disease Investigators (CDIs) then contact and visit sites to facilitate the completion of HIV/AIDS case reports.

Case reports are entered into the County's HIV/AIDS registry. Until May 2009, the Orange County Health Care Agency's HIV/AIDS Surveillance and Monitoring Program maintained the Centers for Disease Control and Prevention's (CDC) HIV/AIDS Reporting System (HARS) registry. The HARS registry included all reported cases of HIV and AIDS who were residents of Orange County at the time of diagnosis. In June 2009, the California Office of AIDS (OA) transitioned to the electronic HIV/AIDS Reporting System (eHARS) and began maintaining data for the local health jurisdictions (LHJs). Because of this change, the Orange County HIV/AIDS Surveillance and Monitoring Program developed the HIV Case Registry (Registry), a local database containing information on individuals receiving care in Orange County, including those who reside outside of the county. Throughout the report, when discussing cases reported, this includes all persons diagnosed with HIV or AIDS while residing in Orange County, while when discussing Persons Living with HIV (PLWH) this includes all persons determined to be currently living in Orange County, regardless of their residence of diagnosis.

The Registry database is dynamic due to the nature of HIV reporting, and data extracted from the Registry is considered provisional. The database is updated as duplications are resolved and additional information is added. Therefore, a snapshot of the database is extracted at the end of each calendar year and is used to present data up until that point in time. The most current extraction will be the most up-to-date number for previous years; and therefore data reported each year will be different from that reported previously. The data in this report was extracted on January 31, 2019 to reflect HIV and AIDS cases diagnosed through December 31, 2018. This will be indicated with the note "Data as of January 31, 2019."

It is also important to note that while the Registry includes a comprehensive record of individuals who have been *diagnosed and reported by name* with HIV/AIDS, the Registry does not include individuals who have not been diagnosed with HIV and/or reported by name but are living with the disease. It is estimated that 12.3% of all individuals living with HIV are undiagnosed and do not know their status. Using the CDC recommended Estimated Back Calculation Methodology[1], as of December 31, 2018 there were an estimated 893 *undiagnosed* persons living with HIV/AIDS in Orange County who are not represented in this report.

## HIV

In an effort to better track the progression of the HIV/AIDS epidemic and conform to new guidelines presented by the CDC, this report will focus on HIV. The term HIV is used to describe the entire HIV spectrum, from initial HIV infection to advanced HIV (also known as AIDS). An AIDS (Acquired Immune Deficiency Syndrome) diagnosis is given to an HIV-positive person who has a CD4 count of less than 200 cells/µL *or* a history of an "AIDS-defining illness." The HIV data presented in this report combines all AIDS cases reported and all HIV cases reported by name since April 17, 2006. For comparison purposes and to more fully understand the HIV epidemic, Appendix I breaks down HIV by HIV (non-AIDS) and AIDS diagnoses, by year reported and diagnosed.

[1] The total number of persons estimated to be living with HIV is based on the CDC's calculation methodology updated in 2016. The calculation is the number of persons known to be living with HIV (6,369) divided by 0.877. The difference between this calculation (7,262) and 6,369 is the additional number of persons estimated to be living with HIV but are unaware of their diagnosis (893).

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# EXECUTIVE SUMMARY

Since reporting began (1981 for AIDS cases and 2006 for HIV cases), Orange County has reported 13,305 HIV cases to the Centers for Disease Control and Prevention (CDC) as of December 31, 2018. Of these, 8,792 have been diagnosed with AIDS and 5,201 have died.

## Chapter 1: HIV in Orange County

- Currently 6,369 people are living with HIV (PLWH) in Orange County as of December 31, 2018; this does not include individuals estimated to be living with HIV who have not been diagnosed. Using the CDC estimate[2] that 87.7% are estimated to be diagnosed, there are an additional 893 persons living with HIV in Orange County who do not know their status for a total of 7,262 PLWH. Of these:
  - 81.7% have been linked to care.
  - 66.4% are retained in care.
  - 62.8% are estimated to be receiving Anti-Retroviral therapy (ART).
  - 60.8% are virally suppressed.

- In 2018, there were 280 HIV (209 HIV (non-AIDS) and 71 AIDS) cases diagnosed in Orange County residents, for a rate of 8.7 cases per 100,000 Orange County population. This number is preliminary, as cases diagnosed in 2018 will continue to be reported in 2019 and beyond.

- By gender:
  - 5,520 PLWH are male (86.7%), 751 female (11.8%), and 98 (1.5%) are transgender male to female.
  - Of cases diagnosed in 2018, 248 (88.6%) were male, 27 (9.6%) female, and fewer than 10 were transgender male to female.

- By race/ethnicity:
  - 3,075 PLWH are Hispanic (48.3%), 2,318 PLWH are White (36.4%), 498 (7.8%) are Asian, 353 are Black (5.5%), 95 are more than one race (1.5%), 21 are Pacific Islander (0.3%), and fewer than 10 are American Indian/Alaskan Native (AIAN).
  - In 2018, 153 (54.6%) of cases diagnosed were Hispanic, 84 (30.0%) were White, 30 (10.7%) were Asian, and 11 (3.9%) were Black. There were fewer than 10 Pacific Islander, AIAN, or more than one race cases reported.

- By age:
  - The greatest percentage of PLWH are age 46-55 years (29.3%), followed by persons age 56 years and over (28.1%). Persons age 36-45 years comprise 21.5% of PLWH, followed by 16.3% age 26-35 years, 4.4% age 19-25 years, and 0.3% less than 19 years old.
  - Of cases diagnosed in 2018, 217 (77.5%) were age 19-45 years at diagnosis, 58 (20.7%) were age 46 years and over, and fewer than 10 were under age 19 years.

- By mode of exposure
  - The majority of PLWH are self-reported men who have sex with men (MSM) (4,668 or 73.3%), followed by persons who report heterosexual contact (769 or 12.1%), persons who report injection drug use (IDU) (399 or 6.3%), and MSM/IDU (300 or 4.7%). The remainder reported hemophilia, transfusion, pediatric mode of transmission, or did not report a mode of transmission.
  - In 2018, 188 (67.1%) of cases diagnosed self-reported MSM, followed by those who reported heterosexual contact (43 or 15.4%), IDU (19 or 6.8%), and MSM/IDU (10 or 3.6%). The remaining reported transfusion (in a foreign country) or did not report a mode of transmission.

[2] The total number of persons estimated to be living with HIV disease is based on the Centers for Disease Control and Prevention calculation methodology updated in 2016. The calculation is the number of persons known to be living with HIV disease (6,369) divided by 0.877. The difference between this calculation (7,262) and 6,369 is the additional number of persons estimated to be living with HIV disease but are unaware of their diagnosis (893).

- Progression to AIDS
  - There were 2,331 (52.5%) persons diagnosed with AIDS after 1995 who were concurrently diagnosed with HIV.
  - Persons with a higher percentage of concurrent diagnoses than the county overall were:
    - Males 2,048 (52.8%).
    - Pacific Islanders 5 (71.4%), followed by Asians 151 (58.1%), and Hispanics 1,190 (57.4%)
    - Perinatal exposure 13 (65.0%), followed by Heterosexuals 287 (57.3%), and MSM 1,659 (52.8%).
  - Of the persons diagnosed with AIDS after 1995, 546 (12.3%) were diagnosed within one year of their HIV diagnosis.
  - Persons with a higher percentage of transitioning to AIDS within one year of their HIV diagnosis than the county overall were:
    - Males 480 (12.4%).
    - Asians 43 (16.5%), followed by Hispanics 301 (14.5%).
    - MSM 393 (12.5%).

- HIV Survival
  - 3,206 (83.0%) of persons diagnosed with AIDS between 1996 and 2013 were still alive within five years of their AIDS diagnosis.
  - Persons with a lower survival rate than the county overall were:
    - Males 2,786 (82.9%), followed by females 377 (82.1%).
    - Whites 1,305 (80.9%), followed by Blacks 154 (79.8%).
    - IDUs 271 (70.6%).

- HIV Mortality
  - Deaths of persons diagnosed with HIV peaked in 1992 with 380 deaths, regardless of cause, occurring that year.
  - This coincides with the peak in deaths due to HIV/AIDS. In 1992 there were 301 HIV/AIDS deaths, for an age-adjusted death rate of 11.9 deaths per 100,000 Orange County population.

## Chapter 2: Geography of HIV in Orange County

- The most populous cities in Orange County are Santa Ana and Anaheim, with over 300,000 residents. These cities both have the largest numbers (1,351 and 978, respectively) of PLWH.

- The city with the third highest number of PLWH, and the fifth most populous is Garden Grove with 176,896 residents and 378 PLWH.

- In 2018, the diagnosis rate was 19.5 per 100,000 in Santa Ana, 13.7 per 100,000 in Anaheim, and 10.7 per 100,000 in Garden Grove.

- By gender:
  - 347 (91.8%) of PLWH in Garden Grove are male.
  - 848 (86.7%) of PLWH in Anaheim are male.
  - 1,146 (84.8%) of PLWH in Santa Ana are male.

- By race/ethnicity:
  - 1,021 (75.6%) of PLWH in Santa Ana are Hispanic, 210 (15.5%) White, 46 (3.4%) Black, and 55 (4.1%) Asian. There are fewer than 10 Pacific Islanders or AIAN, and 13 (1.0%) persons of more than one race.
  - 592 (60.5%) of PLWH in Anaheim are Hispanic, 231 (23.6%) White, 70 (7.2%) Black, and 67 (6.9%) Asian. There are fewer than 10 Pacific Islanders and AIAN, and 15 (1.5%) persons of more than one race.

- 196 (51.9%) of PLWH in Garden Grove are Hispanic, 74 (19.6%) White, 87 (23.0%) Asian, and 15 (4.0%) Black. There are fewer than 10 Pacific Islanders and AIAN, and fewer than five persons of more than one race.

- By Age:
  - Age 0-18 years:
    - Garden Grove does not have anyone under the age of 19 living with HIV in the city. There are fewer than 10 PLWH in Anaheim and Santa Ana.
  - Age 19-25 years:
    - Santa Ana has the youngest population with 75 (5.6%) PLWH between the ages of 19 and 25 years, followed by Anaheim with 35 (3.6%), and Garden Grove with 13 (3.4%).
  - Age 26-45 years:
    - Garden Grove has the greatest percentage of PLWH in this age range with 170 (45.0%) between the ages of 26 and 45 years, followed by Anaheim with 409 (41.8%), and Santa Ana with 534 (39.5%).
  - Age 46-55 years:
    - Anaheim has the oldest population with 309 (31.6%) diagnosed at age 46-55 years, followed by Santa Ana with 425 (31.5%), and Garden Grove with 113 (29.9%).
  - Age 56 years and over:
    - Santa Ana has the oldest population with 312 (23.1%) diagnosed at age 56 years and over, followed by Anaheim with 221 (22.6%), and Garden Grove with 82 (21.7%)

- By mode of exposure
  - 303 (80.2%) of PLWH in Garden Grove self-reported MSM, 35 (9.3%) heterosexual contact, 17 (4.5%) IDU, and 12 (3.2%) self-reported MSM/IDU.
  - 721 (73.7%) of PLWH in Anaheim self-reported MSM, 122 (12.5%) self-reported heterosexual contact, 60 (6.1%) through IDU, and 38 (3.9%) MSM/IDU.
  - 945 (69.9%) of PLWH in Santa Ana self-reported MSM, 166 (12.3%) self-reported heterosexual contact, 120 (8.9%) IDU, and 72 (5.3%) MSM/IDU.

## Chapter 3: Pediatric HIV in Orange County

- Between 1993 and 1997, there were 20 pediatric HIV cases diagnosed in Orange County, the peak five-year time period since the first pediatric case was diagnosed in 1983. The last year for a pediatric diagnosis was 2014. Overall, 81 pediatric cases have been diagnosed since reporting began.

- As of December 31, 2018, 49 children diagnosed before the age of 13 were living in Orange County.

- By gender:
  - Females account for 26 (53.1%) of PLWH who were diagnosed as a child; males 23 (46.9%).

- By race/ethnicity:
  - 23 (46.9%) of pediatric PLWH are Hispanic, 14 (28.6%) Black, fewer than 10 are White, Asian, Pacific Islander, AIAN, or more than one race.

- By age:
  - Fewer than 10 persons diagnosed as a child are currently still under the age of 13 or are currently age 13-18 years, and 35 (71.4%) are age 19 years and over.

- By mode of exposure
  - 40 (81.6%) of pediatric PLWH were infected perinatally. The remaining cases were through hemophilia, transfusion, or of unknown mode of transmission.

## Chapter 4: HIV Counseling and Testing

- The Orange County Health Care Agency provides support for HIV counseling and testing services in Orange County through the provision of HIV rapid test kits funded by the HIV Prevention Services Branch of the California Department of Public Health, Office of AIDS. Counseling and Testing (C&T) sites receiving kits include: 17th Street Testing and Treatment, Radiant Health Centers, the Asian Pacific AIDS Intervention Team (APAIT), and The LBGT Center Orange County.

- In 2018, 8,371 persons were tested at Orange County C&T sites. Of these, 82 (1.0%) tested positive for HIV.

- By gender:
  - In 2018, 72 (1.1%) males tested positive, while fewer than 10 females and transgender individuals (both male to female and female to male) tested positive. Fewer than 10 reported their gender as other or did not report their gender (unknown).

- By race/ethnicity:
  - In 2018, 44 (1.0%) Hispanics, 15 (0.8%) Whites, 14 (1.1%) Asians, and fewer than 10 Blacks, Pacific Islanders, AIANs, or persons of more than one race testing positive.

- By age:
  - In 2018, persons age 19-25 years and persons age 26-35 years had positivity of 24 (1.2%) and 29 (1.0%), respectively, while persons age 36-45 years had a positivity of 17 (1.0%). Persons age 46-55 and persons age 56 years and over had fewer than 10 positive tests.

- By mode of exposure:
  - In 2018, 58 (1.4%) persons who indicated they were MSM tested positive. There were fewer than 10 positive tests in the other categories of exposure.

## Chapter 5: HIV Testing in the Orange County Jails

- HIV Testing in Orange County jails began due to the expanded testing program funded by the State Office of AIDS (SOA). The goal of the project was to routinize HIV screening in medical settings, identify a positivity rate for newly identified positives of at least 0.1%, and link HIV-positive individuals to care and support services.

- In 2018, 9,286 persons were tested at Orange County jails. Of these, 45 (0.48%) tested positive for HIV. The number of those tested who were newly positive was 12, for 0.13% positivity.

- By race/ethnicity:
  - Since HIV testing began through the Expanded Testing Program in the Orange County jails, 44 (54.3%) of the newly positive were Hispanic, followed by 20 (24.7%) Whites, and 12 (14.8%) Blacks. There were fewer than 10 newly positive Asians or more than one race. There were no new positives in Pacific Islanders or AIANs.

- By mode of exposure:
  - Since HIV testing began through the Expanded Testing Program in the Orange County jails, 23 (28.4%) of the newly positive self-reported MSM, followed by 20 (24.7%) IDUs, 18 (22.2%) heterosexuals, and 15 (18.5%) MSM/IDU.

- Linkage to Care:
  - Since HIV testing began through the Expanded Testing Program in the Orange County jails, 74 (91.4%) of the newly positive were linked to care.

- Viral Suppression:
  - Since HIV testing began through the Expanded Testing Program in the Orange County jails, 26 (32.1%) of the newly positive were virally suppressed at the last viral load test in 2018.

## Chapter 6: National HIV/AIDS Strategy

- In July 2015, the White House released the National HIV/AIDS Strategy (NHAS) for the United States Updated to 2020, which outlined the goals for a national response to HIV in the United States. The goals include: 1) reducing new HIV infections; 2) increasing access to care and optimize health outcomes for persons living with HIV; 3) reducing HIV-related health disparities.

- Goal 1: Reducing New HIV Infections.
  - Objective 1: Increase the percentage of people living with HIV who know their serostatus to at least 90 percent.
    - 2015 Baseline: 91.0%
    - 2018 Outcome[3]: 87.7%
    - Target for Orange County (2021): 91.0%
  - Objective 2: Reduce the number of new HIV diagnoses by at least 25 percent.
    - 2015 Baseline: 300
    - 2018 Outcome: 280
    - Target for Orange County (2021): 210
  - Objective 2-1: Reduce the HIV transmission rate.
    - 2015 Baseline: 5.0
    - 2018 Outcome: 4.4
    - Target for Orange County (2021): 3.0
  - Objective 2-2: Increase the number of high risk populations who are on PrEP.
    - 2015 Baseline: 1,100
    - 2018 Outcome: 3,000
    - 2021 Goal: 5,160
  - Objective 3: Reduce the percentage of young gay and bisexual men who engage in HIV-risk behaviors.
    - Data is not available for Orange County and a target has not been developed.

- Goal 2: Increase Access to Care and Optimize Health Outcomes for PLWH.
  - Indicator 4: Increase the proportion of newly diagnosed persons linked to HIV medical care within one month of their HIV diagnosis to at least 65 percent.
    - 2015 Baseline: 38.7%
    - 2018 Outcome: 58.2%
    - Target for Orange County (2021): 65.0%
  - Indicator 5: Increase the percentage of persons with diagnosed HIV infection who are retained in HIV medical care to at least 90 percent.
    - 2015 Baseline: 77.0%
    - 2018 Outcome: 75.7%
    - Target for Orange County (2021): 90.0%
  - Indicator 6: Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80 percent.
    - 2015 Baseline: 66.1%
    - 2018 Outcome: 69.4%
    - Target for Orange County (2021): 80.0%

[3] The total number of persons estimated to be living with HIV is based on the Centers for Disease Control and Prevention calculation methodology updated in 2016. The calculation is the number of persons known to be living with HIV (6,369) divided by 0.877. The difference between this calculation (7,262) and 6,369 is the additional number of persons estimated to be living with HIV disease but are unaware of their diagnosis (893).

- Indicator 7: Reduce the percentage of persons in Ryan White HIV medical care who are homeless:
  - 2015 Baseline: 4.3%
  - 2018 Outcome: 3.9%
  - Target for Orange County (2021): 4.0%

- Indicator 8: Reduce the death rate among persons with diagnosed HIV infection:
  - 2015 Baseline[4]: 4.6
  - 2018 Outcome: 6.2
  - Target for Orange County (2021): 4.2

- Goal 3: Reduce HIV-Related Health Disparities.
  - Indicator 9: Reduce disparities in the rate of new diagnoses in the following groups:
    - Gay and bisexual men:
      - 2015 Baseline: 40.8
      - 2018 Outcome: 33.6
      - Target for Orange County (2021): 28.6
    - Black gay and bisexual men:
      - 2015 Baseline: 100.0
      - 2018 Outcome: 57.3
      - Target for Orange County (2021): 40.0
    - Hispanics:
      - 2015 Baseline[5]: 0.36
      - 2018 Outcome: 0.53
      - Target for Orange County (2021): 0.30
    - Transgender women:
      - This target has not been developed (population estimates not available for transgender women)
  - Indicator 10: Increase the percentage of individuals who are virally suppressed among the following groups:
    - Youth ages 13-24:
      - 2015 Baseline: 59.1%
      - 2018 Outcome: 64.7%
      - Target for Orange County (2021): 74.0%
    - Persons who inject drugs:
      - 2015 Baseline: 50.3%
      - 2018 Outcome: 50.6%
      - Target for Orange County (2021): 57.0%

[4] Death rate includes any cause of death. The updated death rate for 2015 is 7.3. This update is based on improved access to death data. There has been a decreased since 2015 updated baseline.
[5] The updated disparity rate for 2015 is 0.40. There has been an increase from the updated 2015 rate.

# Chapter 1: HIV in Orange County

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# CHAPTER 1: HIV IN ORANGE COUNTY

## Overall HIV Case Reporting:

In an effort to better track the progression of the human immunodeficiency virus (HIV) epidemic and conform to CDC guidelines, this report will focus on HIV. The terminology of HIV is used to describe the entire HIV spectrum, from initial HIV infection to advanced HIV, also known as Acquired Immune Deficiency Syndrome (AIDS). AIDS first became reportable in 1981; an AIDS diagnosis is given to an HIV-positive person who has a CD4 count of less than 200 cells/µL and/or an AIDS-defining illness. HIV infection, by name, without an AIDS diagnosis, first became reportable in California in 2006. The HIV data presented in this report combines all AIDS cases reported since 1981 and all HIV cases reported by name since 2006.

Since reporting began (1981 for AIDS cases and 2006 for HIV cases), Orange County has reported 13,305 HIV cases diagnosed through 2018 to the Centers for Disease Control and Prevention (CDC). Of these, 8,792 have been diagnosed with AIDS and 5,201 have died.

The data presented throughout this chapter can be found in tables at the end of the chapter. Tables include all data since reporting began even though data by year presented in this chapter only includes the previous 10 years (2009 to 2018).

## Continuum of HIV Care:

The CDC released an analysis[6] showing that only one in every seven of the 1.1 million Americans living with HIV have their infection under control. The Continuum of Care provides a visual "cascade" of individuals living with HIV. The CDC stages of the continuum include:

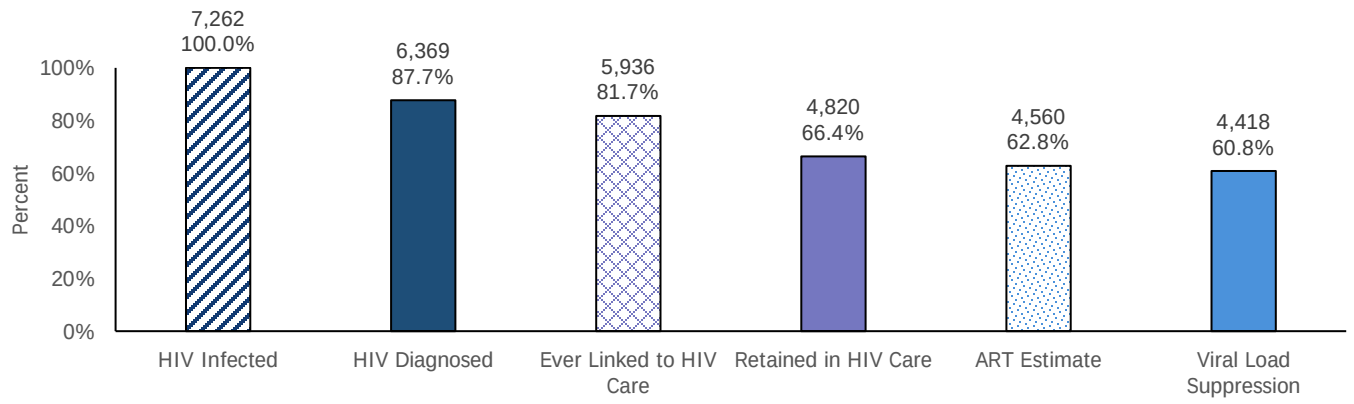
1. **Infected with HIV**: This is the CDC estimate that includes those who know their HIV status and those who are HIV-positive but unaware of their HIV status. This report does not include information on persons living with HIV/AIDS who have not been diagnosed;
2. **Diagnosed with HIV**: This is the percent of individuals who are HIV-positive and aware of their status compared to the estimate of all individuals living with HIV in Orange County;
3. **Ever Linked to HIV Care**: This is the percent of HIV-positive individuals who have been linked to HIV medical care (as indicated by having at least one viral load and/or CD4 count blood test after their diagnosis);
4. **Retained in HIV Care**: This is the percent of HIV-positive individuals who are currently in HIV care with at least two visits during a two year period (as indicated by having at least two viral load and/or CD4 count blood test). For persons diagnosed prior to 2018, the two year period is 2017 to 2018. For those diagnosed in 2018, the time frame is January 2018 through April 2019;
5. **Antiretroviral Therapy (ART) Estimate**: This is the percent of HIV-positive individuals who are taking antiretroviral medications. Because this data is not available for Orange County, a proxy measure has been used (persons with an undetectable viral load at their last test in 2018 or persons whose viral load declined between the last test in 2018 and the previous test);
6. **Viral Suppression**: This is the percent of individuals with a HIV viral load of less than 200 copies/mL at their last test in 2018.

**Figure 1.1** displays the HIV Continuum of Care in Orange County. Of the HIV infected, 87.7% are estimated to have been diagnosed (6,369), while 893 are estimated to be infected with HIV but unaware of their diagnosis. Of the total estimated to be infected (7,262)[7], 81.7% have been linked to care at some time after their diagnosis, 66.4% are currently retained in care, 62.8% are estimated to be receiving ART, while 60.8% had a viral load test result less than 200 copies/ml the last time they were tested in 2018.

[6] CDC. HIV in the United States: Stages of Care. http://www.cdc.gov/nchhstp/newsroom/docs/HIV-Stages-of-Care-Factsheet-508.pdf Released November 2014. Accessed June 23, 2015.

[7] The total number of persons estimated to be living with HIV is based on the Centers for Disease Control and Prevention calculation methodology updated in 2016. The calculation is the number of persons known to be living with HIV (6,369) divided by 0.877. The difference between this calculation (7,262) and 6,369 is the additional number of persons living with HIV but are estimated to be unaware of their diagnosis (893).

**Figure 1.1. HIV Continuum of Care, Orange County, 2018**



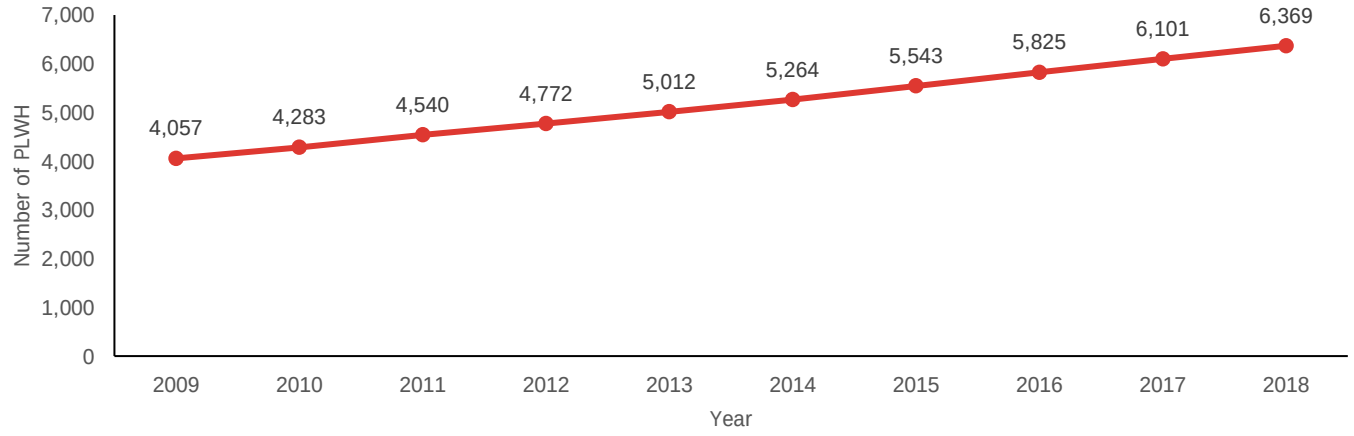

## Summary of HIV and AIDS Prevalence and Incidence:

The following section provides an overview of:

- **HIV Incidence:** Individuals with a diagnosis of HIV (non-AIDS) who resided in Orange County at time of diagnosis. This does not include persons now diagnosed with AIDS.
- **AIDS Incidence:** Individuals with a diagnosis of AIDS and resided in Orange County at time of diagnosis.
- **HIV Prevalence:** Persons living with HIV (PLWH) in Orange County, regardless of their residency at time of diagnosis.

**Figure 1.2** shows the number PLWH as of December 31 of each year between 2009 and 2018[8]. As of December 31, 2018, there were 6,369 persons diagnosed and living with HIV in Orange County.

**Figure 1.2. Persons Diagnosed and Living with HIV, 2009-2018**

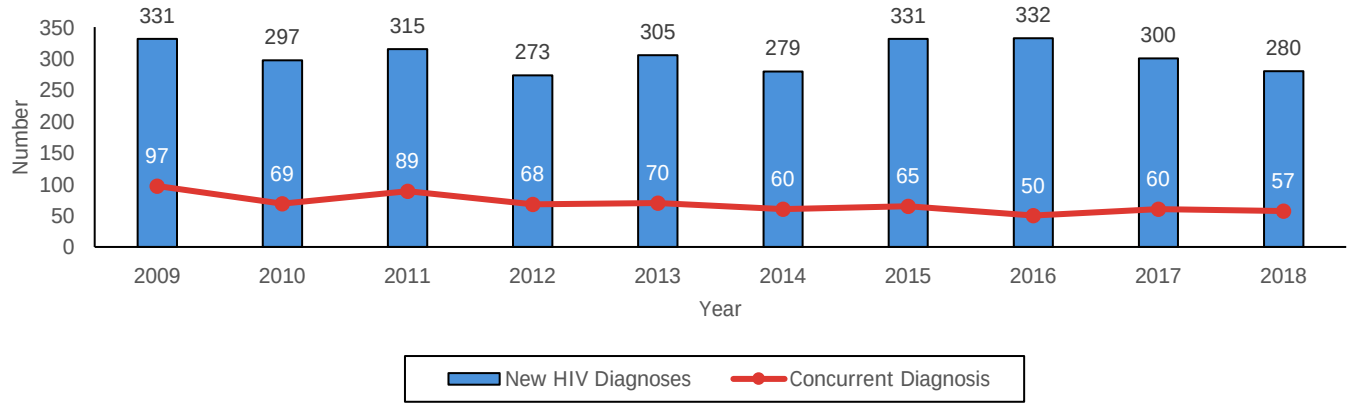



[8] The number of PLWH living in 2018 is based on the actual number living at the end of the year. Prior to 2018, an estimate was used based on how many of the 6,369 PLWH were living at the end of each of the previous years. The numbers shown for 2009-2017 may include people who were not living in Orange County at that time and may exclude people who were living in Orange County during 2009-2017 who were not living here at the end of 2018.

**Figure 1.3** shows the number of newly diagnosed HIV and concurrently[9] diagnosed AIDS cases reported in Orange County by year of diagnosis. In 2018, there were:

- 280 persons newly diagnosed with HIV.
- 57 persons concurrently diagnosed with AIDS indicating that the individual was living with HIV but unaware of their status for a significant amount of time.

**Figure 1.3. Number of New HIV Diagnoses and Number of Those Diagnoses Concurrently Diagnosed with AIDS by Year of HIV Diagnosis, 2009-2018**

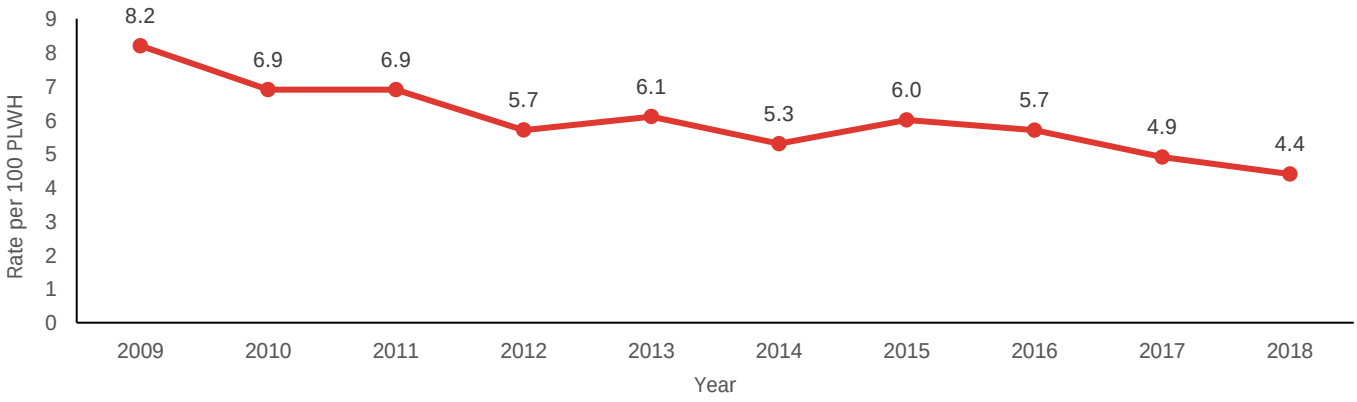



## Overall HIV Prevalence and Incidence:

**Figure 1.4** shows the rate of HIV transmission per every 100 persons living with HIV.

- Since 2009, the transmission rate has decreased 46.3%, from 8.2 to 4.4. A decrease in the transmission rate indicates that the amount of new HIV infections is not increasing despite the increase in the number of PLWH.

**Figure 1.4. HIV Transmission Rate per 100 Persons Living with HIV, 2009-2018**




[9] Concurrently diagnosed are persons who tested positive for HIV for the first time and had an AIDS defining condition (CD4 count below 200 cells/µL and/or a diagnosis of a disease that is an indicator condition for AIDS) in the same month and year.

# HIV by Gender

Persons diagnosed with HIV may self-report their gender in four different categories: (1) male; (2) female; (3) transgender male to female; or (4) transgender female to male. Due to the small number of transgender PLWH, unless indicated, transgender HIV cases are not included in the male or female category of figures in this section.

## *Prevalence by Gender:*

Of the 6,369 PLWH living in Orange County as of December 31, 2018, 5,520 are male, 751 female, and 98 transgender male to female.

**Figure 1.5** shows the number of PLWH as of December 31, 2018 compared to Orange County's 2018 population by gender. As shown:

- Males are disproportionately impacted and accounted for 86.7% of PLWH compared to 49.7% of the population.
- Females represent 11.8% of PLWH and 50.3% of the population.
- Transgender male to female[10] cases accounted for 1.5% of PLWH. However, Orange County population for transgender is not available to show the impact on that community.

**Figure 1.5. PLWH by Gender and 2018 Population, Orange County**

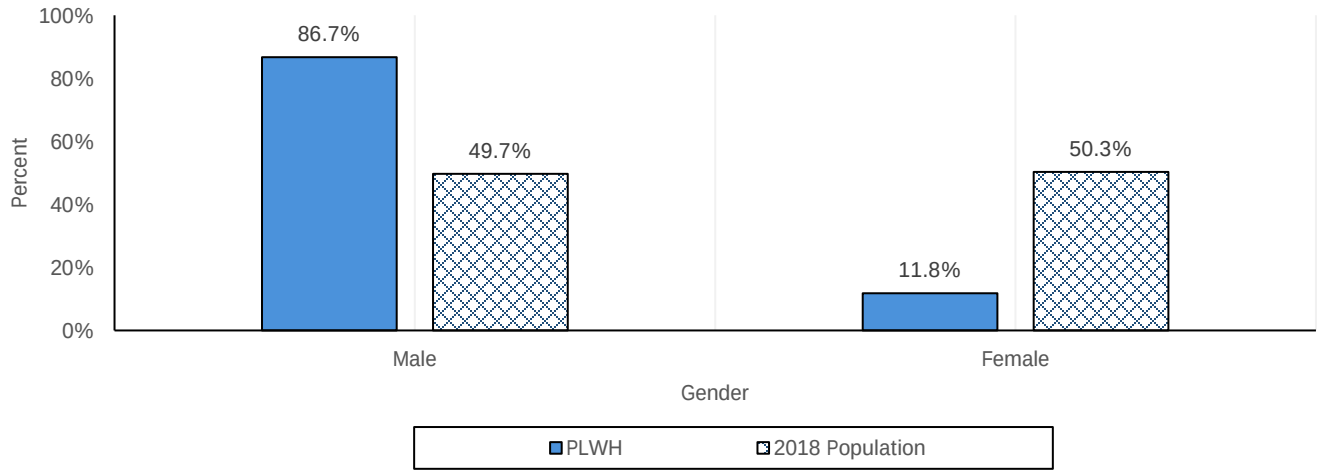
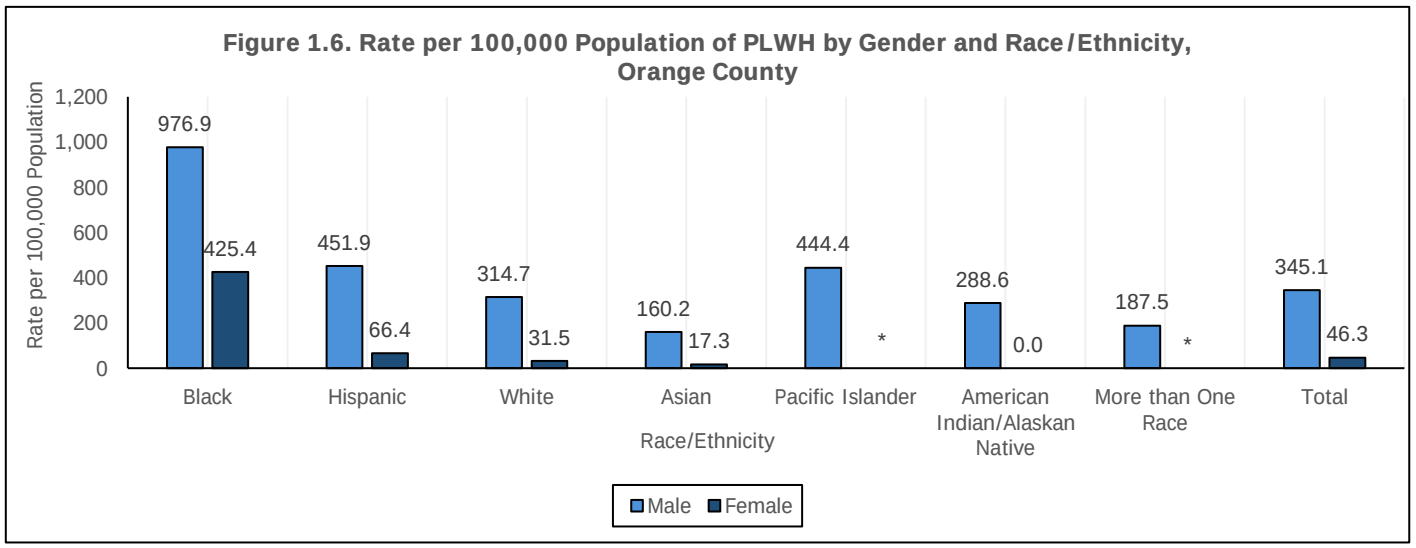



**Figure 1.6** shows the number of PLWH cases per 100,000 Orange County residents by gender and self-reported race/ethnicity[11]. As shown:

- Black males have the highest male rate while Black females have the highest female rate of HIV. The Black male rate is nearly three times that of all males. The Black female rate is over nine times that of all females.
- Hispanic males have the next highest male rate at 451.9 per 100,000, which is slightly higher than the Black female rate.
- Hispanic females have the second highest rate amongst females at 66.4 per 100,000.
- Asians have the lowest rate among males and females.

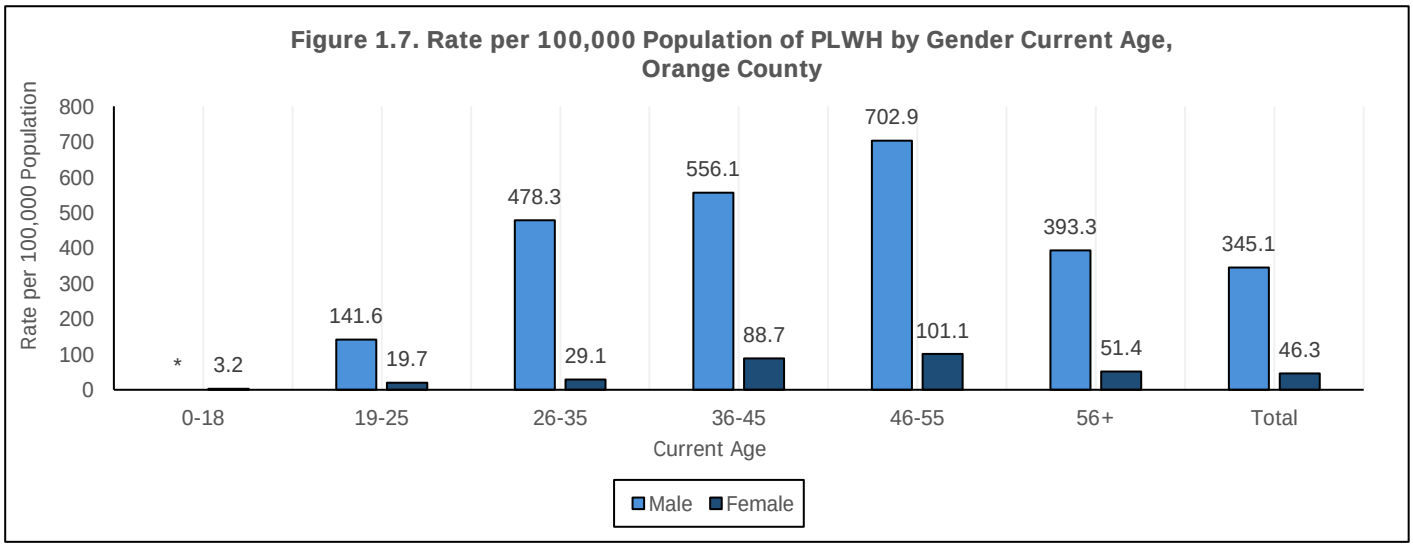
[10] As of January 31, 2019, there have been no diagnosed and reported HIV cases among transgender female to male in Orange County.
[11] See the HIV by Race/Ethnicity section on page 17 for description on race/ethnicity reporting.




*Fewer than 10 PLWH.

**Figure 1.7** shows the number of PLWH cases per 100,000 Orange County residents by gender and current age. As shown:

- Males and females age 46-55 years have the highest rate of PLWH.
- Males age 26-35 years, 36-45 years, 46-55 years, and 56 years and over have rates higher than all males (total).
- Females age 36-45 years, 46-55 years, and 56 years and over have rates higher than all females (total).

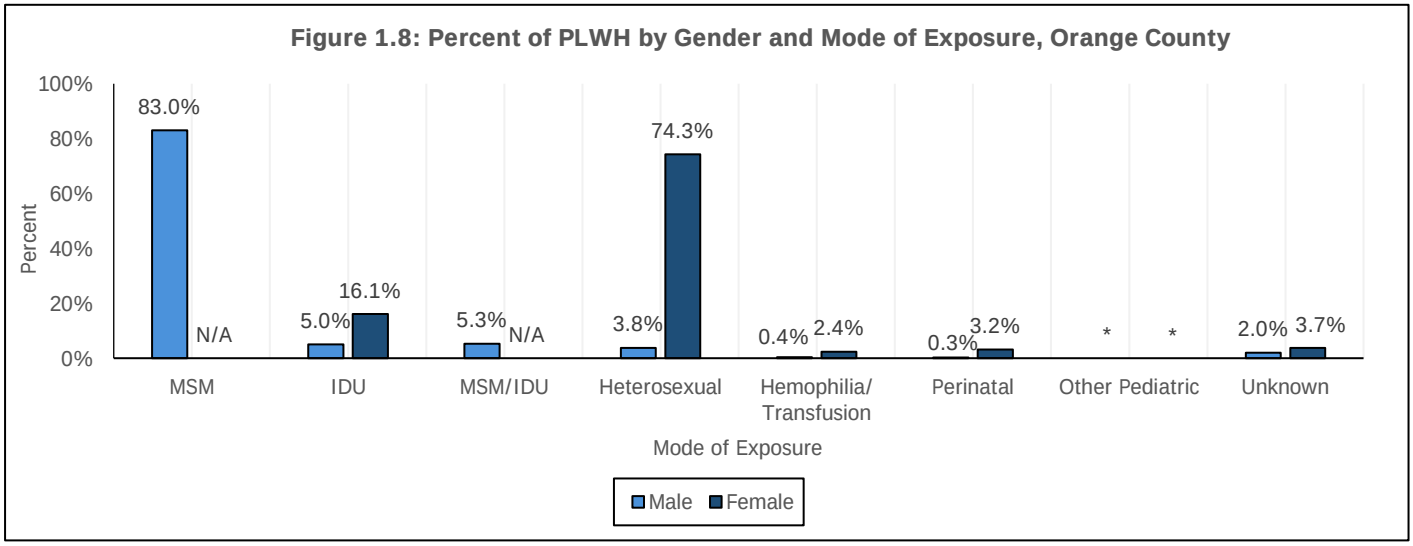



*Fewer than 10 PLWH.

**Figure 1.8** shows the distribution of PLWH by reported mode of exposure[12] among males and females.

- **Mode of Exposure among Males:** The vast majority (83.0%) of males living with HIV reported being exposed through men who have sex with men (MSM), followed by men who have sex with men who also injected drugs (MSM/IDU), those who have used injection drugs (IDU), and heterosexual contact.
- **Mode of Exposure among Females:** The majority (74.3%) of females living with HIV reported being exposed through heterosexual contact, followed by IDU (16.1%). Females were also more likely to be reported as having been exposed perinatally, by hemophilia/transfusion, or have an unknown mode of transmission.

[12] See the HIV by Mode of Exposure section on page 24 for description of mode of transmission reporting.

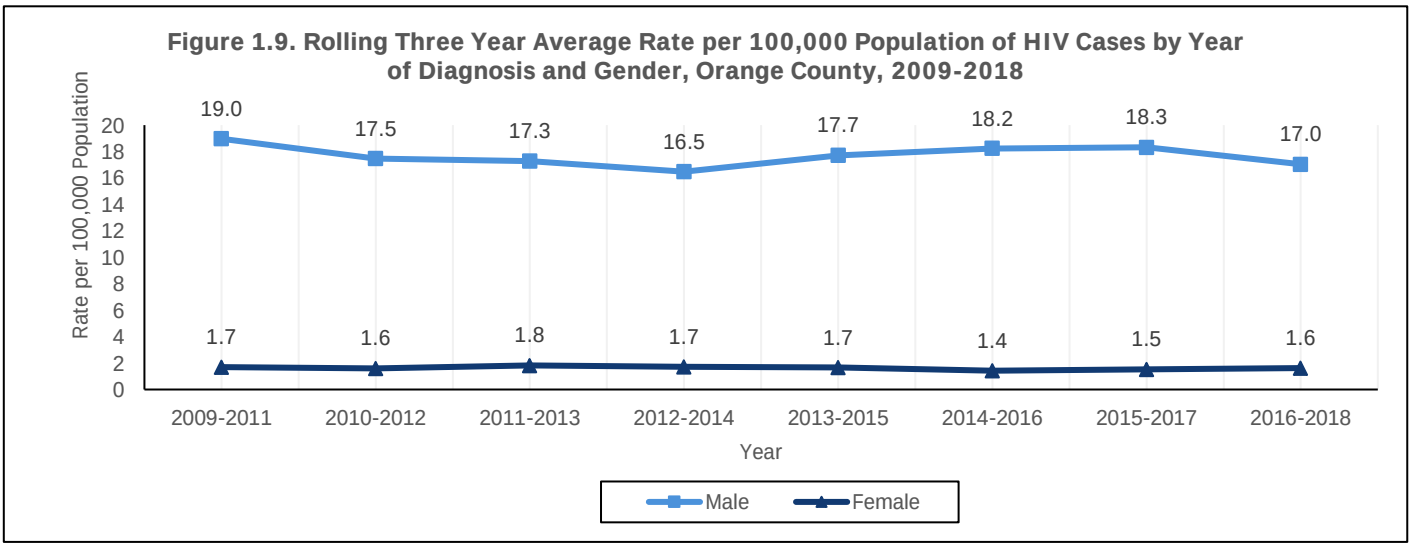



N/A: Mode of exposure not applicable to females.
*Fewer than 10 PLWH.

## *Incidence by Gender:*

Of the 3,043 new cases of HIV diagnosed in Orange County between 2009 and 2018, 2,729 were male and 258 were females. An additional 56 were diagnosed among transgender individuals.

**Figure 1.9** displays the three year average rate of HIV cases per 100,000 population by gender diagnosed each year between 2009 and 2018. As shown, case rates of HIV among males have been much higher than among females. The highest rate of HIV diagnosis occurred in 2009-2011 for males (19.0 per 100,000 population) and 2011-2013 for females (1.8 per 100,000 population). Rates have since declined.



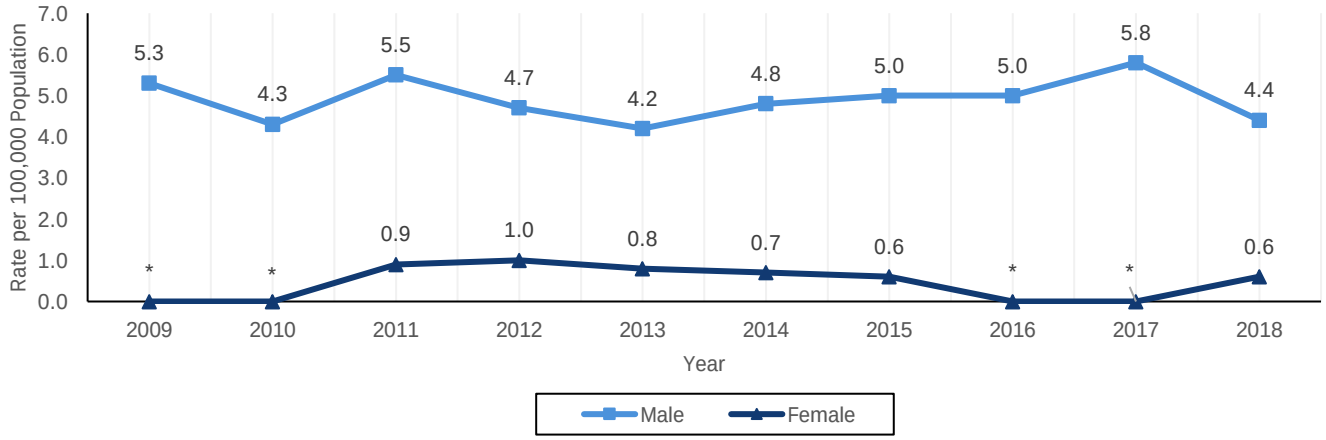

Transgender cases are excluded from Figure 1.9 because rates cannot be calculated for this population due to a lack of population estimates.

### *Mortality by Gender:*

**Figure 1.10** shows the death rate (due to any cause) per 100,000 population for the past 10 years by gender and year of death. Since the beginning of the epidemic in 1980, 4,731 males and 454 females diagnosed with HIV have died.

- **Death Rates among Males:** In the last 10 years, the highest death rate among males was in 2017, with 5.8 deaths per 100,000 males in Orange County.
- **Death Rates among Females:** The highest death rate among females in the last 10 years was in 2012, with 1.0 deaths per 100,000 females in Orange County.

**Figure 1.10. Death Rate per 100,000 Population Among Persons Diagnosed with HIV by Year of Death and Gender, Orange County, 2009-2018**




Transgender cases are excluded from Figure 1.10 because they have fewer than 10 deaths in any given year.
Deaths in 2018 are provisional due to reporting delays.
*Fewer than 10 deaths.

## HIV by Race/Ethnicity:

This section describes trends in HIV by race/ethnicity. HIV reporting complies with guidelines provided by the Federal Office of Management and Budget.[13] Persons diagnosed with HIV are asked to report their race and ethnicity. To determine ethnicity, persons are asked whether they identify as Hispanic. Individuals are then asked to choose one or more of the following race categories: (1) American Indian or Alaskan Native (AIAN); (2) Asian; (3) Black or African-American; (4) Native Hawaiian or Other Pacific Islander (Pacific Islander); and (5) White.

For the purposes of this report, persons who indicate that they are Hispanic are shown as "Hispanic" regardless of race chosen. The remaining racial categories capture the race of persons who indicate that they are not Hispanic. Individuals who are Black or African-American are referred to as "Black" throughout this report.

### *Prevalence by Race/Ethnicity:*

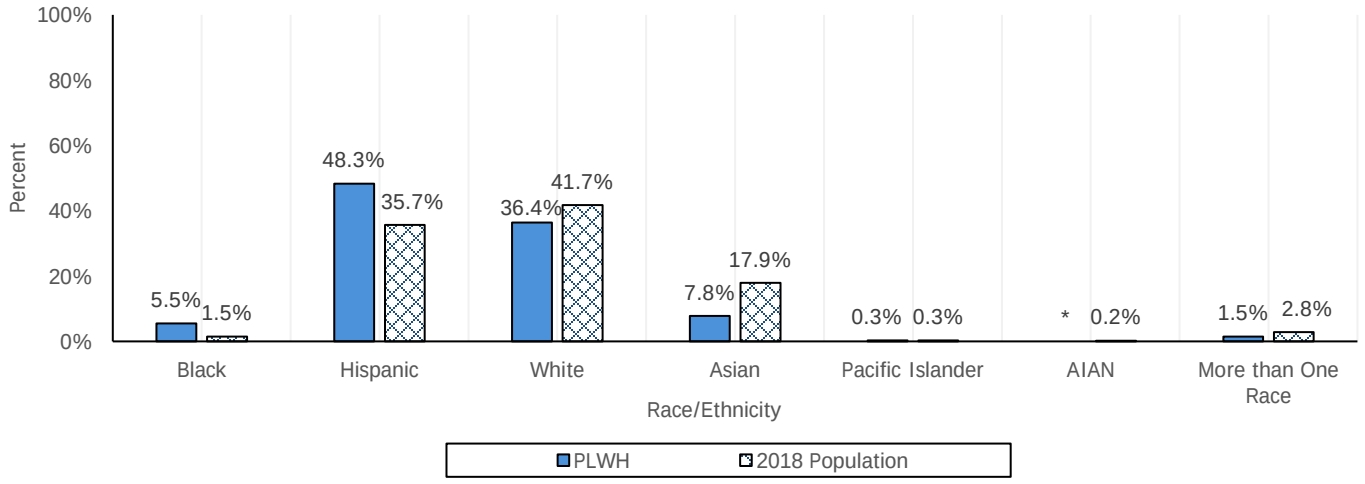
Of the 6,369 PLWH in Orange County as of December 31, 2018, 353 are Black, 3,075 are Hispanic, 2,318 are White, 498 are Asian, 21 are Pacific Islander, 95 are more than one race, and fewer than 10 are AIAN.

[13] Office of Management and Budget, Washington, D.C. Provisional Guidance on the Implementation on the 1997 Standards for Federal Data on Race and Ethnicity, December 15, 2000.

**Figure 1.11** compares PLWH by race/ethnicity to the 2018 Orange County population. As shown:

- Whites are slightly under-represented with 36.4% PLWH versus comprising 41.7% of the population.
- Blacks are over-represented with 5.5% PLWH versus comprising 1.5% of the population.
- Hispanics are over-represented with 48.3%, PLWH versus comprising 35.7% of the population.
- Asians are under-represented at 7.8% PLWH as compared to their representation in the population (17.9%).
- Pacific Islanders have equal representation in both PLWH and population (0.3%).
- Persons of more than one race are 1.5% of PLWH; 2.8% of the population.

**Figure 1.11. PLWH by Race/Ethnicity and 2018 Population, Orange County**



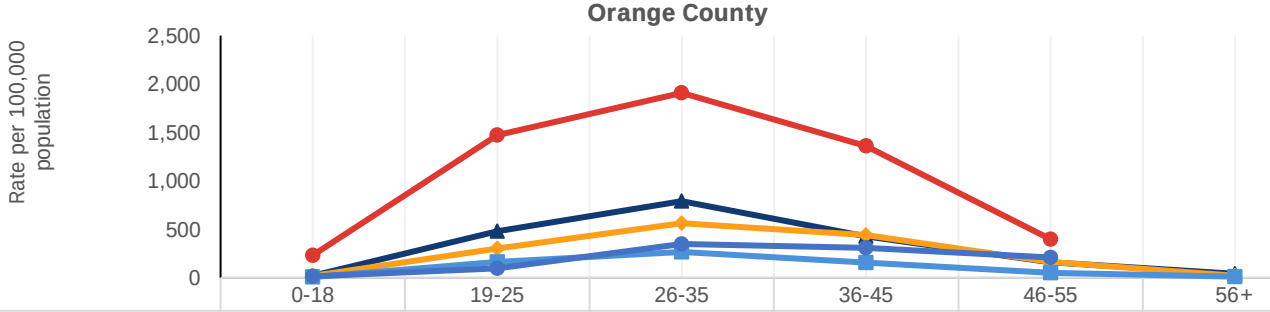

*Fewer than 10 PLWH.

**Figure 1.12** shows the rate of PLWH per 100,000 Orange County residents by race/ethnicity and current age. As shown:

- Blacks in all age groups have the highest rate of PLWH where there are ten or more PLWH (all but age category 56 years and over, as denoted by a blank box on the graph).
- Hispanics have the second highest rate per 100,000 population for PLWH age 0-18 years and 26-35 years.
- Whites have the second highest rate in persons 36-45 years and 56 years and over.
- Asians have the third highest rate in persons 56 years and over.
- Pacific Islanders actually have the second highest rate in ages 19-25 years and third highest in persons age 26-35 years, but are not displayed on the graph due to their small numbers in other age categories. AIAN rates are also not shown for the same reason. Numbers and rates can be seen in table 1.5 at the end of this section.

See Figure 1.6 on page 15 for case rates of PLWH by race/ethnicity and gender

**Figure 1.12. Rate per 100,000 Population of PLWH by Race/Ethnicity and Current Age, Orange County**



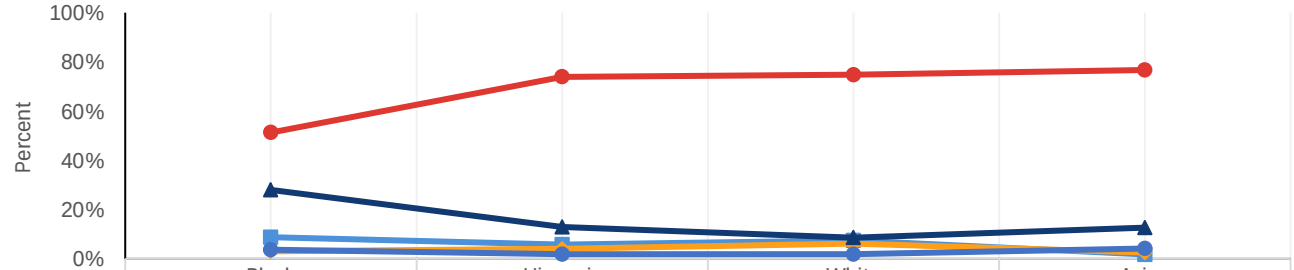

| | 0-18 | 19-25 | 26-35 | 36-45 | 46-55 | 56+ |
|---|---|---|---|---|---|---|
| Black | 233.9 | 1,472.6 | 1,908.3 | 1,360.1 | 399.7 | N/A |
| Hispanic | 22.6 | 482.4 | 791.5 | 430.2 | 162.8 | 41.8 |
| White | 21.4 | 302.7 | 564.4 | 440.7 | 166.4 | 22.9 |
| Asian | 9.0 | 163.3 | 268.2 | 158.6 | 51.1 | 13.2 |
| More than One Race | 16.3 | 100.0 | 350.2 | 310.2 | 211.0 | N/A |

Blank cells in the table above are due to fewer than 10 PLWH.

**Figure 1.13** shows the distribution of PLWH by reported mode of exposure among each race/ethnicity. Pacific Islanders, AIAN, and More than One Race are not shown due to their small numbers in some modes of exposure. The same is true for Hemophilia/Transfusion, Perinatal, and Other Pediatric modes of exposure. Numbers and percentages can be seen in table 1.5 at the end of this section.

- **Mode of Exposure among Blacks:** Slightly over half (51.3%) of Black PLWH reported being exposed through MSM. Compared to other groups, a larger proportion of Black PLWH reported heterosexual contact (28.0%) and IDU (8.8%) as their mode of exposure.
- **Mode of Exposure among Hispanics:** 73.9% of Hispanic PLWH reported being exposed through MSM, followed by heterosexual contact (13.0%), IDU (5.8%), and MSM/IDU (4.1%).
- **Mode of Exposure among Whites:** A large majority (74.8%) of Whites reported being exposed through MSM followed by heterosexual contact (8.6%), IDU (7.5%), and MSM/IDU (6.2%).
- **Mode of Exposure among APIs:** A large majority (76.7%) of Asian PLWH reported being exposed through MSM, followed by heterosexual contact (12.7%). Compared to Whites, Blacks, and Hispanics, a large proportion (4.2%) of API reported mode of exposure.

**Figure 1.13. Percent of PLWH by Race/Ethnicity and Mode of Exposure, Orange County**




| | Black | Hispanic | White | Asian |
|---|---|---|---|---|
| MSM | 51.3% | 73.9% | 74.8% | 76.7% |
| IDU | 8.8% | 5.8% | 7.5% | 1.8% |
| MSM/IDU | 3.1% | 4.1% | 6.2% | 2.6% |
| Heterosexual | 28.0% | 13.0% | 8.6% | 12.7% |
| Unknown | 3.7% | 1.9% | 1.9% | 4.2% |

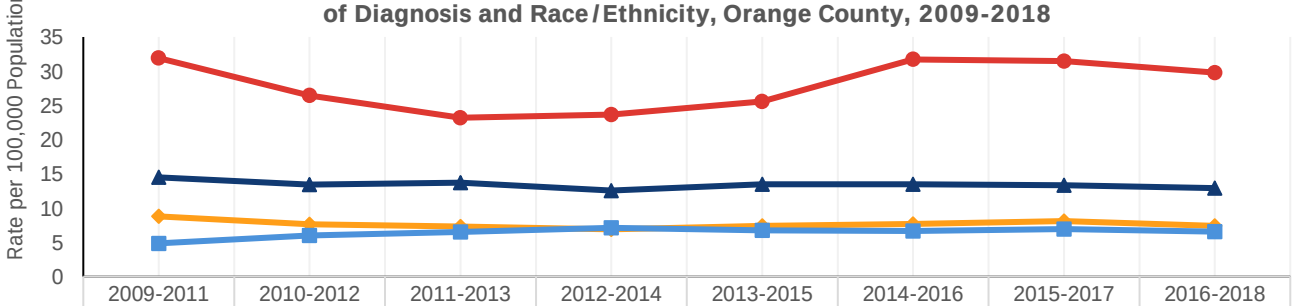
## *Incidence by Race/Ethnicity:*

Of the 3,043 new HIV cases diagnosed in Orange County between 2009 and 2018, 1,043 were White, 132 were Black, 1,452 Hispanic, 345 were Asian, 17 were Pacific Islander, 53 were More than One Race, and fewer than 10 were AIAN. The last three categories are not shown on Figure 1.14 due to their small numbers. Numbers and rates can be seen in tables 1.6a and 1.6b at the end of this section.

**Figure 1.14** shows the number of newly diagnosed HIV cases per 100,000 Orange County population by race/ethnicity and year of diagnosis.

- Case rates peaked in 2009-2011 for Blacks, Hispanics, and Whites.
- Asian rates were highest 2012-2014.
- In 2016-2018, Blacks had the highest case rate (29.8), followed by Hispanics (12.9), Whites (7.4), and Asians (6.6).

**Figure 1.14. Rolling Three Year Average Rate per 100,000 Population of HIV Cases by Year of Diagnosis and Race/Ethnicity, Orange County, 2009-2018**



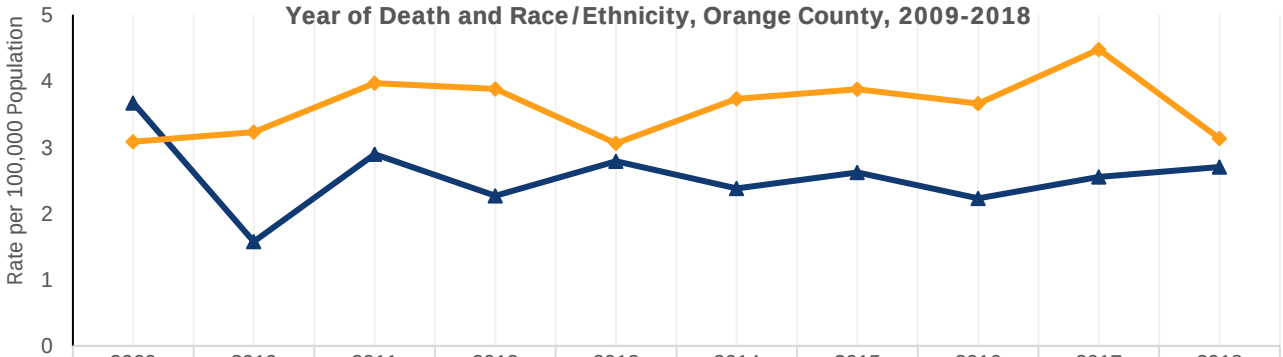

| | 2009-2011 | 2010-2012 | 2011-2013 | 2012-2014 | 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 |
|---|---|---|---|---|---|---|---|---|
| Black | 31.9 | 26.4 | 23.2 | 23.7 | 25.6 | 31.7 | 31.5 | 29.8 |
| Hispanic | 14.5 | 13.4 | 13.7 | 12.6 | 13.5 | 13.5 | 13.3 | 12.9 |
| White | 8.8 | 7.6 | 7.3 | 6.9 | 7.4 | 7.7 | 8.1 | 7.4 |
| Asian | 4.9 | 6.0 | 6.5 | 7.1 | 6.8 | 6.6 | 6.9 | 6.6 |

## *Mortality by Race/Ethnicity:*

**Figure 1.15** shows the death rate (due to any cause) per 100,000 population among Whites and Hispanics for deaths occurring between 2009 and 2018. Since the beginning of the epidemic, 3,576 Whites, 248 Blacks, 1,222 Hispanics, 106 Asians, 6 AIAN, and 43 persons of More than One Race diagnosed with HIV have died. There have been no reported deaths among Pacific Islanders. Only Whites and Hispanics are displayed in Figure 1.15 due to fewer than 10 deaths in the other race/ethnicity categories.

- The death rate among Whites is higher than Hispanics in all years except 2009.
- Deaths among Hispanics may be underrepresented as some foreign-born Hispanics may have returned to their home country where their potential death record is unavailable in the United States.

**Figure 1.15. Death Rate per 100,000 Population Among Persons Diagnosed with HIV by Year of Death and Race/Ethnicity, Orange County, 2009-2018**




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| Hispanic | 3.7 | 1.6 | 2.9 | 2.3 | 2.8 | 2.4 | 2.6 | 2.2 | 2.6 | 2.7 |
| White | 3.1 | 3.2 | 4.0 | 3.9 | 3.1 | 3.7 | 3.9 | 3.7 | 4.5 | 3.1 |

# HIV by Age:

This section describes trends in HIV by age groups. When describing individuals currently living with HIV (prevalence), the *current age* of the individual is used. When describing trends in the number of new cases (incidence), the *age of diagnosis* is used.

See Chapter 3 for a more detailed description of pediatric HIV/AIDS (HIV among children under age 13 at time of diagnosis) in Orange County.

## *Prevalence by Current Age:*

Of the 6,369 PLWH in the county as of December 31, 2018, 20 were under the age of 19, 280 were between ages 19-25 years, 1,037 were between ages 26-35 years, 1,372 were between ages 36-45 years, 1,869 were between ages 46-55 years, 1,791 were age 56 years or over.

**Figure 1.16** compares the current age of PLWH to the 2018 Orange County population. As shown, the majority (57.5%) of PLWH are age 46 years and over compared to Orange County's population (40.7%).

**Figure 1.16. PLWH by Current Age and 2018 Population, Orange County**

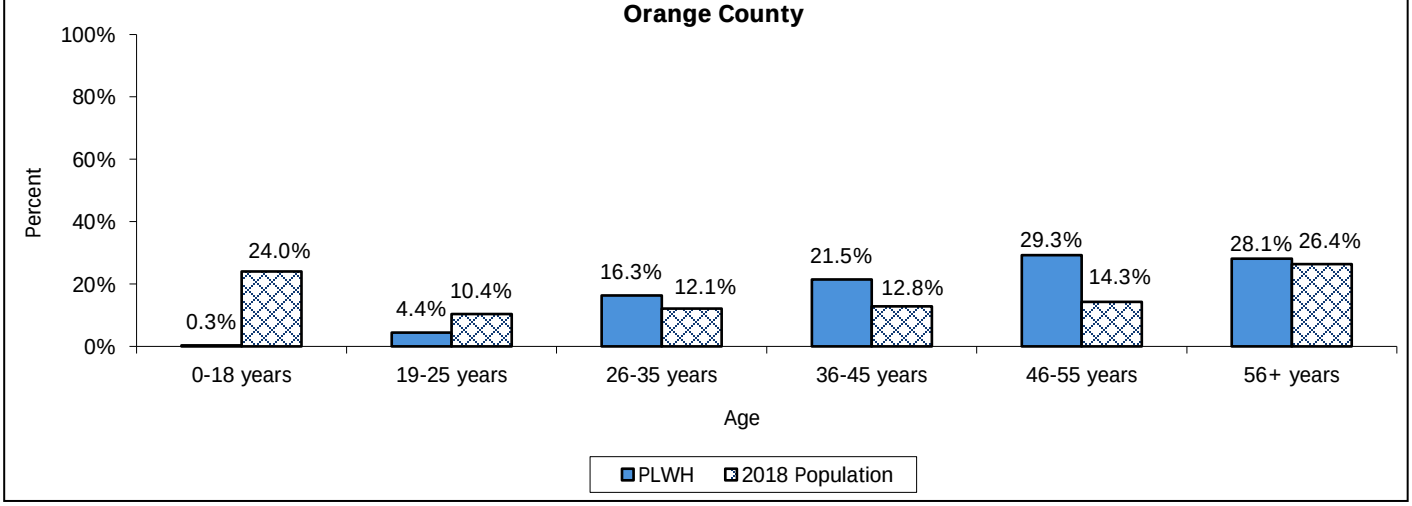
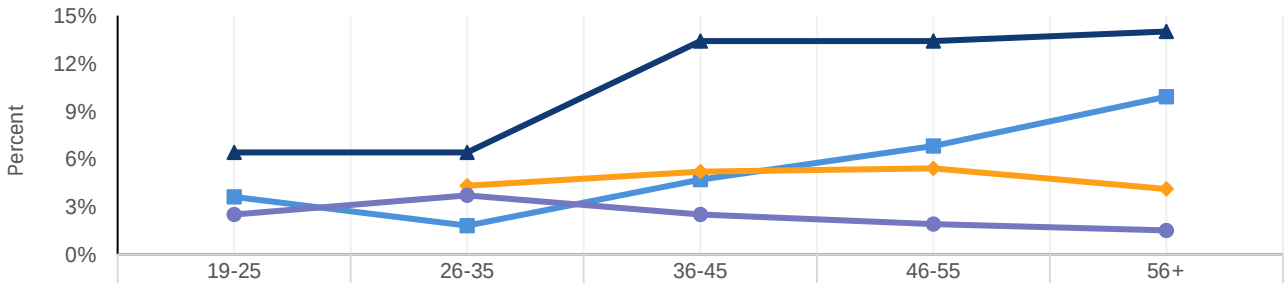


**Figure 1.17** shows the distribution of PLWH by self-reported mode of exposure for five different age groups (by current age). Those currently under the age of 13 are discussed in Chapter 3. Those currently age 13 to 18 years are not discussed here due to fewer than 10 PLWH in any exposure group. The scale of the figure is set to exclude the graphing of MSM so the differences between the other modes of exposure can be shown.

- **Mode of Exposure among 19-25 year-olds:** The vast majority (77.5%) of 19-25 year-old PLWH reported being exposed through MSM, followed by perinatal (6.8%) (not shown in Figure 1.17), heterosexual contact (6.4%), or IDU (3.6%). There are fewer than 10 MSM/IDU.
- **Mode of Exposure among 26-35 year-olds:** The majority (82.6%) of PLWH ages 26-35 years reported being exposed through MSM, followed by heterosexual contact (6.4%), MSM/IDU (4.3%), and IDU (1.8%). This group had the highest percentage of MSM exposure, as well as the highest percent with unknown exposure (3.7%).
- **Mode of Exposure among 36-45 year-olds:** For persons currently ages of 36-45 years, 73.4% reported being exposed through MSM, followed by heterosexual contact (13.4%), MSM/IDU (5.2%), or IDU (4.7%).
- **Mode of Exposure among 46-55 year-olds:** The majority of 46-55 year-old PLWH reported being exposed through MSM (71.6%) while 13.4% reported heterosexual contact, IDU (6.8%), or MSM/IDU (5.4%). This group had the highest percent with MSM/IDU exposure.
- **Mode of Exposure among Individuals 56 years and over:** For PLWH currently ages 56 years or older, 69.4% reported being exposed through MSM, followed by heterosexual contact (14.0%), IDU (9.9%), or MSM/IDU (4.1%). This age group had highest percentage who reported IDU or heterosexual contact as a mode of exposure.

**Figure 1.17. Percent of PLWH by Current Age and Mode of Exposure, Orange County**




| | 19-25 | 26-35 | 36-45 | 46-55 | 56+ |
|---|---|---|---|---|---|
| MSM | 77.5% | 82.6% | 73.4% | 71.6% | 69.4% |
| IDU | 3.6% | 1.8% | 4.7% | 6.8% | 9.9% |
| MSM/IDU | | 4.3% | 5.2% | 5.4% | 4.1% |
| Heterosexual | 6.4% | 6.4% | 13.4% | 13.4% | 14.0% |
| Unknown | 2.5% | 3.7% | 2.5% | 1.9% | 1.5% |

Those who are currently 0-12 years have a pediatric mode of exposure discussed in Chapter 3.
Blank cells in the table above are due to fewer than 10 PLWH.

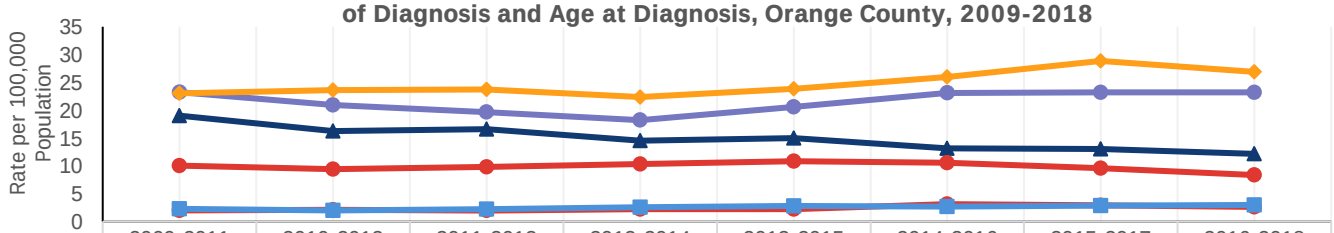
## *Incidence by Age at Diagnosis:*

Of the 3,043 new cases of HIV diagnosed between 2009 and 2018, 10 were under the age of 13, 62 were between the ages of 13-18 years, 688 were between ages 19-25 years, 992 were between ages 26-35 years, 660 were between ages 36-45 years, 439 were between ages 46 and 55 years, and 192 were age 56 years or over at time of diagnosis.

**Figure 1.18** shows the rate of cases diagnosed each year per 100,000 population by age at diagnosis within each age group. Persons age 0-12 years are displayed in the pediatric section.

- Case rates have declined since 2009-2011 for persons age 36-45 years and 46-55 years.
- Persons aged 26-35 years consistently had the highest case rates except in 2009-2011 when person age 19-25 years had a slightly higher rate.
- Persons 13-18 years and 56 years or older have consistently had the lowest case rates among age groups shown.

**Figure 1.18. Rolling Three Year Average Rate per 100,000 Population of HIV Cases by Year of Diagnosis and Age at Diagnosis, Orange County, 2009-2018**



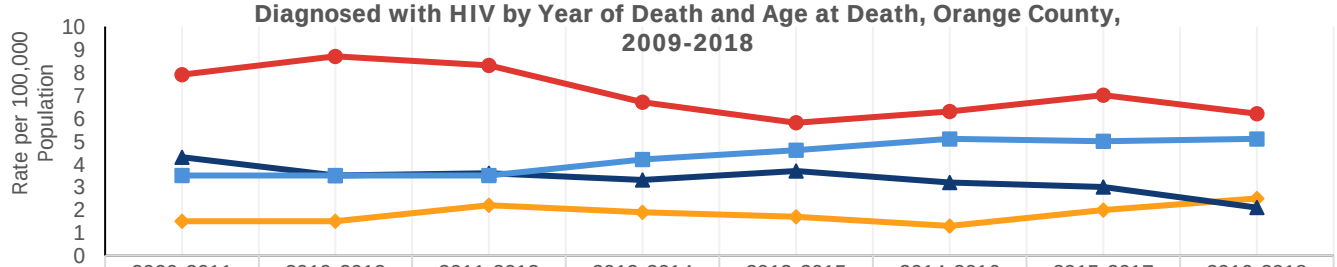

| | 2009-2011 | 2010-2012 | 2011-2013 | 2012-2014 | 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 |
|---|---|---|---|---|---|---|---|---|
| 13-18 | 2.0 | 2.1 | 2.0 | 2.2 | 2.2 | 3.1 | 2.9 | 2.7 |
| 19-25 | 23.2 | 20.9 | 19.7 | 18.2 | 20.6 | 23.1 | 23.2 | 23.2 |
| 26-35 | 23.0 | 23.6 | 23.8 | 22.4 | 23.8 | 26.0 | 28.9 | 26.9 |
| 36-45 | 19.0 | 16.3 | 16.6 | 14.6 | 15.0 | 13.2 | 13.0 | 12.2 |
| 46-55 | 10.0 | 9.4 | 9.8 | 10.3 | 10.8 | 10.6 | 9.6 | 8.4 |
| 56+ | 2.3 | 2.0 | 2.2 | 2.6 | 2.8 | 2.7 | 2.9 | 3.0 |

## *Mortality by Age at Death:*

**Figure 1.19** shows the death rate (due to any cause) per 100,000 population between 2009 and 2018 by age at death. Since the beginning of the epidemic, 25 persons died before they reached 13 years, 24 persons died between the ages of 13-18 years, 122 were 19-25 years, 1,443 were 26-35 years old at death, 1,738 were between 36-45 years old, 1,127 were between 46-55 years old at death, and 749 lived to be 56 years and over.

- Death rates were highest among those who died between the ages of 46 and 55 years for all years.
- Persons age 26 to 36 years at the time of death had the lowest death rates of the age groups shown.
- Persons age 13-18 years and 19-25 years are not shown due to fewer than 10 deaths per year.

**Figure 1.19. Rolling Three Year Average Rate per 100,000 Population Among Persons Diagnosed with HIV by Year of Death and Age at Death, Orange County, 2009-2018**




| | 2009-2011 | 2010-2012 | 2011-2013 | 2012-2014 | 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 |
|---|---|---|---|---|---|---|---|---|
| 26-35 | 1.5 | 1.5 | 2.2 | 1.9 | 1.7 | 1.3 | 2.0 | 2.5 |
| 36-45 | 4.3 | 3.5 | 3.6 | 3.3 | 3.7 | 3.2 | 3.0 | 2.1 |
| 46-55 | 7.9 | 8.7 | 8.3 | 6.7 | 5.8 | 6.3 | 7.0 | 6.2 |
| 56+ | 3.5 | 3.5 | 3.5 | 4.2 | 4.6 | 5.1 | 5.0 | 5.1 |

Deaths in 2018 are provisional due to reporting delays.

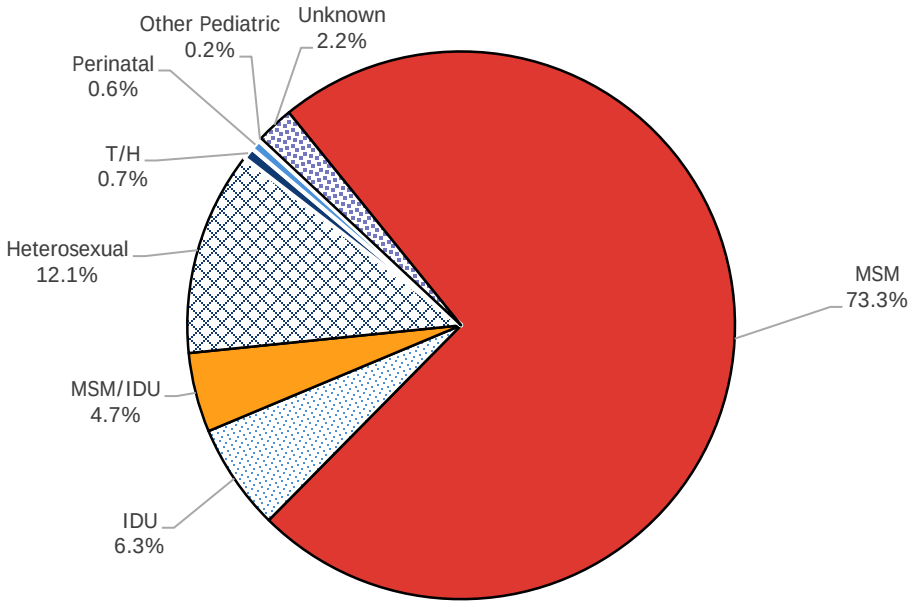
# HIV by Mode of Exposure:

This section describes trends in HIV by mode of exposure. The term *mode of exposure* is used to summarize a person's possible HIV risk factors. Individuals diagnosed with HIV are asked to report potential modes of exposure. The Orange County HIV reporting system uses a hierarchy established by the CDC, in determining the *primary* mode of exposure for each HIV case. Persons with more than one reported risk factor for HIV infection are classified in the exposure category listed first in the hierarchy. The following are modes of exposure listed in hierarchical order for adults: (1) men who have sex with men (MSM); (2) injection drug use (IDU); (3) men who have sex with men who use injection drugs (MSM/IDU) (4) treatment for hemophilia (5) heterosexual contact (with person known to have or at high-risk for HIV); (6) received transfusion of blood or blood components/transplant; (8) adult, confirmed other risk; (9) cannot be classified in above categories. Modes of exposure for pediatric cases (children under age 13 at time of diagnosis), listed in hierarchical order, include: (1) treatment for hemophilia; (2) mother has HIV/AIDS or has had sex with someone with or at-risk for HIV; (3) received transfusion of blood or blood components/transplant; (4) pediatric other risk; (5) pediatric, confirmed other risk; and (6) cannot be classified in above categories. For the purposes of this report, persons whose mode of exposure could not be classified in any of the exposure categories will be shown as "Unknown." See Chapter 3 for more detailed description of pediatric HIV in Orange County.

## *Prevalence by Mode of Exposure:*

**Figure 1.20** displays the proportion of PLWH by reported mode of exposure. Of the 6,369 PLWH in Orange County as of December 31, 2018, 4,668 (73.3%) were MSM, 769 (12.1%) were reported to be infected through heterosexual contact, 399 (6.3%) were IDU, 300 (4.7%) were MSM/IDU, 42 (0.7%) were attributed to transfusion or hemophilia (T/H), 40 (0.6%) were due to perinatal infection, 10 (0.2%) were another pediatric mode of exposure, and 141 (2.2%) had unknown exposure.

**Figure 1.20. PLWH by Reported Mode of Exposure, Orange County**




See Figure 1.8 on page 16 to see PLWH by gender and mode of exposure.
See Figure 1.13 on page 19 to see PLWH by race/ethnicity and mode of exposure.
See Figure 1.17 on page 22 to see PLWH by current age and mode of exposure.

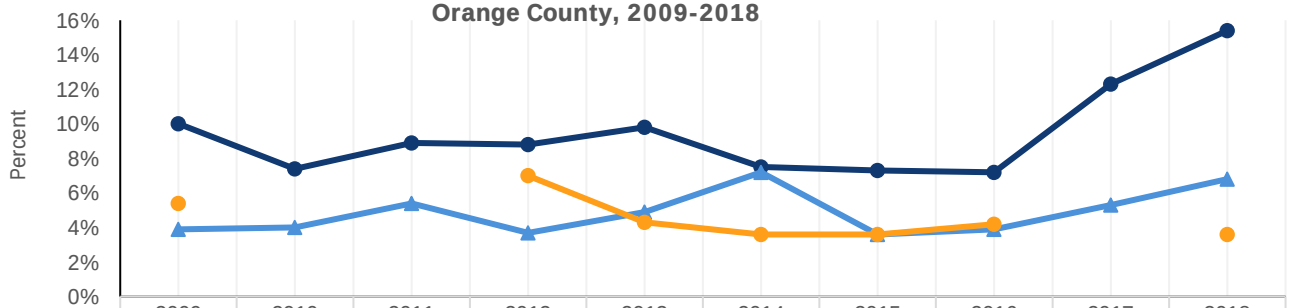
## *Incidence by Mode of Exposure:*

Of the 3,043 new cases of HIV diagnosed between 2009 and 2018, 2,360 reported MSM as their mode of exposure, 286 were infected through heterosexual contact, 147 were IDU, 118 were MSM/IDU, 16 had a pediatric or transfusion related mode of exposure, and 116 had an unknown mode of exposure.

**Figure 1.21** presents cases diagnosed by mode of exposure by year of diagnosis.[14]

- Exposure through MSM has consistently been reported as the highest mode of exposure. The line for MSM is not displayed in order to highlight the differences and changes in the other modes of exposure.
- Heterosexual contact has been the second highest reported mode of exposure in all years, followed by IDU or MSM/IDU depending on the year.

**Figure 1.21. Percent of HIV Cases by Year of Diagnosis and Mode of Exposure, Orange County, 2009-2018**




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| MSM | 78.9% | 84.8% | 80.6% | 77.3% | 75.7% | 77.4% | 81.3% | 79.8% | 71.0% | 67.1% |
| Heterosexual | 10.0% | 7.4% | 8.9% | 8.8% | 9.8% | 7.5% | 7.3% | 7.2% | 12.3% | 15.4% |
| IDU | 3.9% | 4.0% | 5.4% | 3.7% | 4.9% | 7.2% | 3.6% | 3.9% | 5.3% | 6.8% |
| MSM/IDU | 5.4% | | | 7.0% | 4.3% | 3.6% | 3.6% | 4.2% | N/A | 3.6% |

Blank cells in the table above are due to fewer than 10 cases diagnosed.

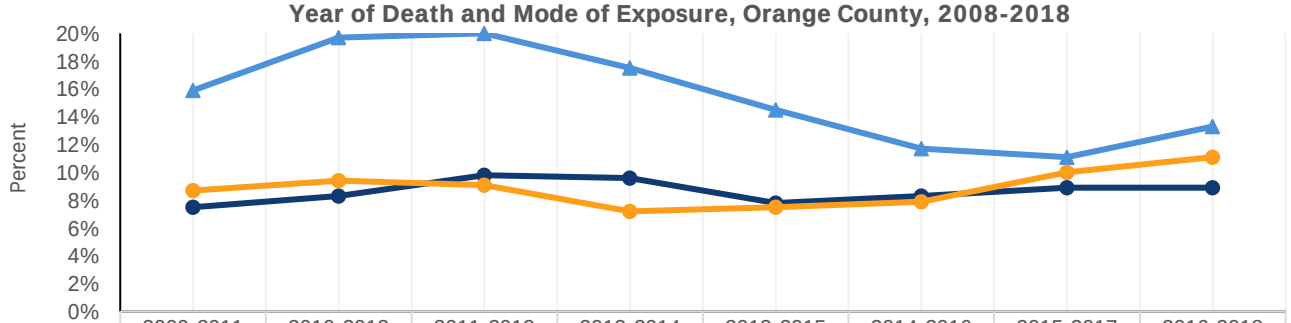
## *Mortality by Mode of Exposure:*

**Figure 1.22** shows the rolling three year average of percent of deaths (due to any cause) between 2009 and 2018 by mode of exposure.

- Those reported as exposed through MSM have consistently had the highest number and percentage of deaths among individuals diagnosed with HIV. The line for MSM is not displayed in order to highlight the differences and changes in the other modes of exposure.
- IDU has been the exposure group with the second highest number and percentage of deaths in all years.
- Deaths among those exposed through MSM/IDU or heterosexual contact have shared the third highest number and percentage of deaths. MSM/IDU had the highest percentage in 2009-2011, 2010-2012, 2015-2017, and 2016-2018 while heterosexual was higher in the remaining time frames.

[14] Rates for transmission categories are not provided because of the absence of denominator data (i.e., the denominator data used in this report come from the U.S. Census Bureau, but the U.S. Census Bureau does not collect data on transmission categories).

**Figure 1.22. Rolling Three Year Average of Deaths Among Persons Diagnosed with HIV by Year of Death and Mode of Exposure, Orange County, 2008-2018**




| | 2009-2011 | 2010-2012 | 2011-2013 | 2012-2014 | 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 |
|---|---|---|---|---|---|---|---|---|
| MSM | 64.7% | 59.8% | 58.1% | 63.3% | 67.1% | 68.7% | 64.6% | 61.3% |
| Heterosexual | 7.5% | 8.3% | 9.8% | 9.6% | 7.8% | 8.3% | 8.9% | 8.9% |
| IDU | 15.9% | 19.7% | 20.0% | 17.5% | 14.5% | 11.7% | 11.1% | 13.3% |
| MSM/IDU | 8.7% | 9.4% | 9.1% | 7.2% | 7.5% | 7.9% | 10.0% | 11.1% |

Deaths in 2018 are provisional due to reporting delays.

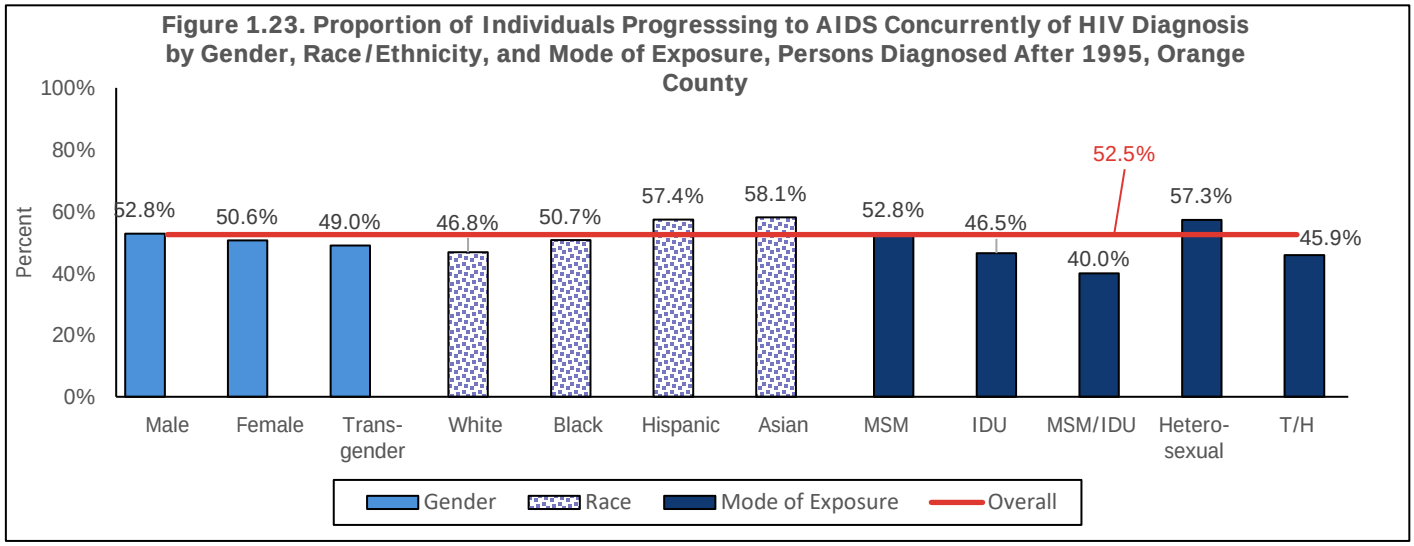
## Progression from HIV to AIDS

The introduction of Highly Active Antiretroviral Therapy (HAART) in 1995 substantially prolonged the interval between the diagnosis of HIV infection and the development of AIDS.[15] Since 1996, Orange County has reported 4,439 AIDS cases. In addition to HAART, other measures that help delay the progression to AIDS are:

- **Early identification of HIV diagnosis:** Testing individuals for HIV so that they know their HIV status and can be linked to care at the earliest possible stage of their HIV infection;
- **Linkage to care:** Ensuring that the newly diagnosed individual gets linked to HIV medical care;
- **Retention in care:** Ensuring that person currently in HIV medical care continue with their HIV medical care.

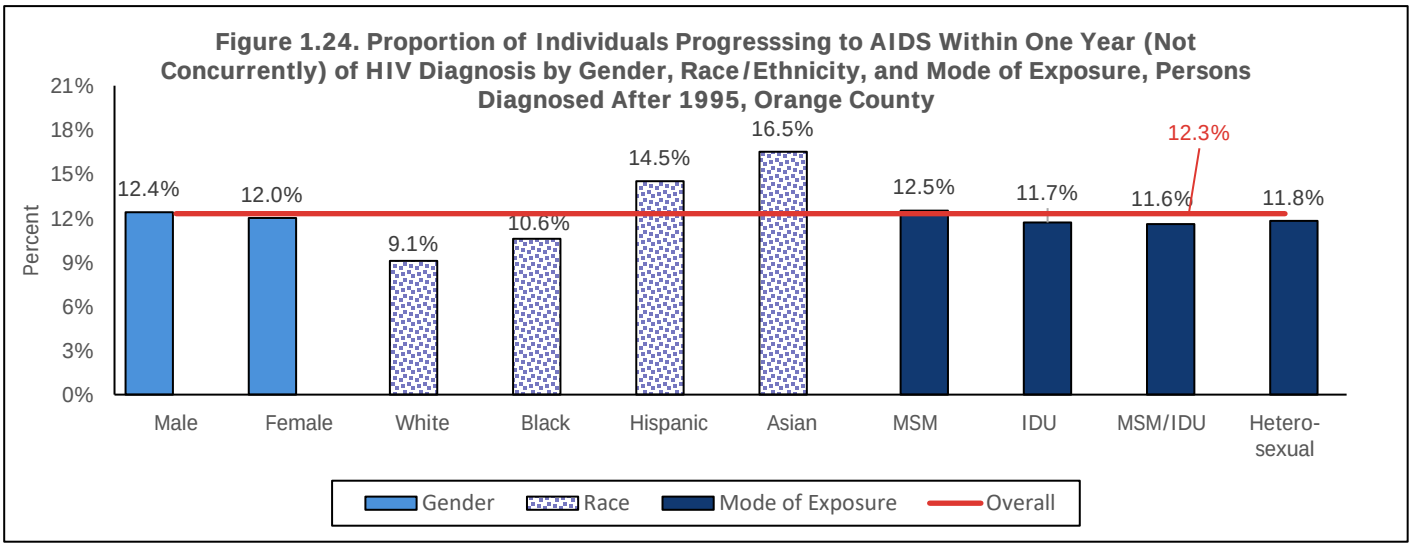
**Figure 1.23** shows the proportion of individuals who were diagnosed with HIV at the same time (concurrently) as AIDS for persons who received their diagnoses after 1995 (since the introduction of HAART). The proportion of all individuals who were concurrently diagnosed with HIV and AIDS was 52.5%. The proportion of males, Hispanics, Asians, and those who reported exposure through MSM or heterosexual contact received concurrent HIV and AIDS diagnoses at a rate higher than the overall proportion. This indicates that these populations are living longer with HIV before diagnosis and are not getting tested until the disease has begun the progression to AIDS.

[15] Karon JM, Fleming PL, Steketee RW, De Cock KM. HIV in the United States at the turn of the century: an epidemic in transition. Am J Public Health 2001;91:1060—8.




All other race/ethnicity categories have fewer than 10 cases and are not shown.

**Figure 1.24** shows the proportion of individuals progressing to AIDS within one year (not concurrently) of HIV diagnosis for persons diagnosed with AIDS after 1995. The proportion of all individuals who progressed to AIDS within one year of their HIV diagnosis was 12.3%. The proportion of males, Hispanics, Asians, MSM, and transfusion/hemophilia (T/H) progressed to AIDS within one year of HIV diagnosis at a higher rate than the overall proportion.




All categories not shown have fewer than 10 cases.

## HIV Survival

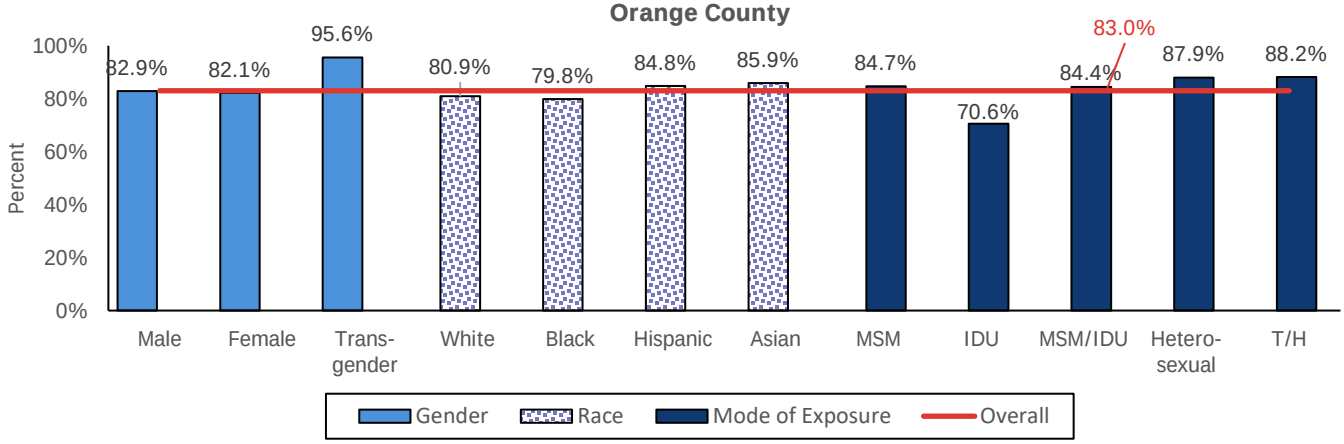
The widespread use of HAART beginning in 1995 in the United States has resulted in a large reduction in mortality rates among HIV infected persons. HIV is now conceptualized as a chronic illness, to be managed in similar ways to diseases like diabetes, where a major goal of therapy is to prevent later complications and ensure quality of life. This section describes the characteristics of the 3,863 individuals who were diagnosed with AIDS between 1996 and 2013.

**Figure 1.25** shows the proportion of individuals surviving five or more years after receiving an AIDS diagnosis for persons diagnosed with AIDS between 1996 (since the introduction of HAART) and 2013 (five years ago). The overall five-year survival for persons diagnosed with AIDS between 1996 and 2013 is 83.0%.

Differences in survival occurred across gender, race/ethnicity, and mode of exposure categories.

- **By Gender:** The proportion of males and females surviving five or more years after an AIDS diagnosis is lower than Orange County overall (83.0%). Females have the lower survival percentage at 82.1%.
- **By Race/Ethnicity:** The proportion of Whites and Blacks who have survived five or more years since receiving their AIDS diagnosis is lower than the overall proportion.
- **By Mode of Exposure:** The proportion of IDU who have survived five or more years since receiving their AIDS diagnosis is lower than the overall proportion.

**Figure 1.25. Proportion Surviving Five Years After AIDS Diagnosis by Gender, Race/Ethnicity, and Mode of Exposure, Persons Diagnosed With AIDS 1996-2013, Orange County**



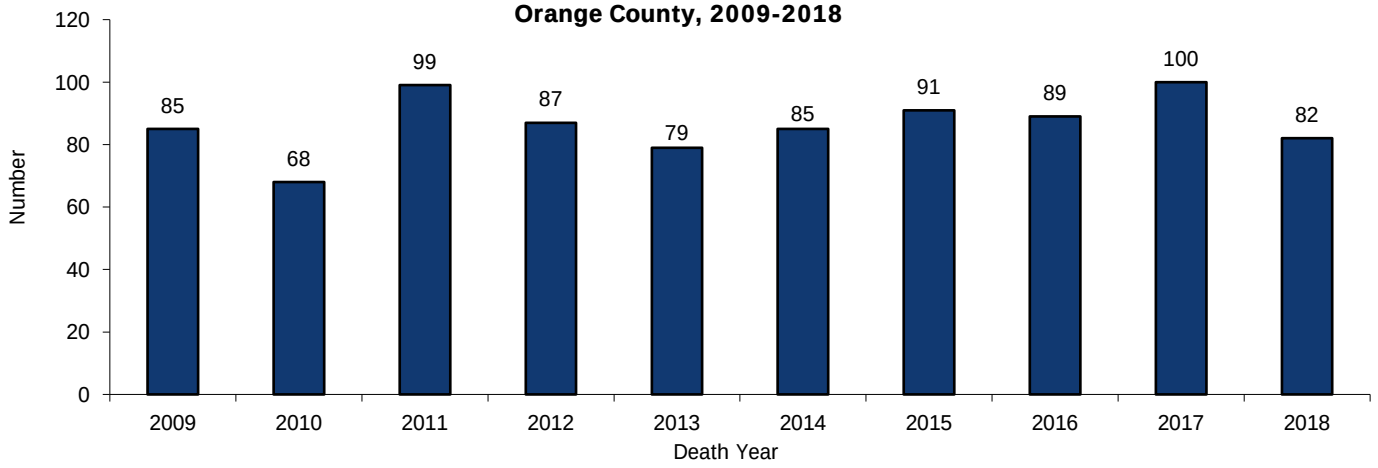

All other race/ethnicity categories have fewer than 10 cases and are not shown.

## HIV Mortality

Individuals reported with HIV are presumed living until a death report is received. A date of death may be reported through the following sources: (1) a death notice from an Orange County HIV service provider; (2) a death certificate provided by County of Orange Vital Records; (3) an update from the State Office of AIDS; or (4) through matching living cases with the annual file of death certificates certified by Orange County Vital Records. Persons diagnosed with HIV may die of any cause, although the majority of deaths are due to HIV. When a death notification is received, the date of the person's death is added to the HIV Case Registry and their vital status is changed to deceased. Though these modes are meant to capture all instances in which a person may be deceased, there are instances when death notifications do not occur (e.g. if the person moves out of the country and no death records exist in the United States). Therefore, it is possible that some of the persons counted as living with HIV may actually be deceased.

**Figure 1.26** shows the number of deaths between 2008 and 2018 of persons diagnosed with HIV as residents of Orange County, *regardless of cause of death*. The number of deaths has declined 3.5% from 85 in 2009 to 82 in 2018. As of December 31, 2018, the cumulative number of deaths reported was 5,201, which represented 39.1% of the 13,305 cases diagnosed with HIV during the same time period.

**Figure 1.26. Deaths Among Persons Diagnosed with HIV by Year of Death, Orange County, 2009-2018**

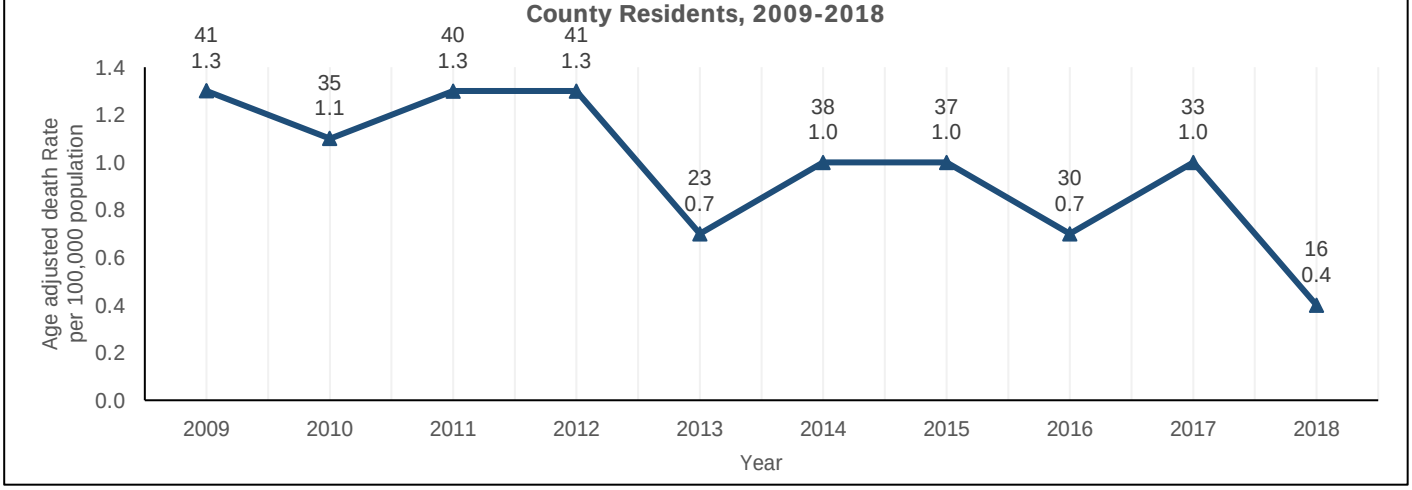



Deaths in 2018 are provisional due to reporting delays.
See Figure 1.10 on page 17 for death rates by gender.
See Figure 1.15 on page 21 for death rates by race/ethnicity.
See Figure 1.19 on page 23 for death rates by age at diagnosis.
See Figure 1.22 on page 26 for number of deaths by mode of exposure.

## *Deaths Due to HIV[16]:*

**Figure 1.27** shows age-adjusted rate of death[17] *due to HIV* per 100,000 Orange County population between 2009 and 2018 HIV related deaths of Orange County residents do not include persons diagnosed with HIV in Orange County if they did not live in Orange County at the time of death. The death rate due to HIV was 1.3 in 2009 and has since declined to 0.4 in 2018. On average, there have been 33 deaths per year since 2009.

**Figure 1.27. Number and Rate per 100,000 Population of Deaths Due to HIV, Orange County Residents, 2009-2018**




[16] The International Classification of Diseases (ICD) is used to facilitate the collection, processing, classification, and presentation of mortality statistics. The figure includes deaths due to HIV in Orange County as indicated by the 10th revision (ICD-10).
[17] The age-adjusted death rate considers the number of deaths occurring in a specified age group divided by the midyear population of the age group. Age-adjusted death rates allow comparison of mortality risk among groups or over time within a particular age group.

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**Table 1.1 (Figure 1.2, 1.4): HIV Cases by Year of Diagnosis and Persons Living with HIV (PLWH), Orange County, 1980-2018**

| Year | Diagnosed[1] | | PLWH[1] | |
|---|---|---|---|---|
| | Number | Rate per 100,000 Population | Number | Rate per 100,000 Population |
| **1980** | * | * | 0 | 0.0 |
| **1981** | * | * | 0 | 0.0 |
| **1982** | 18 | 0.9 | * | * |
| **1983** | 52 | 2.5 | * | * |
| **1984** | 117 | 5.5 | 23 | 1.1 |
| **1985** | 321 | 14.8 | 64 | 3.0 |
| **1986** | 379 | 17.1 | 114 | 5.1 |
| **1987** | 559 | 24.6 | 191 | 8.4 |
| **1988** | 748 | 32.3 | 286 | 12.3 |
| **1989** | 711 | 30.0 | 384 | 16.2 |
| **1990** | 596 | 24.7 | 476 | 19.7 |
| **1991** | 560 | 22.8 | 584 | 23.8 |
| **1992** | 519 | 20.7 | 702 | 27.9 |
| **1993** | 455 | 17.8 | 821 | 32.2 |
| **1994** | 389 | 15.1 | 947 | 36.8 |
| **1995** | 384 | 14.7 | 1,086 | 41.7 |
| **1996** | 405 | 15.3 | 1,258 | 47.5 |
| **1997** | 340 | 12.6 | 1,414 | 52.4 |
| **1998** | 285 | 10.4 | 1,579 | 57.4 |
| **1999** | 295 | 10.5 | 1,743 | 62.2 |
| **2000** | 296 | 10.4 | 1,936 | 67.8 |
| **2001** | 336 | 11.6 | 2,133 | 73.8 |
| **2002** | 364 | 12.5 | 2,354 | 80.8 |
| **2003** | 358 | 12.2 | 2,583 | 87.9 |
| **2004** | 367 | 12.4 | 2,831 | 95.8 |
| **2005** | 352 | 11.9 | 3,075 | 104.0 |
| **2006** | 348 | 11.8 | 3,306 | 111.9 |
| **2007** | 362 | 12.2 | 3,554 | 119.8 |
| **2008** | 341 | 11.4 | 3,803 | 127.5 |
| **2009** | 331 | 11.0 | 4,057 | 135.3 |
| **2010** | 297 | 9.9 | 4,283 | 142.1 |
| **2011** | 315 | 10.3 | 4,540 | 148.9 |
| **2012** | 273 | 8.9 | 4,772 | 154.7 |
| **2013** | 305 | 9.8 | 5,012 | 160.9 |
| **2014** | 279 | 8.9 | 5,264 | 167.7 |
| **2015** | 331 | 10.5 | 5,543 | 175.2 |
| **2016** | 332 | 10.4 | 5,825 | 183.1 |
| **2017** | 300 | 9.4 | 6,101 | 190.3 |
| **2018** | 280 | 8.7 | 6,369 | 198.0 |
| **Total** | 13,305 | 413.6 | 6,369 | 198.0 |

*Fewer than 10 diagnosed/PLWH.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, California County Population Estimates and Components of Change, July 1, 1970-1990. Sacramento, California. State of California, Department of Finance, Revised County Population Estimates and Components of Change by County, July 1, 1990-2000. Sacramento, California, February 2005. State of California, Department of Finance, Population Estimates and Components of Change by County, July 1, 1999-2010. Sacramento, California, August 2011. State of California, Department of Finance, California County Population Estimates and Components of Change by Year, July 1, 2010-2018. Sacramento, California, December 2018.

Total rate is per 100,000 2018 population.

[1]Diagnosed: Persons diagnosed as residents of Orange County. PLWH: Persons currently living in Orange County, regardless of where they were diagnosed.

**Table 1.2a (Figures 1.5-1.8, 1.11, 1.16, and 1.20): Persons Currently Living in Orange County with HIV (PLWH) by Gender and Race/Ethnicity, Current Age, and Mode of Exposure**

| Race/Ethnicity, Current Age, and Mode of Exposure | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate |
| **White** | 2,091 | 37.9% | 314.7 | 213 | 28.4% | 31.5 |
| **Black** | 247 | 4.5% | 976.9 | 99 | 13.2% | 425.4 |
| **Hispanic** | 2,627 | 47.6% | 451.9 | 377 | 50.2% | 66.4 |
| **Asian** | 442 | 8.0% | 160.2 | 52 | 6.9% | 17.3 |
| **Pacific Islander** | 19 | 0.3% | 444.4 | * | * | * |
| **American Indian/Alaskan Native** | * | * | * | 0 | 0.0% | 0.0 |
| **More than One Race** | 85 | 1.5% | 187.5 | * | * | * |
| **Total** | **5,520** | **100.0%** | **345.1** | **751** | **100.0%** | **46.3** |
| **0-18** | * | * | * | 12 | 1.6% | 3.2 |
| **19-25** | 243 | 4.4% | 141.6 | 32 | 4.3% | 19.7 |
| **26-35** | 963 | 17.4% | 478.3 | 55 | 7.3% | 29.1 |
| **36-45** | 1,151 | 20.9% | 556.1 | 182 | 24.2% | 88.7 |
| **46-55** | 1,605 | 29.1% | 702.9 | 236 | 31.4% | 101.1 |
| **56+** | 1550 | 28.1% | 393.3 | 234 | 31.2% | 51.4 |
| **Total** | **5,520** | **100.0%** | **345.1** | **751** | **100.0%** | **46.3** |
| **MSM** | 4,583 | 83.0% | NC | -- | -- | -- |
| **IDU** | 276 | 5.0% | NC | 121 | 16.1% | NC |
| **MSM/IDU** | 291 | 5.3% | NC | -- | -- | -- |
| **Heterosexual** | 210 | 3.8% | NC | 558 | 74.3% | NC |
| **Hemophilia/Transfusion** | 24 | 0.4% | NC | 18 | 2.4% | NC |
| **Perinatal** | 16 | 0.3% | NC | 24 | 3.2% | NC |
| **Other Pediatric** | * | * | * | * | * | NC |
| **Unknown** | 112 | 2.0% | NC | 28 | 3.7% | NC |
| **Total** | **5,520** | **100.0%** | **NC** | **751** | **100.0%** | **NC** |

Transgender persons are all male to female.

Other Pediatric Mode of Exposure includes children who were hemophiliacs, had a blood transfusion, and those who could not be categorized but were under the age of 13 at diagnosis.

--Mode does not apply to females.

*Fewer than five PLWH.

NC: Rate not calculated due to lack of population estimates.

Rate is per 100,000 2018 population.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

**Table 1.2b (Figures 1.5-1.8, 1.11, 1.16, and 1.20): Persons Currently Living in Orange County with HIV (PLWH) by Gender and Race/Ethnicity, Current Age, and Mode of Exposure**

| Race/Ethnicity, Current Age, and Mode of Exposure | Transgender | | | Total PLWH | | |
|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate |
| **White** | 14 | 14.3% | NC | 2,318 | 36.4% | 172.8 |
| **Black** | * | * | * | 353 | 5.5% | 727.0 |
| **Hispanic** | 71 | 72.4% | NC | 3,075 | 48.3% | 267.7 |
| **Asian** | * | * | * | 498 | 7.8% | 86.3 |
| **Pacific Islander** | * | * | * | 21 | 0.3% | 249.9 |
| **American Indian/Alaskan Native** | 0 | 0.0% | NC | * | * | * |
| **More than One Race** | * | * | NC | 95 | 1.5% | 105.2 |
| **Total** | **98** | **100.0%** | **NC** | **6,369** | **100.0%** | **197.7** |
| **0-18** | 0 | 0.0% | NC | 20 | 0.3% | 2.6 |
| **19-25** | * | * | * | 280 | 4.4% | 83.8 |
| **26-35** | 19 | 19.4% | NC | 1,037 | 16.3% | 265.7 |
| **36-45** | 39 | 39.8% | NC | 1,372 | 21.5% | 332.9 |
| **46-55** | 28 | 28.6% | NC | 1,869 | 29.3% | 404.7 |
| **56+** | * | * | * | 1,791 | 28.1% | 210.8 |
| **Total** | **98** | **100.0%** | **NC** | **6,369** | **100.0%** | **197.7** |
| **MSM** | 85 | 86.7% | NC | 4,668 | 73.3% | NC |
| **IDU** | * | * | * | 399 | 6.3% | NC |
| **MSM/IDU** | * | * | * | 300 | 4.7% | NC |
| **Heterosexual** | * | * | * | 769 | 12.1% | NC |
| **Hemophilia/Transfusion** | 0 | 0.0% | NC | 42 | 0.7% | NC |
| **Perinatal** | 0 | 0.0% | NC | 40 | 0.6% | NC |
| **Other Pediatric** | 0 | 0.0% | NC | 10 | 0.2% | NC |
| **Unknown** | * | * | * | 141 | 2.2% | NC |
| **Total** | **98** | **100.0%** | **NC** | **6,369** | **100.0%** | **NC** |

Transgender persons are all male to female.

Other Pediatric Mode of Exposure includes children who were hemophiliacs, had a blood transfusion, and those who could not be categorized but were under the age of 13 at diagnosis.

--Mode does not apply to females.

*Fewer than 10 PLWH.

NC: Rate not calculated due to lack of population estimates.

Rate is per 100,000 2018 population.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

**Table 1.3 (Figure 1.9): HIV Cases by Year of Diagnosis and Gender, Orange County, 1980-2018**

| Year | Males | | | Females | | | Transgender (Note 1) | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent |
| **1980** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% |
| **1981** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% |
| **1982** | 18 | 100.0% | 1.8 | 0 | 0.0% | 0.0 | 0 | 0.0% |
| **1983** | 52 | 100.0% | 5.0 | 0 | 0.0% | 0.0 | 0 | 0.0% |
| **1984** | 111 | 94.9% | 10.5 | * | * | * | 0 | 0.0% |
| **1985** | 297 | 92.5% | 27.5 | 24 | 7.5% | 2.2 | 0 | 0.0% |
| **1986** | 355 | 93.7% | 32.0 | 23 | 6.1% | 2.1 | * | * |
| **1987** | 507 | 90.7% | 44.6 | 52 | 9.3% | 4.6 | 0 | 0.0% |
| **1988** | 685 | 91.6% | 58.9 | 63 | 8.4% | 5.5 | 0 | 0.0% |
| **1989** | 659 | 92.7% | 55.2 | 51 | 7.2% | 4.3 | * | * |
| **1990** | 546 | 91.6% | 45.0 | 48 | 8.1% | 4.0 | * | * |
| **1991** | 504 | 90.0% | 40.8 | 55 | 9.8% | 4.5 | * | * |
| **1992** | 470 | 90.6% | 37.3 | 47 | 9.1% | 3.8 | * | * |
| **1993** | 407 | 89.5% | 31.9 | 44 | 9.7% | 3.5 | * | * |
| **1994** | 330 | 84.8% | 25.6 | 55 | 14.1% | 4.3 | * | * |
| **1995** | 336 | 87.5% | 25.8 | 46 | 12.0% | 3.5 | * | * |
| **1996** | 349 | 86.2% | 26.4 | 53 | 13.1% | 4.0 | * | * |
| **1997** | 287 | 84.4% | 21.3 | 49 | 14.4% | 3.6 | * | * |
| **1998** | 240 | 84.2% | 17.5 | 42 | 14.7% | 3.0 | * | * |
| **1999** | 252 | 85.4% | 18.1 | 40 | 13.6% | 2.8 | * | * |
| **2000** | 245 | 82.8% | 17.3 | 47 | 15.9% | 3.3 | * | * |
| **2001** | 285 | 84.8% | 19.9 | 48 | 14.3% | 3.3 | * | * |
| **2002** | 302 | 83.0% | 20.9 | 52 | 14.3% | 3.5 | 10 | 2.7% |
| **2003** | 313 | 87.4% | 21.5 | 41 | 11.5% | 2.8 | * | * |
| **2004** | 307 | 83.7% | 20.9 | 52 | 14.2% | 3.5 | * | * |
| **2005** | 303 | 86.1% | 20.7 | 46 | 13.1% | 3.1 | * | * |
| **2006** | 305 | 87.6% | 20.8 | 40 | 11.5% | 2.7 | * | * |
| **2007** | 308 | 85.1% | 21.0 | 49 | 13.5% | 3.3 | * | * |
| **2008** | 296 | 86.8% | 20.0 | 43 | 12.6% | 2.9 | * | * |
| **2009** | 300 | 90.6% | 20.2 | 27 | 8.2% | 1.8 | * | * |
| **2010** | 267 | 89.9% | 17.9 | 22 | 7.4% | 1.4 | 8 | 2.7% |
| **2011** | 284 | 90.2% | 18.8 | 28 | 8.9% | 1.8 | * | * |
| **2012** | 240 | 87.9% | 15.7 | 24 | 8.8% | 1.5 | 9 | 3.3% |
| **2013** | 267 | 87.5% | 17.3 | 33 | 10.8% | 2.1 | * | * |
| **2014** | 255 | 91.4% | 16.4 | 24 | 8.6% | 1.5 | 0 | 0.0% |
| **2015** | 304 | 91.8% | 19.4 | 22 | 6.6% | 1.4 | * | * |
| **2016** | 298 | 89.8% | 18.9 | 22 | 6.6% | 1.4 | 12 | 3.6% |
| **2017** | 266 | 88.7% | 16.7 | 29 | 9.7% | 1.8 | * | * |
| **2018** | 248 | 88.6% | 15.5 | 27 | 9.6% | 1.7 | * | * |
| **Total** | **11,803** | **88.7%** | **737.9** | **1,374** | **10.3%** | **84.7** | **128** | **1.0%** |

Note 1: Transgender persons are all male to female. Rate not calculated due to lack of population estimates for people who identify as transgender.
*Fewer than 10 cases.
Data Sources:
HIV Case Registry, data as of January 31, 2019.
State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.
State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.
State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.
State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.
State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.
Rate in each year is per 100,000 population in that year.
Total rate is per 100,000 2018 population.

**Table 1.4 (Figures 1.10 and 1.26): Deaths (regardless of cause) Among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Gender, 1981-2018**

| Year | Males | | | Females | | | Transgender (Note 1) | | Total Deaths | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Number | Rate |
| **1981** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% | * | * |
| **1982** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% | * | * |
| **1983** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% | * | * |
| **1984** | 30 | 90.9% | 2.8 | * | * | * | 0 | 0.0% | 33 | 1.6 |
| **1985** | 52 | 94.5% | 4.8 | * | * | * | 0 | 0.0% | 55 | 2.5 |
| **1986** | 92 | 97.9% | 8.3 | * | * | * | 0 | 0.0% | 94 | 4.2 |
| **1987** | 138 | 95.2% | 12.1 | * | * | * | 0 | 0.0% | 145 | 6.4 |
| **1988** | 172 | 92.5% | 14.8 | 14 | 7.5% | 1.2 | 0 | 0.0% | 186 | 8.0 |
| **1989** | 259 | 94.2% | 21.7 | 16 | 5.8% | 1.4 | 0 | 0.0% | 275 | 11.6 |
| **1990** | 272 | 93.2% | 22.4 | 20 | 6.8% | 1.7 | 0 | 0.0% | 292 | 12.1 |
| **1991** | 322 | 95.5% | 26.1 | 15 | 4.5% | 1.2 | 0 | 0.0% | 337 | 13.7 |
| **1992** | 358 | 94.2% | 28.4 | 22 | 5.8% | 1.8 | 0 | 0.0% | 380 | 15.1 |
| **1993** | 307 | 94.2% | 24.0 | 19 | 5.8% | 1.5 | 0 | 0.0% | 326 | 12.8 |
| **1994** | 324 | 92.0% | 25.2 | 27 | 7.7% | 2.1 | * | * | 352 | 13.7 |
| **1995** | 347 | 94.8% | 26.7 | 19 | 5.2% | 1.5 | 0 | 0.0% | 366 | 14.1 |
| **1996** | 227 | 91.9% | 17.2 | 20 | 8.1% | 1.5 | 0 | 0.0% | 247 | 9.3 |
| **1997** | 141 | 90.4% | 10.5 | 15 | 9.6% | 1.1 | 0 | 0.0% | 156 | 5.8 |
| **1998** | 104 | 89.7% | 7.6 | 12 | 10.3% | 0.9 | 0 | 0.0% | 116 | 4.2 |
| **1999** | 94 | 88.7% | 6.7 | 12 | 11.3% | 0.9 | 0 | 0.0% | 106 | 3.8 |
| **2000** | 69 | 84.1% | 4.9 | 12 | 14.6% | 0.8 | * | * | 82 | 2.9 |
| **2001** | 86 | 85.1% | 6.0 | 15 | 14.9% | 1.0 | 0 | 0.0% | 101 | 3.5 |
| **2002** | 83 | 85.6% | 5.7 | 14 | 14.4% | 1.0 | 0 | 0.0% | 97 | 3.3 |
| **2003** | 90 | 87.4% | 6.2 | 13 | 12.6% | 0.9 | 0 | 0.0% | 103 | 3.5 |
| **2004** | 79 | 89.8% | 5.4 | * | * | * | 0 | 0.0% | 88 | 3.0 |
| **2005** | 88 | 77.9% | 6.0 | 24 | 21.2% | 1.6 | * | * | 113 | 3.8 |
| **2006** | 97 | 89.0% | 6.6 | 12 | 11.0% | 0.8 | 0 | 0.0% | 109 | 3.7 |
| **2007** | 77 | 86.5% | 5.2 | 11 | 12.4% | 0.7 | * | * | 89 | 3.0 |
| **2008** | 58 | 72.5% | 3.9 | 21 | 26.3% | 1.4 | * | * | 80 | 2.7 |
| **2009** | 79 | 92.9% | 5.3 | * | * | * | 0 | 0.0% | 85 | 2.8 |
| **2010** | 64 | 94.1% | 4.3 | * | * | * | 0 | 0.0% | 68 | 2.3 |
| **2011** | 83 | 83.8% | 5.5 | 14 | 14.1% | 0.9 | * | * | 99 | 3.2 |
| **2012** | 72 | 82.8% | 4.7 | 15 | 17.2% | 1.0 | 0 | 0.0% | 87 | 2.8 |
| **2013** | 64 | 81.0% | 4.2 | 13 | 16.5% | 0.8 | * | * | 79 | 2.5 |
| **2014** | 74 | 87.1% | 4.8 | 11 | 12.9% | 0.7 | 0 | 0.0% | 85 | 2.7 |
| **2015** | 79 | 86.8% | 5.0 | 10 | 11.0% | 0.6 | * | * | 91 | 2.9 |
| **2016** | 79 | 88.8% | 5.0 | * | * | * | * | * | 89 | 2.8 |
| **2017** | 92 | 92.0% | 5.8 | * | * | * | * | * | 100 | 3.1 |
| **2018** | 71 | 86.6% | 4.4 | 10 | 12.2% | 0.6 | * | * | 82 | 2.5 |
| **Total** | **4,731** | **91.0%** | **295.8** | **454** | **8.7%** | **28.0** | **16** | **0.3%** | **5,201** | **161.7** |

Note 1: Transgender persons are all male to female. Rate not calculated due to lack of population estimates for people who identify as transgender.
*Fewer than 10 deaths.
Data Sources:
HIV Case Registry, data as of January 31, 2019.
State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.
State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.
State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.
State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.
State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.
Rate in each year is per 100,000 population in that year.
Total rate is per 100,000 2018 population.

**Table 1.5 (Figures 1.12-1.13): Persons Currently Living in Orange County with HIV (PLWH) by Race/Ethnicity and Current Age and Mode of Exposure**

| Current Age | White | | | Black | | | Hispanic | | | Asian | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **0-18** | 49 | 2.1% | 21.4 | 23 | 6.5% | 233.9 | 83 | 2.7% | 22.6 | 11 | 2.2% | 9.0 |
| **19-25** | 353 | 15.2% | 302.7 | 76 | 21.5% | 1,472.6 | 707 | 23.0% | 482.4 | 85 | 17.1% | 163.3 |
| **26-35** | 809 | 34.9% | 564.4 | 127 | 36.0% | 1,908.3 | 1270 | 41.3% | 791.5 | 202 | 40.6% | 298.2 |
| **36-45** | 659 | 28.4% | 440.7 | 92 | 26.1% | 1,360.1 | 703 | 22.9% | 430.2 | 131 | 26.3% | 158.6 |
| **46-55** | 333 | 14.4% | 166.4 | 31 | 8.8% | 399.7 | 245 | 8.0% | 162.8 | 48 | 9.6% | 51.1 |
| **56+** | 115 | 5.0% | 22.9 | * | * | * | 67 | 2.2% | 41.8 | 21 | 4.2% | 13.2 |
| **Total** | **2,318** | **100.0%** | **172.8** | **353** | **100.0%** | **727.0** | **3,075** | **100.0%** | **267.7** | **498** | **100.0%** | **86.3** |

| Current Age | Pacific Islander | | | American Indian/ Alaskan Native | | | More than One Race | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **0-18** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 7 | 7.4% | 16.3 |
| **19-25** | * | * | * | * | * | * | 12 | 12.6% | 100.0 |
| **26-35** | 10 | 47.6% | 746.3 | * | * | * | 35 | 36.8% | 350.2 |
| **36-45** | * | * | * | * | * | * | 24 | 25.3% | 310.2 |
| **46-55** | * | * | * | * | * | * | 15 | 15.8% | 211.0 |
| **56+** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **Total** | **21** | **100.0%** | **249.9** | * | * | * | **95** | **100.0%** | **105.2** |

| Mode of Exposure | White | | Black | | Hispanic | | Asian | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| **MSM** | 1,735 | 74.8% | 181 | 51.3% | 2,271 | 73.9% | 382 | 76.7% |
| **IDU** | 174 | 7.5% | 31 | 8.8% | 178 | 5.8% | * | * |
| **MSM/IDU** | 144 | 6.2% | 11 | 3.1% | 127 | 4.1% | 13 | 2.6% |
| **Heterosexual** | 200 | 8.6% | 99 | 28.0% | 400 | 13.0% | 63 | 12.7% |
| **Hemophilia/Transfusion** | 15 | 0.6% | * | * | 17 | 0.6% | * | * |
| **Perinatal** | * | * | 13 | 3.7% | 22 | 0.7% | * | * |
| **Other Pediatric** | * | * | * | * | * | * | * | * |
| **Unknown** | 43 | 1.9% | 13 | 3.7% | 59 | 1.9% | 21 | 4.2% |
| **Total** | **2,318** | **100.0%** | **353** | **100.0%** | **3,075** | **100.0%** | **498** | **100.0%** |

| Mode of Exposure | Pacific Islander | | American Indian/ Alaskan Native | | More than One Race | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| **MSM** | 19 | 90.5% | * | * | 72 | 75.8% |
| **IDU** | 0 | 0.0% | 0 | 0.0% | * | * |
| **MSM/IDU** | 0 | 0.0% | * | * | * | * |
| **Heterosexual** | 0 | 0.0% | 0 | 0.0% | * | * |
| **Hemophilia/Transfusion** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| **Perinatal** | 0 | 0.0% | 0 | 0.0% | * | * |
| **Other Pediatric** | 0 | 0.0% | 0 | 0.0% | * | * |
| **Unknown** | * | * | 0 | 0.0% | * | * |
| **Total** | **21** | **100.0%** | * | * | **95** | **100.0%** |

*Fewer than 10 PLWH.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate is per 100,000 2018 population.

## Table 1.6a (Figure 1.14): HIV Cases by Year of Diagnosis and Race/Ethnicity, Orange County, 1980-2018

| Year | White | | | Black | | | Hispanic | | | Asian | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **1980** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | NC |
| **1981** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | NC |
| **1982** | 12 | 66.7% | 0.8 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| **1983** | 42 | 80.8% | 2.7 | * | * | * | * | * | * | 0 | 0.0% | NC |
| **1984** | 100 | 85.5% | 6.6 | * | * | * | 10 | 8.5% | 2.5 | * | * | * |
| **1985** | 261 | 81.3% | 17.1 | 14 | 4.4% | 43.8 | 40 | 12.5% | 9.3 | * | * | * |
| **1986** | 316 | 83.4% | 20.6 | 15 | 4.0% | 44.8 | 41 | 10.8% | 9.0 | * | * | * |
| **1987** | 438 | 78.4% | 28.4 | 25 | 4.5% | 71.6 | 88 | 15.7% | 18.1 | * | * | * |
| **1988** | 570 | 76.2% | 36.9 | 24 | 3.2% | 66.0 | 144 | 19.3% | 28.0 | * | * | * |
| **1989** | 511 | 71.9% | 32.9 | 27 | 3.8% | 71.2 | 162 | 22.8% | 29.8 | 10 | 1.4% | NC |
| **1990** | 436 | 73.2% | 28.2 | 30 | 5.0% | 76.1 | 118 | 19.8% | 20.7 | * | * | * |
| **1991** | 378 | 67.5% | 24.5 | 29 | 5.2% | 71.6 | 137 | 24.5% | 22.8 | 12 | 2.1% | NC |
| **1992** | 328 | 63.2% | 21.3 | 26 | 5.0% | 62.3 | 146 | 28.1% | 23.0 | 12 | 2.3% | NC |
| **1993** | 271 | 59.6% | 17.7 | 27 | 5.9% | 63.3 | 144 | 31.6% | 21.6 | 11 | 2.4% | NC |
| **1994** | 219 | 56.3% | 14.5 | 29 | 7.5% | 66.8 | 128 | 32.9% | 18.5 | 10 | 2.6% | NC |
| **1995** | 203 | 52.9% | 13.6 | 18 | 4.7% | 40.7 | 146 | 38.0% | 20.3 | 10 | 2.6% | NC |
| **1996** | 204 | 50.4% | 13.7 | 25 | 6.2% | 55.3 | 156 | 38.5% | 20.8 | 15 | 3.7% | NC |
| **1997** | 162 | 47.6% | 10.9 | 20 | 5.9% | 43.1 | 139 | 40.9% | 17.8 | 10 | 2.9% | NC |
| **1998** | 104 | 36.5% | 7.0 | 18 | 6.3% | 37.8 | 149 | 52.3% | 18.3 | 10 | 3.5% | NC |
| **1999** | 136 | 46.1% | 9.2 | 17 | 5.8% | 34.8 | 123 | 41.7% | 14.5 | 11 | 3.7% | NC |
| **2000** | 120 | 40.5% | 8.2 | 14 | 4.7% | 32.0 | 150 | 50.7% | 17.2 | * | * | * |
| **2001** | 165 | 49.1% | 11.3 | 19 | 5.7% | 43.1 | 134 | 39.9% | 15.0 | 15 | 4.5% | 3.5 |
| **2002** | 135 | 37.1% | 9.3 | 24 | 6.6% | 54.3 | 180 | 49.5% | 19.7 | 19 | 5.2% | 4.3 |
| **2003** | 141 | 39.4% | 9.7 | 23 | 6.4% | 51.8 | 170 | 47.5% | 18.3 | 16 | 4.5% | 3.6 |
| **2004** | 132 | 36.0% | 9.2 | 17 | 4.6% | 38.2 | 182 | 49.6% | 19.3 | 28 | 7.6% | 6.1 |
| **2005** | 142 | 40.3% | 10.0 | 22 | 6.3% | 49.5 | 164 | 46.6% | 17.2 | 14 | 4.0% | 3.0 |
| **2006** | 140 | 40.2% | 10.0 | 10 | 2.9% | 22.6 | 168 | 48.3% | 17.5 | 26 | 7.5% | 5.5 |
| **2007** | 146 | 40.3% | 10.5 | 20 | 5.5% | 45.1 | 165 | 45.6% | 17.0 | 25 | 6.9% | 5.2 |
| **2008** | 138 | 40.5% | 10.0 | 11 | 3.2% | 24.7 | 157 | 46.0% | 15.9 | 23 | 6.7% | 4.7 |
| **2009** | 139 | 42.0% | 10.2 | 17 | 5.1% | 38.1 | 152 | 45.9% | 15.1 | 20 | 6.0% | 4.0 |
| **2010** | 102 | 34.3% | 7.7 | 15 | 5.1% | 33.5 | 136 | 45.8% | 13.4 | 31 | 10.4% | 5.8 |
| **2011** | 114 | 36.2% | 8.5 | 11 | 3.5% | 24.2 | 156 | 49.5% | 15.0 | 26 | 8.3% | 4.8 |
| **2012** | 90 | 33.0% | 6.7 | 10 | 3.7% | 21.7 | 126 | 46.2% | 11.9 | 41 | 15.0% | 7.5 |
| **2013** | 90 | 29.5% | 6.7 | 11 | 3.6% | 23.7 | 154 | 50.5% | 14.3 | 41 | 13.4% | 7.4 |
| **2014** | 98 | 35.1% | 7.3 | 12 | 4.3% | 25.6 | 126 | 45.2% | 11.5 | 37 | 13.3% | 6.6 |
| **2015** | 111 | 33.5% | 8.3 | 13 | 3.9% | 27.5 | 162 | 48.9% | 14.6 | 36 | 10.9% | 6.3 |
| **2016** | 101 | 30.4% | 7.5 | 20 | 6.0% | 42.0 | 161 | 48.5% | 14.3 | 40 | 12.0% | 7.0 |
| **2017** | 114 | 38.0% | 8.5 | 12 | 4.0% | 24.9 | 126 | 42.0% | 11.1 | 43 | 14.3% | 7.5 |
| **2018** | 84 | 30.0% | 6.3 | 11 | 3.9% | 22.7 | 153 | 54.6% | 13.3 | 30 | 10.7% | 5.2 |
| **Total** | **6,996** | **52.6%** | **521.5** | **640** | **4.8%** | **1,318.1** | **4,808** | **36.1%** | **418.5** | **663** | **5.0%** | **114.9** |

*Fewer than 10 cases.
NC: Rate not calculated due to lack of population estimates.
Data Sources:
HIV Case Registry, data as of January 31, 2019.
State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.
State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1990–1999.* Sacramento, CA, Revised May 2009.
State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.
State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.
State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.
Rate in each year is per 100,000 population in that year.
Total rate is per 100,000 2018 population.

**Table 1.6b (Figure 1.14): HIV Cases by Year of Diagnosis and Race/Ethnicity, Orange County, 1980-2018**

| Year | Pacific Islander | | | American Indian/ Alaskan Native | | | More than One Race | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| 1980 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1981 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1982 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1983 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1984 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1985 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1986 | 0 | 0.0% | NC | * | * | * | * | * | * |
| 1987 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1988 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1989 | 0 | 0.0% | NC | * | * | * | 0 | 0.0% | NC |
| 1990 | 0 | 0.0% | NC | * | * | * | 0 | 0.0% | NC |
| 1991 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1992 | 0 | 0.0% | NC | * | * | * | * | * | * |
| 1993 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1994 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1995 | 0 | 0.0% | NC | * | * | * | * | * | * |
| 1996 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1997 | * | * | * | * | * | * | * | * | * |
| 1998 | 0 | 0.0% | NC | * | * | * | * | * | * |
| 1999 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 2000 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2001 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2002 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2003 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2004 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2005 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2006 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2007 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2008 | * | * | * | 0 | 0.0% | 0.0 | 10 | 2.9% | 15.9 |
| 2009 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2010 | * | * | * | 0 | 0.0% | 0.0 | 10 | 3.4% | 14.6 |
| 2011 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| 2012 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| 2013 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2014 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| 2015 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| 2016 | * | * | * | * | * | * | * | * | * |
| 2017 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| 2018 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| **Total** | **20** | **0.2%** | **238.0** | **16** | **0.1%** | **249.2** | **162** | **1.2%** | **179.3** |

*Fewer than 10 cases.

NC: Rate not calculated due to lack of population estimates.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.7a (Figure 1.15): Deaths (regardless of cause) Among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Race/Ethnicity, 1981-2018**

| Year | White | | | Black | | | Hispanic | | | Asian | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| 1981 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | 0.0 |
| 1982 | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | 0.0 |
| 1983 | * | * | * | * | * | * | * | * | * | 0 | 0.0% | 0.0 |
| 1984 | 27 | 23.1% | 1.8 | * | * | * | * | * | * | * | * | * |
| 1985 | 51 | 15.9% | 3.3 | * | * | * | * | * | * | 0 | 0.0% | 0.0 |
| 1986 | 80 | 21.1% | 5.2 | * | * | * | 10 | 2.6% | 2.2 | * | * | * |
| 1987 | 125 | 22.4% | 8.1 | * | * | * | 15 | 2.7% | 3.1 | 0 | 0.0% | 0.0 |
| 1988 | 156 | 20.9% | 10.1 | * | * | * | 22 | 2.9% | 4.3 | * | * | * |
| 1989 | 207 | 29.1% | 13.3 | 12 | 1.7% | 31.6 | 50 | 7.0% | 9.2 | * | * | * |
| 1990 | 240 | 40.3% | 15.5 | * | * | * | 44 | 7.4% | 7.7 | * | * | * |
| 1991 | 258 | 46.1% | 16.7 | * | * | * | 67 | 12.0% | 11.1 | * | * | * |
| 1992 | 289 | 55.7% | 18.8 | 19 | 3.7% | 45.5 | 68 | 13.1% | 10.7 | * | * | * |
| 1993 | 244 | 53.6% | 16.0 | 18 | 4.0% | 42.2 | 60 | 13.2% | 9.0 | * | * | * |
| 1994 | 259 | 66.6% | 17.1 | 15 | 3.9% | 34.5 | 73 | 18.8% | 10.6 | * | * | * |
| 1995 | 265 | 69.0% | 17.7 | 17 | 4.4% | 38.4 | 79 | 20.6% | 11.0 | * | * | * |
| 1996 | 157 | 38.8% | 10.6 | 13 | 3.2% | 28.7 | 68 | 16.8% | 9.1 | * | * | * |
| 1997 | 95 | 27.9% | 6.4 | 11 | 3.2% | 23.7 | 45 | 13.2% | 5.8 | * | * | * |
| 1998 | 72 | 25.3% | 4.9 | * | * | * | 33 | 11.6% | 4.1 | * | * | * |
| 1999 | 63 | 21.4% | 4.3 | * | * | * | 34 | 11.5% | 4.0 | * | * | * |
| 2000 | 50 | 16.9% | 3.4 | * | * | * | 26 | 8.8% | 3.0 | 0 | 0.0% | 0.0 |
| 2001 | 60 | 17.9% | 4.1 | * | * | * | 34 | 10.1% | 3.8 | * | * | * |
| 2002 | 57 | 15.7% | 3.9 | 11 | 3.0% | 24.9 | 27 | 7.4% | 3.0 | * | * | * |
| 2003 | 54 | 15.1% | 3.7 | 11 | 3.1% | 24.8 | 36 | 10.1% | 3.9 | * | * | * |
| 2004 | 53 | 14.4% | 3.7 | * | * | 6.7 | 23 | 6.3% | 2.4 | * | * | * |
| 2005 | 75 | 21.3% | 5.3 | * | * | * | 23 | 6.5% | 2.4 | * | * | * |
| 2006 | 63 | 18.1% | 4.5 | * | * | * | 38 | 10.9% | 4.0 | * | * | * |
| 2007 | 46 | 12.7% | 3.3 | * | * | * | 31 | 8.6% | 3.2 | * | * | * |
| 2008 | 42 | 12.3% | 3.0 | * | * | * | 30 | 8.8% | 3.0 | * | * | * |
| 2009 | 42 | 12.7% | 3.1 | * | * | * | 37 | 11.2% | 3.7 | * | * | * |
| 2010 | 43 | 14.5% | 3.2 | * | * | * | 16 | 5.4% | 1.6 | * | * | * |
| 2011 | 53 | 16.8% | 4.0 | * | * | * | 30 | 9.5% | 2.9 | * | * | * |
| 2012 | 52 | 19.0% | 3.9 | * | * | * | 24 | 8.8% | 2.3 | * | * | * |
| 2013 | 41 | 13.4% | 3.1 | * | * | * | 30 | 9.8% | 2.8 | * | * | * |
| 2014 | 50 | 17.9% | 3.7 | * | * | * | 26 | 9.3% | 2.4 | * | * | * |
| 2015 | 52 | 15.7% | 3.9 | * | * | * | 29 | 8.8% | 2.6 | * | * | * |
| 2016 | 49 | 14.8% | 3.7 | * | * | * | 25 | 7.5% | 2.2 | * | * | * |
| 2017 | 60 | 20.0% | 4.5 | * | * | * | 29 | 9.7% | 2.6 | * | * | * |
| 2018 | 42 | 15.0% | 3.1 | * | * | * | 31 | 11.1% | 2.7 | * | * | * |
| **Total** | **3,576** | **26.9%** | **266.5** | **248** | **1.9%** | **510.8** | **1,222** | **9.2%** | **106.4** | **106** | **0.8%** | **18.4** |

*Fewer than 10 deaths.

NC: Rate not calculated due to lack of population estimates.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.7b (Figure 1.15): Deaths (regardless of cause) Among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Race/Ethnicity, 1981-2018**

| Year | Pacific Islander | | | American Indian/ Alaskan Native | | | More than One Race | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| 1981 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1982 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1983 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1984 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1985 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1986 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1987 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1988 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1989 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1990 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1991 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1992 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1993 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | * | * | * |
| 1994 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1995 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1996 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1997 | 0 | 0.0% | NC | * | * | * | 0 | 0.0% | NC |
| 1998 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 1999 | 0 | 0.0% | NC | 0 | 0.0% | 0.0 | 0 | 0.0% | NC |
| 2000 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| 2001 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| 2002 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| 2003 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| 2004 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2005 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2006 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2007 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2008 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2009 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| 2010 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2011 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2012 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2013 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2014 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2015 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2016 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2017 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| 2018 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **Total** | **0** | **0.0%** | **0.0** | * | * | * | **43** | **0.3%** | **47.6** |

*Fewer than 10 deaths.

NC: Rate not calculated due to lack of population estimates.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998. State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009. State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.8 (Figure 1.17): Persons Currently Living in Orange County with HIV (PLWH) by Current Age and Mode of Exposure**

| Mode of Exposure | 0-12 | | 13-18 | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| MSM | 0 | 0.0% | * | * |
| Heterosexual | 0 | 0.0% | * | * |
| Perinatal | * | * | * | * |
| Pediatric-Unknown | * | * | 0 | 0.0% |
| Total | * | * | 13 | 100.0% |

| Mode of Exposure | 19-25 | | 26-35 | | 36-45 | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| MSM | 217 | 77.5% | 857 | 82.6% | 1,007 | 73.4% |
| IDU | 10 | 3.6% | 19 | 1.8% | 65 | 4.7% |
| MSM/IDU | * | 3.2% | 45 | 4.3% | 72 | 5.2% |
| Heterosexual | 18 | 6.4% | 66 | 6.4% | 184 | 13.4% |
| Hemophilia/Transfusion | 0 | 0.0% | * | * | * | * |
| Perinatal | 19 | 6.8% | * | * | 0 | 0.0% |
| Other Pediatric | 0 | 0.0% | * | * | * | * |
| Unknown | * | * | 38 | 3.7% | 34 | 2.5% |
| Total | 280 | 100.0% | 1,037 | 100.0% | 1,372 | 100.0% |

| Mode of Exposure | 46-55 | | 56+ | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| MSM | 1,339 | 71.6% | 1243 | 69.4% |
| IDU | 128 | 6.8% | 177 | 9.9% |
| MSM/IDU | 101 | 5.4% | 73 | 4.1% |
| Heterosexual | 250 | 13.4% | 250 | 14.0% |
| Hemophilia/Transfusion | 15 | 0.8% | 22 | 1.2% |
| Other/Unknown | 36 | 1.9% | 26 | 1.5% |
| Total | 1,869 | 100.0% | 1,791 | 100.0% |

*Fewer than 10 PLWH.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

**Table 1.9a (Figure 1.18): HIV Cases by Year of Diagnosis and Age at Diagnosis, Orange County, 1980-2018**

| Year | 0-12 | | | 13-18 | | | 19-25 | | | 26-35 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **1980** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **1981** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **1982** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | * | * | * |
| **1983** | * | * | * | * | * | * | * | * | * | 16 | 30.8% | 4.2 |
| **1984** | * | * | * | * | * | * | 29 | 24.8% | 9.7 | 53 | 45.3% | 13.8 |
| **1985** | * | * | * | * | * | * | 87 | 27.1% | 28.5 | 129 | 40.2% | 32.4 |
| **1986** | * | * | * | 11 | 2.9% | 5.0 | 73 | 19.3% | 23.6 | 167 | 44.1% | 40.4 |
| **1987** | * | * | * | * | * | * | 83 | 14.8% | 26.8 | 246 | 44.0% | 57.2 |
| **1988** | * | * | * | * | * | * | 103 | 13.8% | 32.6 | 361 | 48.3% | 81.0 |
| **1989** | * | * | * | * | * | * | 99 | 13.9% | 30.9 | 309 | 43.5% | 66.7 |
| **1990** | * | * | * | * | * | * | 76 | 12.8% | 24.0 | 304 | 51.0% | 63.9 |
| **1991** | * | * | * | 0 | 0.0% | 0.0 | 59 | 10.5% | 19.2 | 259 | 46.3% | 53.9 |
| **1992** | * | * | * | * | * | * | 68 | 13.1% | 22.7 | 238 | 45.9% | 49.2 |
| **1993** | * | * | * | * | * | * | 55 | 12.1% | 18.8 | 206 | 45.3% | 42.6 |
| **1994** | * | * | * | * | * | * | 44 | 11.3% | 15.3 | 163 | 41.9% | 34.0 |
| **1995** | * | * | * | * | * | * | 41 | 10.7% | 14.6 | 184 | 47.9% | 38.6 |
| **1996** | * | * | * | * | * | * | 36 | 8.9% | 13.1 | 175 | 43.2% | 36.7 |
| **1997** | * | * | * | * | * | * | 38 | 11.2% | 14.0 | 137 | 40.3% | 28.5 |
| **1998** | * | * | * | * | * | * | 45 | 15.8% | 16.6 | 111 | 38.9% | 23.1 |
| **1999** | * | * | * | * | * | * | 27 | 9.2% | 10.0 | 112 | 38.0% | 23.3 |
| **2000** | * | * | * | * | * | * | 31 | 10.5% | 11.2 | 113 | 38.2% | 23.6 |
| **2001** | 0 | 0.0% | 0.0 | * | * | * | 33 | 9.8% | 12.0 | 118 | 35.1% | 25.0 |
| **2002** | * | * | * | * | * | * | 47 | 12.9% | 16.9 | 128 | 35.2% | 27.7 |
| **2003** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 43 | 12.0% | 15.3 | 130 | 36.3% | 28.7 |
| **2004** | * | * | * | * | * | * | 61 | 16.6% | 21.4 | 120 | 32.7% | 27.1 |
| **2005** | * | * | * | * | * | * | 61 | 17.3% | 21.2 | 116 | 33.0% | 27.0 |
| **2006** | * | * | * | * | * | * | 59 | 17.0% | 20.3 | 116 | 33.3% | 27.8 |
| **2007** | 0 | 0.0% | 0.0 | * | * | * | 65 | 18.0% | 22.2 | 111 | 30.7% | 27.0 |
| **2008** | * | * | * | * | * | * | 57 | 16.7% | 19.4 | 121 | 35.5% | 29.6 |
| **2009** | * | * | * | * | * | * | 67 | 20.2% | 22.6 | 91 | 27.5% | 22.2 |
| **2010** | * | * | * | * | * | * | 68 | 22.9% | 22.6 | 96 | 32.3% | 23.3 |
| **2011** | 0 | 0.0% | 0.0 | * | * | * | 74 | 23.5% | 24.5 | 97 | 30.8% | 23.6 |
| **2012** | * | * | * | * | * | * | 49 | 17.9% | 15.9 | 99 | 36.3% | 24.1 |
| **2013** | * | * | * | * | * | * | 59 | 19.3% | 18.7 | 97 | 31.8% | 23.7 |
| **2014** | * | * | * | * | * | * | 64 | 22.9% | 20.0 | 79 | 28.3% | 19.4 |
| **2015** | 0 | 0.0% | 0.0 | * | * | * | 75 | 22.7% | 23.0 | 115 | 34.7% | 28.5 |
| **2016** | 0 | 0.0% | 0.0 | 11 | 3.3% | 4.2 | 87 | 26.2% | 26.3 | 120 | 36.1% | 30.1 |
| **2017** | 0 | 0.0% | 0.0 | * | * | * | 68 | 22.7% | 20.4 | 110 | 36.7% | 28.0 |
| **2018** | 0 | 0.0% | 0.0 | * | * | * | 77 | 27.5% | 23.0 | 88 | 31.4% | 22.5 |
| **Total** | **81** | **0.6%** | **15.9** | **172** | **1.3%** | **65.6** | **2,123** | **16.0%** | **635.4** | **5,245** | **39.4%** | **1,343.7** |

*Fewer than 10 cases.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.9b (Figure 1.18): HIV Cases by Year of Diagnosis and Age at Diagnosis, Orange County, 1980-2018**

| Year | 36-45 | | | 46-55 | | | 56+ | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **1980** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| **1981** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| **1982** | * | * | * | * | * | * | * | * | * |
| **1983** | 16 | 30.8% | 5.8 | * | * | * | * | * | * |
| **1984** | 21 | 17.9% | 7.3 | * | * | * | * | * | * |
| **1985** | 67 | 20.9% | 22.4 | 19 | 5.9% | 9.2 | 11 | 3.4% | 3.2 |
| **1986** | 72 | 19.0% | 23.0 | 38 | 10.0% | 18.0 | 16 | 4.2% | 4.6 |
| **1987** | 146 | 26.1% | 44.8 | 49 | 8.8% | 22.6 | 27 | 4.8% | 7.5 |
| **1988** | 175 | 23.4% | 51.8 | 64 | 8.6% | 28.8 | 35 | 4.7% | 9.6 |
| **1989** | 202 | 28.4% | 57.7 | 64 | 9.0% | 27.4 | 26 | 3.7% | 7.0 |
| **1990** | 144 | 24.2% | 39.8 | 49 | 8.2% | 20.2 | 16 | 2.7% | 4.3 |
| **1991** | 142 | 25.4% | 38.0 | 63 | 11.3% | 25.3 | 33 | 5.9% | 8.7 |
| **1992** | 140 | 27.0% | 36.3 | 51 | 9.8% | 19.8 | 17 | 3.3% | 4.4 |
| **1993** | 128 | 28.1% | 32.7 | 41 | 9.0% | 15.2 | 15 | 3.3% | 3.8 |
| **1994** | 123 | 31.6% | 31.0 | 34 | 8.7% | 12.2 | 17 | 4.4% | 4.3 |
| **1995** | 107 | 27.9% | 26.4 | 35 | 9.1% | 12.2 | 10 | 2.6% | 2.5 |
| **1996** | 119 | 29.4% | 28.5 | 50 | 12.3% | 16.7 | 19 | 4.7% | 4.6 |
| **1997** | 106 | 31.2% | 24.6 | 36 | 10.6% | 11.6 | 14 | 4.1% | 3.3 |
| **1998** | 88 | 30.9% | 19.8 | 28 | 9.8% | 8.7 | * | * | * |
| **1999** | 110 | 37.3% | 24.1 | 32 | 10.8% | 9.6 | 11 | 3.7% | 2.4 |
| **2000** | 94 | 31.8% | 20.0 | 40 | 13.5% | 11.5 | * | * | * |
| **2001** | 124 | 36.9% | 26.1 | 40 | 11.9% | 11.1 | 15 | 4.5% | 3.1 |
| **2002** | 115 | 31.6% | 24.0 | 51 | 14.0% | 13.8 | 18 | 4.9% | 3.6 |
| **2003** | 130 | 36.3% | 27.1 | 35 | 9.8% | 9.3 | 20 | 5.6% | 3.8 |
| **2004** | 118 | 32.2% | 24.6 | 48 | 13.1% | 12.5 | 12 | 3.3% | 2.2 |
| **2005** | 105 | 29.8% | 22.1 | 48 | 13.6% | 12.2 | 13 | 3.7% | 2.4 |
| **2006** | 97 | 27.9% | 20.6 | 53 | 15.2% | 13.3 | 15 | 4.3% | 2.7 |
| **2007** | 116 | 32.0% | 24.7 | 50 | 13.8% | 12.2 | 16 | 4.4% | 2.8 |
| **2008** | 94 | 27.6% | 20.2 | 50 | 14.7% | 11.9 | 10 | 2.9% | 1.7 |
| **2009** | 100 | 30.2% | 22.1 | 50 | 15.1% | 11.5 | 15 | 4.5% | 2.4 |
| **2010** | 70 | 23.6% | 15.7 | 41 | 13.8% | 9.4 | 16 | 5.4% | 2.5 |
| **2011** | 85 | 27.0% | 19.2 | 41 | 13.0% | 9.2 | 13 | 4.1% | 2.0 |
| **2012** | 61 | 22.3% | 13.9 | 43 | 15.8% | 9.6 | 11 | 4.0% | 1.6 |
| **2013** | 73 | 23.9% | 16.8 | 48 | 15.7% | 10.6 | 22 | 7.2% | 3.1 |
| **2014** | 56 | 20.1% | 13.0 | 49 | 17.6% | 10.8 | 22 | 7.9% | 3.0 |
| **2015** | 64 | 19.3% | 15.1 | 51 | 15.4% | 11.1 | 19 | 5.7% | 2.5 |
| **2016** | 47 | 14.2% | 11.3 | 45 | 13.6% | 9.8 | 22 | 6.6% | 2.8 |
| **2017** | 52 | 17.3% | 12.6 | 37 | 12.3% | 8.0 | 28 | 9.3% | 3.4 |
| **2018** | 52 | 18.6% | 12.6 | 34 | 12.1% | 7.4 | 24 | 8.6% | 2.8 |
| **Total** | **3,561** | **26.8%** | **864.0** | **1,522** | **11.4%** | **329.5** | **601** | **4.5%** | **70.7** |

*Fewer than 10 cases.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.10a (Figure 1.19): Deaths among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Age at Death, 1981-2018**

| Year | 0-12 | | | 13-18 | | | 19-25 | | | 26-35 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Num-ber | Per-cent | Rate | Num-ber | Per-cent | Rate | Num-ber | Per-cent | Rate | Num-ber | Per-cent | Rate |
| **1981** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **1982** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **1983** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * |
| **1984** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| **1985** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 22 | 40.0% | 5.5 |
| **1986** | * | * | * | * | * | * | * | * | * | 36 | 38.3% | 8.7 |
| **1987** | * | * | * | 0 | 0.0% | 0.0 | 15 | 10.3% | 4.8 | 50 | 34.5% | 11.6 |
| **1988** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 68 | 36.6% | 15.3 |
| **1989** | * | * | * | 0 | 0.0% | 0.0 | 13 | 4.7% | 4.1 | 102 | 37.1% | 22.0 |
| **1990** | * | * | * | * | * | * | * | * | * | 127 | 43.5% | 26.7 |
| **1991** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 11 | 3.3% | 3.6 | 138 | 40.9% | 28.7 |
| **1992** | * | * | * | * | * | * | 14 | 3.7% | 4.7 | 135 | 35.5% | 27.9 |
| **1993** | * | * | * | * | * | * | * | * | * | 121 | 37.1% | 25.0 |
| **1994** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 128 | 36.4% | 26.7 |
| **1995** | * | * | * | * | * | * | * | * | * | 131 | 35.8% | 27.5 |
| **1996** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 84 | 34.0% | 17.6 |
| **1997** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 44 | 28.2% | 9.2 |
| **1998** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 31 | 26.7% | 6.4 |
| **1999** | * | * | * | 0 | 0.0% | 0.0 | * | * | * | 20 | 18.9% | 4.2 |
| **2000** | * | * | * | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 21 | 25.6% | 4.4 |
| **2001** | * | * | * | * | * | * | * | * | * | 14 | 13.9% | 3.0 |
| **2002** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 19 | 19.6% | 4.1 |
| **2003** | * | * | * | * | * | * | * | * | * | 17 | 16.5% | 3.8 |
| **2004** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| **2005** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 12 | 10.6% | 2.8 |
| **2006** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | 11 | 10.1% | 2.6 |
| **2007** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | 10 | 11.2% | 2.4 |
| **2008** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | * | * | * | * | * | * |
| **2009** | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| **2010** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | * | * | * |
| **2011** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | 10 | 10.1% | 2.4 |
| **2012** | 0 | 0.0% | 0.0 | * | * | * | 0 | 0.0% | 0.0 | * | * | * |
| **2013** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | 11 | 13.9% | 2.7 |
| **2014** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | * | * | * |
| **2015** | 0 | 0.0% | 0.0 | * | * | * | * | * | * | * | * | * |
| **2016** | * | * | * | * | * | * | * | * | * | * | * | * |
| **2017** | * | * | * | * | * | * | 0 | 0.0% | 0.0 | 14 | 14.0% | 3.6 |
| **2018** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 10 | 12.2% | 2.6 |
| **Total** | **25** | **0.5%** | **4.9** | **24** | **0.5%** | **9.2** | **122** | **2.3%** | **36.5** | **1,443** | **27.7%** | **369.7** |

*Fewer than 10 deaths.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.10b (Figure 1.19): Deaths among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Age at Death, 1981-2018**

| Year | 36-45 | | | 46-55 | | | 56+ | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate | Number | Percent | Rate |
| **1981** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| **1982** | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 | 0 | 0.0% | 0.0 |
| **1983** | * | * | * | * | * | * | 0 | 0.0% | 0.0 |
| **1984** | 14 | 42.4% | 4.9 | * | * | * | * | * | * |
| **1985** | 18 | 32.7% | 6.0 | * | * | * | * | * | * |
| **1986** | 25 | 26.6% | 8.0 | 19 | 20.2% | 9.0 | * | * | * |
| **1987** | 45 | 31.0% | 13.8 | 21 | 14.5% | 9.7 | 12 | 8.3% | 3.4 |
| **1988** | 57 | 30.6% | 16.9 | 28 | 15.1% | 12.6 | 25 | 13.4% | 6.9 |
| **1989** | 88 | 32.0% | 25.1 | 46 | 16.7% | 19.7 | 25 | 9.1% | 6.7 |
| **1990** | 98 | 33.6% | 27.1 | 36 | 12.3% | 14.8 | 21 | 7.2% | 5.6 |
| **1991** | 103 | 30.6% | 27.6 | 64 | 19.0% | 25.7 | 21 | 6.2% | 5.5 |
| **1992** | 153 | 40.3% | 39.7 | 40 | 10.5% | 15.6 | 34 | 8.9% | 8.8 |
| **1993** | 124 | 38.0% | 31.7 | 52 | 16.0% | 19.3 | 25 | 7.7% | 6.4 |
| **1994** | 143 | 40.6% | 36.0 | 59 | 16.8% | 21.2 | 18 | 5.1% | 4.5 |
| **1995** | 136 | 37.2% | 33.6 | 65 | 17.8% | 22.6 | 29 | 7.9% | 7.2 |
| **1996** | 104 | 42.1% | 24.9 | 39 | 15.8% | 13.0 | 16 | 6.5% | 3.9 |
| **1997** | 65 | 41.7% | 15.1 | 32 | 20.5% | 10.3 | 12 | 7.7% | 2.8 |
| **1998** | 49 | 42.2% | 11.0 | 21 | 18.1% | 6.5 | 13 | 11.2% | 3.0 |
| **1999** | 50 | 47.2% | 10.9 | 25 | 23.6% | 7.5 | * | * | * |
| **2000** | 32 | 39.0% | 6.8 | 17 | 20.7% | 4.9 | 11 | 13.4% | 2.3 |
| **2001** | 45 | 44.6% | 9.5 | 24 | 23.8% | 6.7 | 15 | 14.9% | 3.1 |
| **2002** | 38 | 39.2% | 7.9 | 25 | 25.8% | 6.8 | 14 | 14.4% | 2.8 |
| **2003** | 47 | 45.6% | 9.8 | 25 | 24.3% | 6.6 | 12 | 11.7% | 2.3 |
| **2004** | 29 | 33.0% | 6.0 | 31 | 35.2% | 8.0 | 20 | 22.7% | 3.7 |
| **2005** | 44 | 38.9% | 9.3 | 38 | 33.6% | 9.7 | 15 | 13.3% | 2.7 |
| **2006** | 37 | 33.9% | 7.8 | 30 | 27.5% | 7.5 | 28 | 25.7% | 5.0 |
| **2007** | 25 | 28.1% | 5.3 | 36 | 40.4% | 8.8 | 15 | 16.9% | 2.6 |
| **2008** | 23 | 28.8% | 4.9 | 30 | 37.5% | 7.1 | 21 | 26.3% | 3.6 |
| **2009** | 25 | 29.4% | 5.5 | 32 | 37.6% | 7.4 | 22 | 25.9% | 3.5 |
| **2010** | 12 | 17.6% | 2.7 | 28 | 41.2% | 6.4 | 23 | 33.8% | 3.6 |
| **2011** | 21 | 21.2% | 4.7 | 44 | 44.4% | 9.9 | 22 | 22.2% | 3.3 |
| **2012** | 14 | 16.1% | 3.2 | 43 | 49.4% | 9.6 | 24 | 27.6% | 3.5 |
| **2013** | 13 | 16.5% | 3.0 | 25 | 31.6% | 5.5 | 27 | 34.2% | 3.8 |
| **2014** | 16 | 18.8% | 3.7 | 23 | 27.1% | 5.1 | 39 | 45.9% | 5.3 |
| **2015** | 18 | 19.8% | 4.3 | 31 | 34.1% | 6.8 | 37 | 40.7% | 4.8 |
| **2016** | * | * | * | 33 | 37.1% | 7.2 | 42 | 47.2% | 5.3 |
| **2017** | 13 | 13.0% | 3.2 | 33 | 33.0% | 7.1 | 40 | 40.0% | 4.9 |
| **2018** | * | * | * | 20 | 24.4% | 4.3 | 45 | 54.9% | 5.3 |
| **Total** | **1,738** | **33.4%** | **421.7** | **1,127** | **21.7%** | **244.0** | **749** | **14.4%** | **88.2** |

*Fewer than 10 deaths.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, CA, December 1998.

State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990–1999. Sacramento, CA, Revised May 2009.

State of California, Department of Finance, *E-3 Race / Ethnic Population Estimates with Age and Sex Detail, 2000–2007.* Sacramento, CA, May 2009.

State of California, Department of Finance, *Race/Hispanics Population with Age and Gender Detail, 2000–2010.* Sacramento, California, September 2012.

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

Rate in each year is per 100,000 population in that year.

Total rate is per 100,000 2018 population.

**Table 1.11a (Figure 1.21): HIV Cases by Year of Diagnosis and Mode of Exposure, Orange County, 1980-2018**

| | MSM | | IDU | | MSM / IDU | | Heterosexual | |
|---|---|---|---|---|---|---|---|---|
| Year | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 1980 | 0 | 0.0% | * | * | * | * | 0 | 0.0% |
| 1981 | * | * | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| 1982 | 14 | 77.8% | 0 | 0.0% | * | * | 0 | 0.0% |
| 1983 | 41 | 78.8% | * | * | * | * | 0 | 0.0% |
| 1984 | 88 | 75.2% | * | * | 15 | 12.8% | * | * |
| 1985 | 239 | 74.5% | 26 | 8.1% | 28 | 8.7% | * | * |
| 1986 | 299 | 78.9% | 30 | 7.9% | 27 | 7.1% | * | * |
| 1987 | 399 | 71.4% | 59 | 10.6% | 41 | 7.3% | 19 | 3.4% |
| 1988 | 541 | 72.3% | 90 | 12.0% | 56 | 7.5% | 27 | 3.6% |
| 1989 | 519 | 73.0% | 86 | 12.1% | 47 | 6.6% | 22 | 3.1% |
| 1990 | 429 | 72.0% | 82 | 13.8% | 40 | 6.7% | 20 | 3.4% |
| 1991 | 401 | 71.6% | 63 | 11.3% | 27 | 4.8% | 40 | 7.1% |
| 1992 | 377 | 72.6% | 69 | 13.3% | 26 | 5.0% | 32 | 6.2% |
| 1993 | 306 | 67.3% | 58 | 12.7% | 29 | 6.4% | 39 | 8.6% |
| 1994 | 244 | 62.7% | 64 | 16.5% | 17 | 4.4% | 49 | 12.6% |
| 1995 | 257 | 66.9% | 56 | 14.6% | 19 | 4.9% | 35 | 9.1% |
| 1996 | 271 | 66.9% | 52 | 12.8% | 23 | 5.7% | 45 | 11.1% |
| 1997 | 223 | 65.6% | 35 | 10.3% | 19 | 5.6% | 46 | 13.5% |
| 1998 | 185 | 64.9% | 32 | 11.2% | 15 | 5.3% | 42 | 14.7% |
| 1999 | 192 | 65.1% | 35 | 11.9% | 18 | 6.1% | 41 | 13.9% |
| 2000 | 193 | 65.2% | 30 | 10.1% | 18 | 6.1% | 47 | 15.9% |
| 2001 | 224 | 66.7% | 34 | 10.1% | 25 | 7.4% | 43 | 12.8% |
| 2002 | 251 | 69.0% | 29 | 8.0% | 14 | 3.8% | 59 | 16.2% |
| 2003 | 256 | 71.5% | 23 | 6.4% | 21 | 5.9% | 47 | 13.1% |
| 2004 | 261 | 71.1% | 23 | 6.3% | 12 | 3.3% | 52 | 14.2% |
| 2005 | 263 | 74.7% | 22 | 6.3% | 15 | 4.3% | 42 | 11.9% |
| 2006 | 265 | 76.1% | 21 | 6.0% | 18 | 5.2% | 36 | 10.3% |
| 2007 | 267 | 73.8% | 28 | 7.7% | 17 | 4.7% | 44 | 12.2% |
| 2008 | 266 | 78.0% | 17 | 5.0% | 17 | 5.0% | 34 | 10.0% |
| 2009 | 261 | 78.9% | 13 | 3.9% | 18 | 5.4% | 33 | 10.0% |
| 2010 | 252 | 84.8% | 12 | 4.0% | * | * | 22 | 7.4% |
| 2011 | 254 | 80.6% | 17 | 5.4% | * | * | 28 | 8.9% |
| 2012 | 211 | 77.3% | 10 | 3.7% | 19 | 7.0% | 24 | 8.8% |
| 2013 | 231 | 75.7% | 15 | 4.9% | 13 | 4.3% | 30 | 9.8% |
| 2014 | 216 | 77.4% | 20 | 7.2% | 10 | 3.6% | 21 | 7.5% |
| 2015 | 269 | 81.3% | 12 | 3.6% | 12 | 3.6% | 24 | 7.3% |
| 2016 | 265 | 79.8% | 13 | 3.9% | 14 | 4.2% | 24 | 7.2% |
| 2017 | 213 | 71.0% | 16 | 5.3% | * | * | 37 | 12.3% |
| 2018 | 188 | 67.1% | 19 | 6.8% | 10 | 3.6% | 43 | 15.4% |
| **Total** | **9,634** | **72.4%** | **1,217** | **9.1%** | **735** | **5.5%** | **1,162** | **8.7%** |

*Fewer than 10 cases.
Only adult modes of exposure are shown.
Data Source: HIV Case Registry, data as of January 31, 2019.

**Table 1.11b (Figure 1.21): HIV Cases by Year of Diagnosis and Mode of Exposure, Orange County, 1980-2018**

| Year | Hemophilia/Transfusion | | Unknown | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| 1980 | 0 | 0.0% | 0 | 0.0% |
| 1981 | 0 | 0.0% | 0 | 0.0% |
| 1982 | 0 | 0.0% | 0 | 0.0% |
| 1983 | * | * | 0 | 0.0% |
| 1984 | * | * | * | * |
| 1985 | 16 | 5.0% | * | * |
| 1986 | 11 | 2.9% | * | * |
| 1987 | 24 | 4.3% | 11 | 2.0% |
| 1988 | 19 | 2.5% | 12 | 1.6% |
| 1989 | 16 | 2.3% | 16 | 2.3% |
| 1990 | * | * | 16 | 2.7% |
| 1991 | 14 | 2.5% | 11 | 2.0% |
| 1992 | * | * | 10 | 1.9% |
| 1993 | * | * | 16 | 3.5% |
| 1994 | * | * | * | * |
| 1995 | * | * | * | * |
| 1996 | * | * | * | * |
| 1997 | * | * | 10 | 2.9% |
| 1998 | * | * | 6 | 2.1% |
| 1999 | * | * | * | * |
| 2000 | * | * | * | * |
| 2001 | * | * | * | * |
| 2002 | * | * | * | * |
| 2003 | * | * | * | * |
| 2004 | * | * | 11 | 3.0% |
| 2005 | * | * | * | * |
| 2006 | * | * | * | * |
| 2007 | * | * | * | * |
| 2008 | 0 | 0.0% | * | * |
| 2009 | 0 | 0.0% | * | * |
| 2010 | 0 | 0.0% | * | * |
| 2011 | * | * | * | * |
| 2012 | 0 | 0.0% | * | * |
| 2013 | * | * | 13 | 4.3% |
| 2014 | 0 | 0.0% | 10 | 3.6% |
| 2015 | * | * | 13 | 3.9% |
| 2016 | 0 | 0.0% | 16 | 4.8% |
| 2017 | * | * | 26 | 8.7% |
| 2018 | * | * | 19 | 6.8% |
| **Total** | **165** | **1.2%** | **311** | **2.3%** |

*Fewer than 10 cases.
Only adult modes of exposure are shown.
Persons with a mode of exposure of Hemophilia/Transfusion after 2013 are originally from a foreign country where the exposure occurred.
Data Source: HIV Case Registry, data as of January 31, 2019.

**Table 1.12a (Figure 1.22): Deaths among Persons Diagnosed with HIV While Living in Orange County by Year of Death and Mode of Exposure, 1981-2018**

| Year | MSM | | IDU | | MSM/IDU | | Heterosexual | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| **1981** | 0 | 0.0% | * | * | 0 | 0.0% | 0 | 0.0% |
| **1982** | * | * | 0 | 0.0% | * | * | 0 | 0.0% |
| **1983** | * | * | 0 | 0.0% | * | * | 0 | 0.0% |
| **1984** | 23 | 69.7% | * | * | * | * | 0 | 0.0% |
| **1985** | 38 | 69.1% | * | * | * | * | * | * |
| **1986** | 78 | 83.0% | * | * | * | * | * | * |
| **1987** | 102 | 70.3% | * | * | 16 | 11.0% | * | * |
| **1988** | 130 | 69.9% | 14 | 7.5% | 16 | 8.6% | * | * |
| **1989** | 202 | 73.5% | 33 | 12.0% | 15 | 5.5% | * | * |
| **1990** | 225 | 77.1% | 20 | 6.8% | 18 | 6.2% | * | * |
| **1991** | 261 | 77.4% | 30 | 8.9% | 24 | 7.1% | * | * |
| **1992** | 286 | 75.3% | 38 | 10.0% | 22 | 5.8% | * | * |
| **1993** | 241 | 73.9% | 33 | 10.1% | 21 | 6.4% | 11 | 3.4% |
| **1994** | 258 | 73.3% | 42 | 11.9% | 23 | 6.5% | 15 | 4.3% |
| **1995** | 274 | 74.9% | 43 | 11.7% | 19 | 5.2% | 13 | 3.6% |
| **1996** | 167 | 67.6% | 39 | 15.8% | 17 | 6.9% | 12 | 4.9% |
| **1997** | 97 | 62.2% | 31 | 19.9% | 11 | 7.1% | * | * |
| **1998** | 79 | 68.1% | 19 | 16.4% | * | * | * | * |
| **1999** | 66 | 62.3% | 21 | 19.8% | * | * | * | * |
| **2000** | 46 | 56.1% | 22 | 26.8% | * | * | * | * |
| **2001** | 58 | 57.4% | 19 | 18.8% | * | * | 10 | 9.9% |
| **2002** | 55 | 56.7% | 22 | 22.7% | * | * | * | * |
| **2003** | 65 | 63.1% | 18 | 17.5% | * | * | * | * |
| **2004** | 51 | 58.0% | 16 | 18.2% | * | * | * | * |
| **2005** | 61 | 54.0% | 22 | 19.5% | * | * | 13 | 11.5% |
| **2006** | 77 | 70.6% | 13 | 11.9% | * | * | * | * |
| **2007** | 47 | 52.8% | 23 | 25.8% | * | * | * | * |
| **2008** | 45 | 56.3% | 19 | 23.8% | * | * | * | * |
| **2009** | 64 | 75.3% | * | * | * | * | * | * |
| **2010** | 46 | 67.6% | 12 | 17.6% | * | * | * | * |
| **2011** | 53 | 53.5% | 24 | 24.2% | 12 | 12.1% | * | * |
| **2012** | 53 | 60.9% | 14 | 16.1% | * | * | 11 | 12.6% |
| **2013** | 48 | 60.8% | 15 | 19.0% | * | * | * | * |
| **2014** | 58 | 68.2% | 15 | 17.6% | * | * | * | * |
| **2015** | 65 | 71.4% | * | * | * | * | * | * |
| **2016** | 59 | 66.3% | * | * | * | * | 10 | 11.2% |
| **2017** | 57 | 57.0% | 15 | 15.0% | 13 | 13.0% | * | * |
| **2018** | 50 | 61.0% | 12 | 14.6% | * | * | * | * |
| **Total** | **3,589** | **69.0%** | **683** | **13.1%** | **369** | **7.1%** | **245** | **4.7%** |

*Fewer than 10 deaths.
Only adult modes of exposure are shown.
Data Source: HIV Case Registry, data as of January 31, 2019.

**Table 1.12b (Figure 1.22): HIV Cases by Year of Diagnosis and Mode of Exposure, Orange County, 1981-2018**

| Year | Hemophilia/Transfusion | | Unknown | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| 1981 | 0 | 0.0% | 0 | 0.0% |
| 1982 | 0 | 0.0% | 0 | 0.0% |
| 1983 | 0 | 0.0% | 0 | 0.0% |
| 1984 | 0 | 0.0% | * | * |
| 1985 | * | * | * | * |
| 1986 | * | * | * | * |
| 1987 | * | * | * | * |
| 1988 | 13 | 4.7% | * | * |
| 1989 | 11 | 3.8% | * | * |
| 1990 | 10 | 3.0% | 12 | 3.6% |
| 1991 | * | * | 10 | 2.6% |
| 1992 | 14 | 4.3% | 11 | 3.4% |
| 1993 | * | * | 15 | 4.3% |
| 1994 | * | * | * | * |
| 1995 | * | * | * | * |
| 1996 | * | * | * | * |
| 1997 | * | * | * | * |
| 1998 | * | * | * | * |
| 1999 | 0 | 0.0% | * | * |
| 2000 | * | * | * | * |
| 2001 | 0 | 0.0% | * | * |
| 2002 | 0 | 0.0% | * | * |
| 2003 | 0 | 0.0% | * | * |
| 2004 | * | * | 11 | 9.7% |
| 2005 | * | * | * | * |
| 2006 | 0 | 0.0% | * | * |
| 2007 | * | * | * | * |
| 2008 | * | * | * | * |
| 2009 | * | * | * | * |
| 2010 | * | * | 0 | 0.0% |
| 2011 | 0 | 0.0% | * | * |
| 2012 | * | * | * | * |
| 2013 | * | * | 0 | 0.0% |
| 2014 | * | * | 0 | 0.0% |
| 2015 | * | * | * | * |
| 2016 | * | * | * | * |
| 2017 | * | * | * | * |
| 2018 | 0 | 0.0% | * | * |
| **Total** | **117** | **2.2%** | **173** | **3.3%** |

*Fewer than 10 deaths.
Only adult modes of exposure are shown.
Data Source: HIV Case Registry, data as of January 31, 2019.

**Table 1.13a (Figures 1.23-1.24): Length of Time Between HIV and AIDS Diagnosis, Persons Diagnosed with AIDS After 1995 by Gender, Race/Ethnicity, and Mode of Exposure, Orange County**

| Gender, Race/Ethnicity, and Mode of Exposure | Number | | | Percent | |
|---|---|---|---|---|---|
| | Diagnosed Concurrently | Diagnosed Within One Year | Total Diagnosed After 1995 | Diagnosed Concurrently | Diagnosed Within One Year |
| **Gender** | | | | | |
| **Male** | 2,048 | 480 | 3,878 | 52.8% | 12.4% |
| **Female** | 258 | 61 | 510 | 50.6% | 12.0% |
| **Transgender** | 25 | * | 51 | 49.0% | * |
| **Total** | **2,331** | **546** | **4,439** | **52.5%** | **12.3%** |
| **Race/Ethnicity** | | | | | |
| **White** | 846 | 165 | 1,808 | 46.8% | 9.1% |
| **Black** | 110 | 23 | 217 | 50.7% | 10.6% |
| **Hispanic** | 1,190 | 301 | 2,074 | 57.4% | 14.5% |
| **Asian** | 151 | 43 | 260 | 58.1% | 16.5% |
| **Pacific Islander** | * | * | * | * | * |
| **American Indian/Alaskan Native** | * | * | * | * | * |
| **More than One Race** | 27 | * | 64 | 42.2% | * |
| **Total** | **2,331** | **546** | **4,439** | **52.5%** | **12.3%** |
| **Mode of Exposure** | | | | | |
| **MSM** | 1,659 | 393 | 3,142 | 52.8% | 12.5% |
| **IDU** | 199 | 50 | 428 | 46.5% | 11.7% |
| **MSM/IDU** | 86 | 25 | 215 | 40.0% | 11.6% |
| **Heterosexual** | 287 | 59 | 501 | 57.3% | 11.8% |
| **Hemophilia/Transfusion** | 17 | * | 37 | 45.9% | * |
| **Perinatal** | 13 | * | 20 | 65.0% | * |
| **Other Pediatric** | 0 | 0 | * | 0.0% | 0.0% |
| **Unknown** | 70 | 10 | 92 | 76.1% | 10.9% |
| **Total** | **2,331** | **546** | **4,439** | **52.5%** | **12.3%** |

*Fewer than 10 cases

Transgender persons are all male to female.

Data Source: HIV Case Registry, data as of January 31, 2019.

**Table 1.13b (Figures 1.25): Persons Diagnosed with AIDS 1996-2013 Surviving Five or More Years After Diagnosis by Gender, Race/Ethnicity, and Mode of Exposure, Orange County**

| Gender, Race/Ethnicity, and Mode of Exposure | Number Surviving Five or More Years | Total Diagnosed 1996-2013 | Percent |
|---|---|---|---|
| **Gender** | | | |
| **Male** | 2,786 | 3,359 | 82.9% |
| **Female** | 377 | 459 | 82.1% |
| **Transgender** | 43 | 45 | 95.6% |
| **Total** | **3,206** | **3,863** | **83.0%** |
| **Race/Ethnicity** | | | |
| **White** | 1,305 | 1,613 | 80.9% |
| **Black** | 154 | 193 | 79.8% |
| **Hispanic** | 1,528 | 1,802 | 84.8% |
| **Asian** | 164 | 191 | 85.9% |
| **Pacific Islander** | * | * | * |
| **American Indian/Alaskan Native** | * | * | * |
| **More than One Race** | 45 | 52 | 86.5% |
| **Total** | **3,206** | **3,863** | **83.0%** |
| **Mode of Exposure** | | | |
| **MSM** | 2,312 | 2,729 | 84.7% |
| **IDU** | 271 | 384 | 70.6% |
| **MSM/IDU** | 162 | 192 | 84.4% |
| **Heterosexual** | 385 | 438 | 87.9% |
| **Hemophilia/Transfusion** | 30 | 34 | 88.2% |
| **Perinatal** | 16 | 19 | 84.2% |
| **Other Pediatric** | * | * | * |
| **Unknown** | 27 | 63 | 42.9% |
| **Total** | **3,206** | **3,863** | **83.0%** |

*Fewer than 10 cases
Transgender persons are all male to female.
Data Source: HIV Case Registry, data as of January 31, 2019.
Includes persons who are now deceased but lived for five or more years.

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# Chapter 2: Geography of HIV in Orange County

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## Overall Geography and Population in Orange County

Orange County is a large suburban county located between Los Angeles and San Diego Counties in Southern California. The county is comprised of 34 cities and covers approximately 798 square miles. With nearly 3.2 million residents, Orange County has a population larger than 22 U.S. states and is the sixth largest county in the United States, exceeded in population only by Los Angeles County, California; Cook County, Illinois; Harris County, Texas; Maricopa County, Arizona, and San Diego County, California.[18]

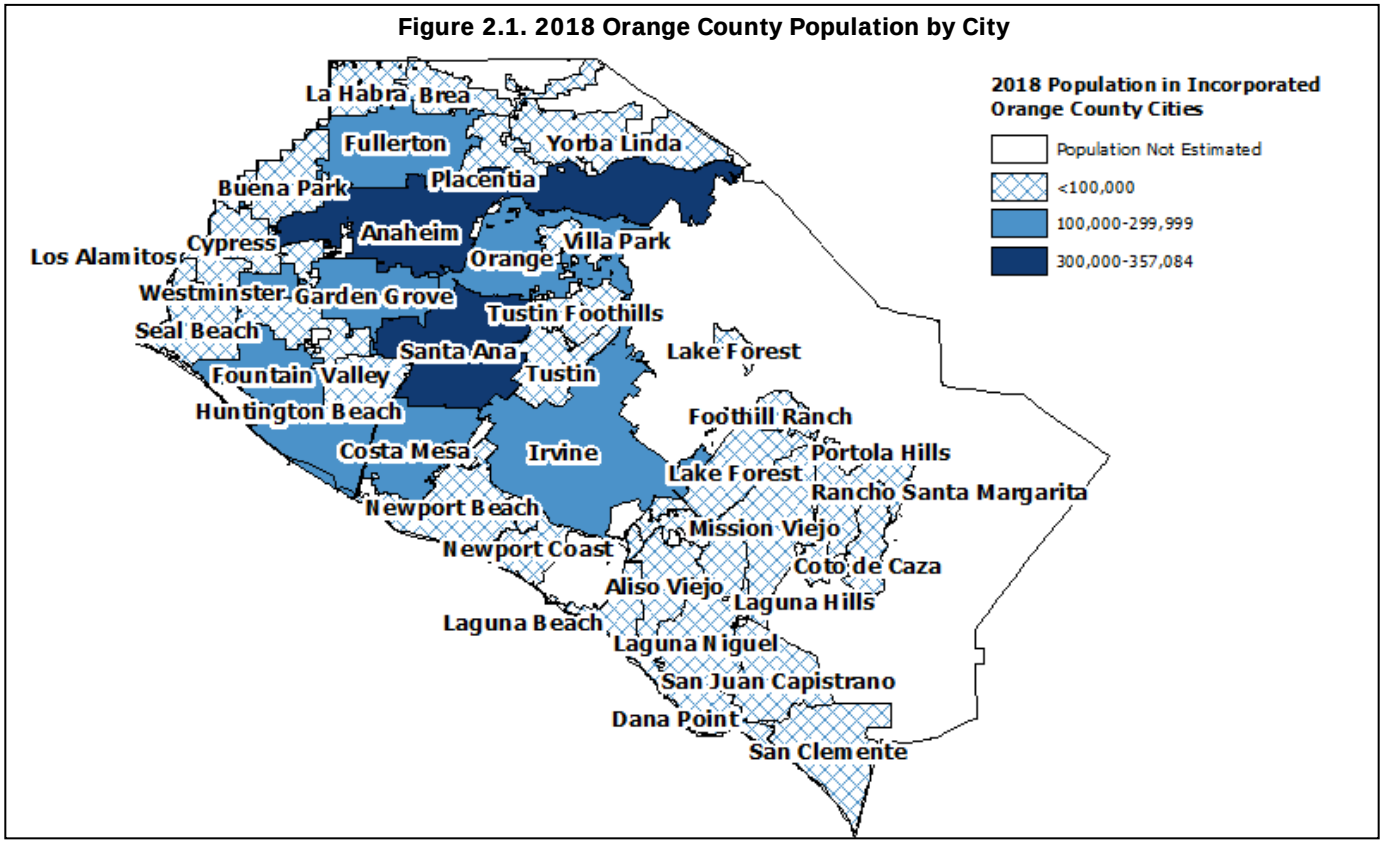
Between 1980[19] and 2018[20] Orange County's total population increased by 62.4% from 1.9 to just over 3.2 million. As of July 1, 2018, Orange County's population density stood at 4,037 persons per square mile. The density of cities within Orange County vary from a low of 454 persons per square mile in unincorporated areas to highs of 13,157 in Stanton, 12,528 in Santa Ana, and 9,828 in Garden Grove.[21]

The data presented throughout this chapter can be found in tables at the end of the chapter. Tables include all data since reporting began even though data by year presented in this chapter only includes the previous 10 years (2009 to 2018).

**Figure 2.1** shows a map of the population in Orange County by city in 2018. As shown:

- The most populous cities are Santa Ana and Anaheim, with over 300,000 residents.
- Cities with between 100,000 and 299,999 include Costa Mesa, Fullerton, Garden Grove, Huntington Beach, Irvine, and the City of Orange.

**Figure 2.1. 2018 Orange County Population by City**



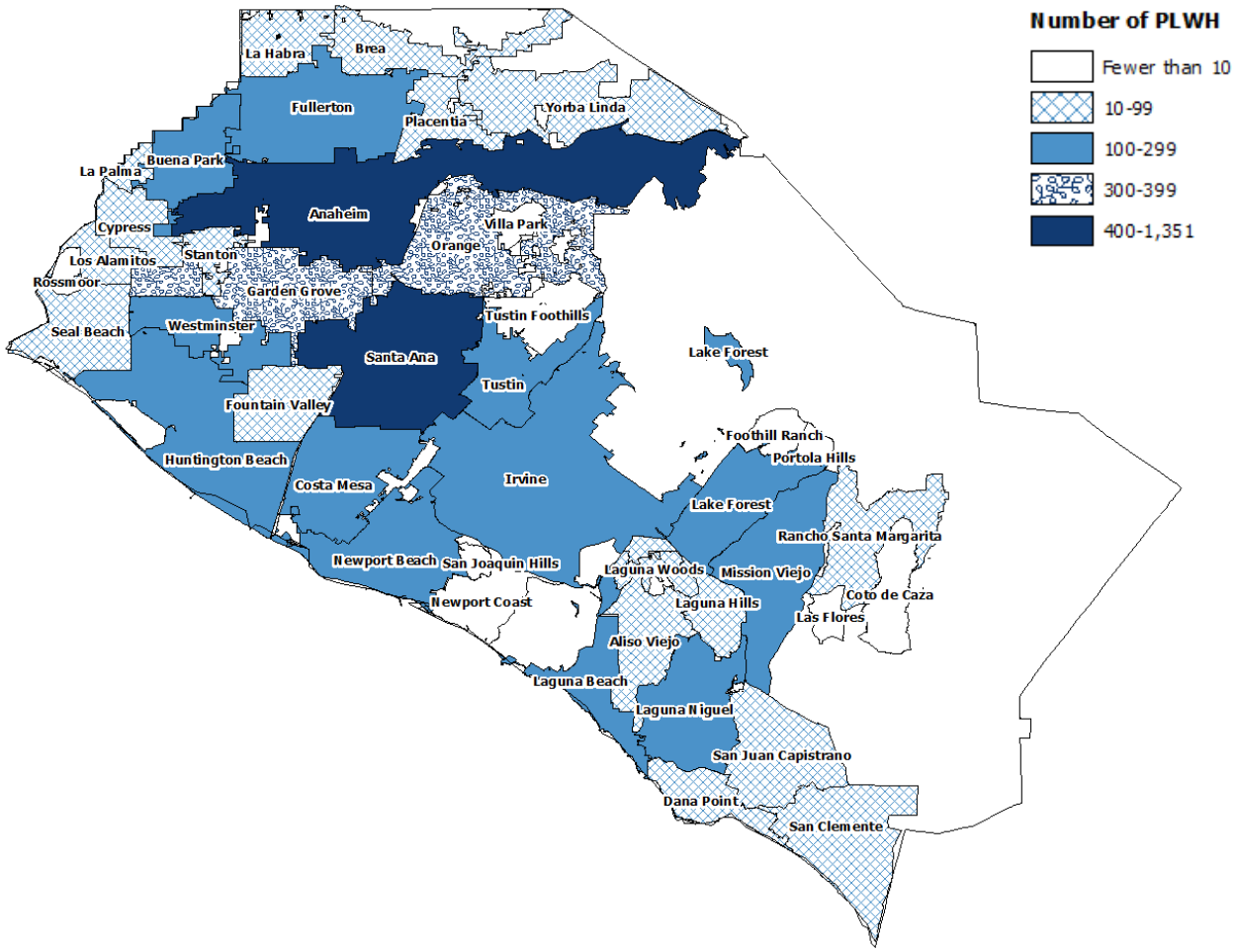

[18] U.S. Census Bureau, American Community Survey, 2018.
[19] State of California, Department of Finance, E-6 County Population Estimates and Components of Change — July 1, 1970–1990, Sacramento, California.
[20] State of California, Department of Finance, California County Population Estimates and Components of Change by Year, July 1, 2010-2018. Sacramento, California, December 2018.
[21] State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2018, with 2010 Census Benchmark. Sacramento, California, May 2018.

# Number of Persons Living with HIV by City

As of December 31, 2018, there were 6,369 persons living with HIV (PLWH) in Orange County. Figure 2.2 shows a map of the number of PLWH by city of current residence.[22] Figure 2.3 shows the 10 cities with the highest number of PLWH. As shown:

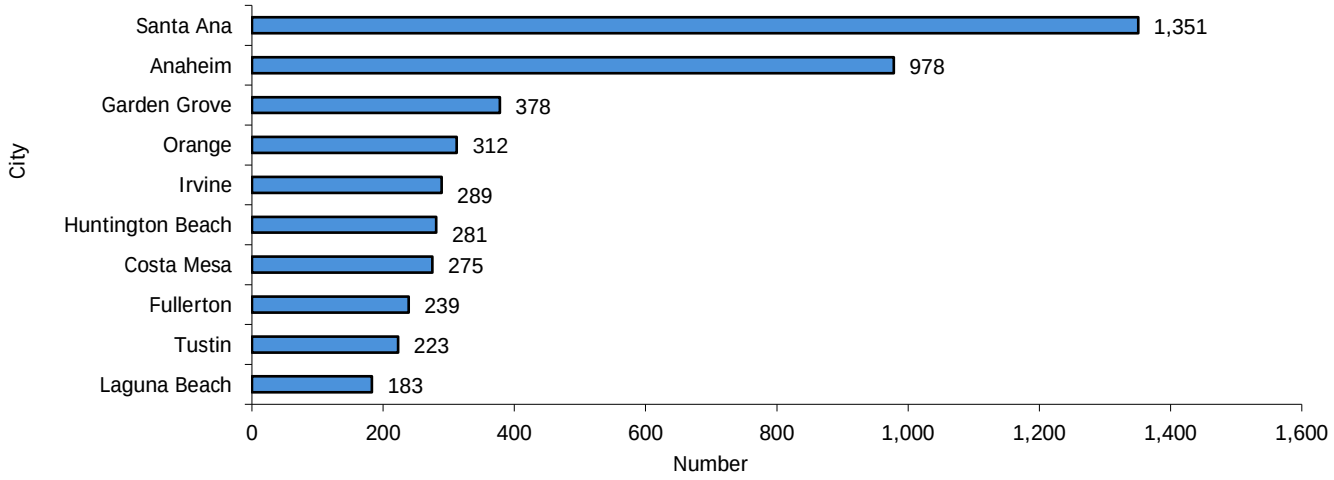
- Santa Ana and Anaheim have the largest numbers (1,351 and 978, respectively) of PLWH.
- The city with the third highest number of PLWH is Garden Grove, followed by Orange, Irvine, Huntington Beach, Costa Mesa, Fullerton, Tustin, and Laguna Beach.

**Figure 2.2. Map of Number PLWH by City of Residence, Orange County**




[22] The city of residence for PLWH is the most current Orange County city of residence known to the HIV/AIDS Surveillance and Monitoring Program. Therefore, persons who were reported in a county other than Orange County are included if their most recent known address is in Orange County and excludes resident cases whose most recent known address is outside of Orange County.

**Figure 2.3. Number of PLWH by City of Residence, Top 10 Cities, Orange County**

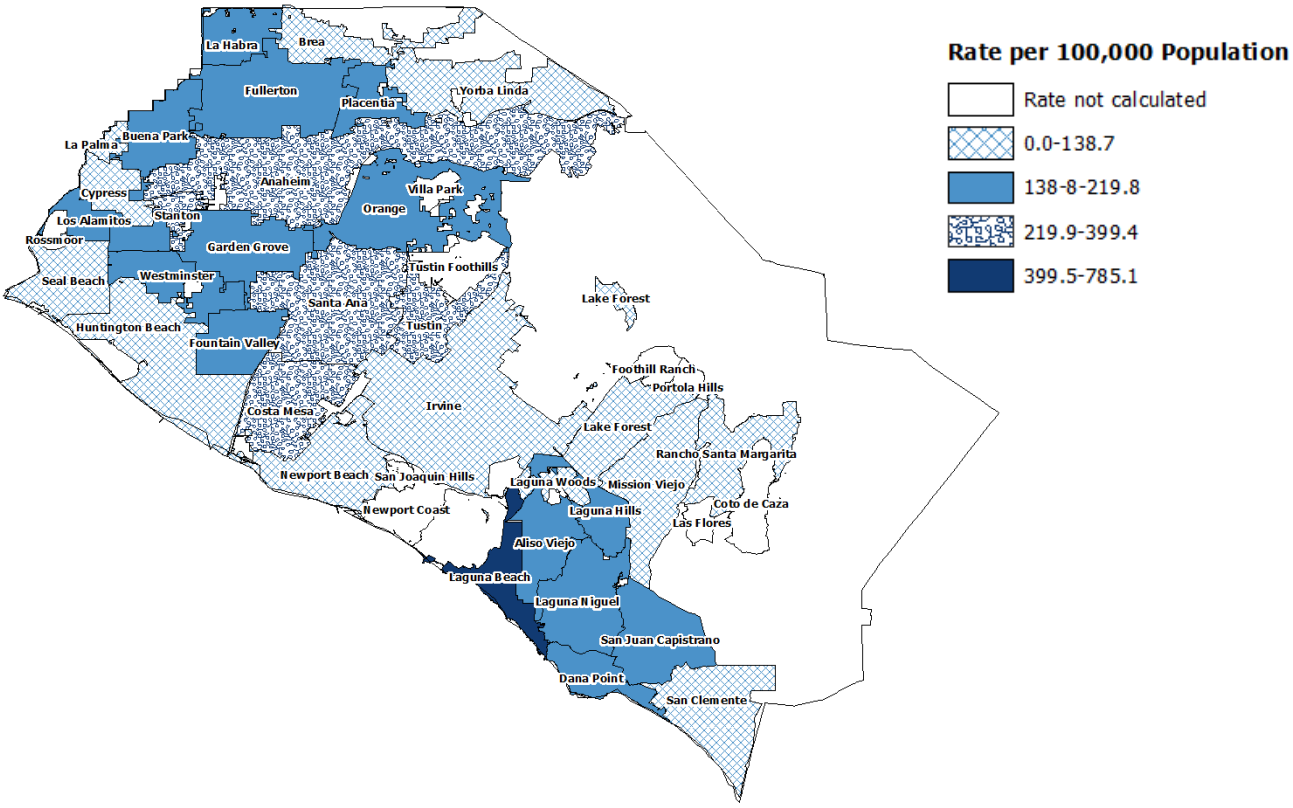


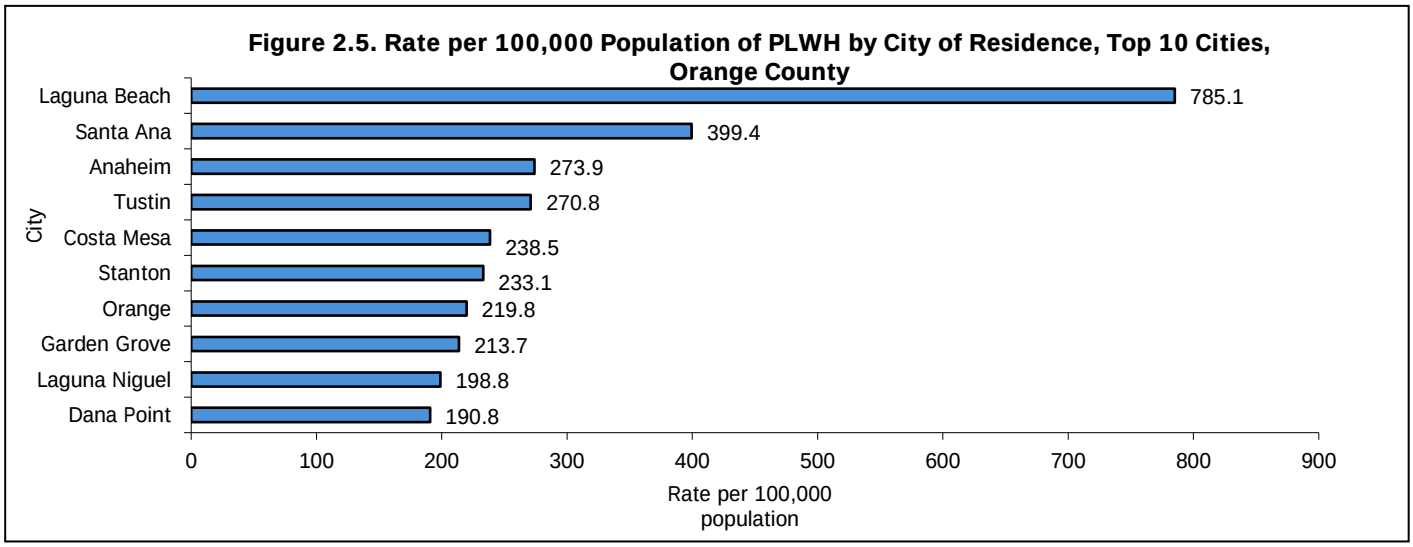

## Persons Living with HIV, Rates by City

Figure 2.4 shows a map of the PLWH per 100,000 population based on city of residence.
Figure 2.5 shows the 10 cities with the highest HIV rate. As shown:

- Laguna Beach is the city most heavily impacted by HIV in Orange County. There are 183 PLWH in Laguna Beach (as shown in Figure 2.3), for a rate of 785.1 PLWH for every 100,000 residents.
- Santa Ana, Anaheim, Tustin, Costa Mesa, Stanton, Orange, Garden Grove, Laguna Niguel and Dana Point are the next most heavily impacted areas with between 190.8 to 399.4 PLWH per 100,000 residents.

**Figure 2.4. Rate per 100,000 Population of PLWH by City of Residence, Orange County**






## HIV in Select Cities: Santa Ana, Anaheim, and Garden Grove

This section provides the demographics of persons who live in the three cities in Orange County with the highest number of PLWH: Santa Ana, Anaheim, and Garden Grove.

**Santa Ana**

Located in central Orange County, Santa Ana is the second most populous city in the county with 338,247[23] residents. Santa Ana is challenged by some of the highest hardship indicators in the county; 19.5% of residents in the city live below 100% of the federal poverty level compared to 12.1%[24] in Orange County overall. Santa Ana is home to the largest number of PLWH (1,351) and has the second highest rate of PLWH per 100,000 (399.4).

**Anaheim**

The city of Anaheim is located in the northern region of Orange County. Home to 357,084[19] residents, Anaheim is the most populous city in Orange County. Anaheim is also home to the second highest number of PLWH (978) and has the third highest rate of PLWH per 100,000 (273.9).

**Garden Grove**

Garden Grove is a city located in the northern region of Orange County and is home to 176,896[19] residents. It is the fifth most populous city in Orange County. Garden Grove is home to the third highest number of PLWH (378) and the eighth highest rate of PLWH per 100,000 (213.7).

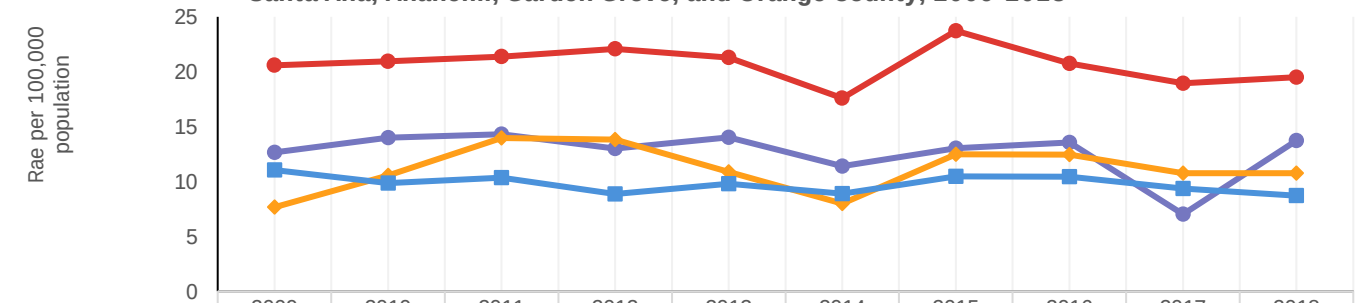
### *Incidence in Select Cities:*

Figure 2.6 (below) shows the number of newly diagnosed HIV cases per 100,000 population during the last 10 years in Santa Ana, Anaheim, Garden Grove, and Orange County overall by year of diagnosis.

- Santa Ana: Santa Ana had the highest annual rate for all years. In 2018, Santa Ana's HIV rate had declined to 19.5 cases per 100,000 population from a high of 23.7 in 2015.
- Anaheim: In the past 10 years, the annual HIV case rate was highest in 2011 at 14.3 cases per 100,000 and has since declined to 13.7 cases per 100,000 in 2018.
- Garden Grove: Garden Grove had their highest rate in 2011 with 14.0 cases per 100,000 population. Since 2009, case rates have increased from 7.7 cases in 2009 to 10.7 cases per 100,000 in 2018.

[23] State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2018, with 2010 Census Benchmark. Sacramento, California, May 2018.
[24] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

**Figure 2.6. Rate per 100,000 Population of HIV Cases by Year of Diagnosis, Santa Ana, Anaheim, Garden Grove, and Orange County, 2009-2018**




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| Santa Ana | 20.6 | 20.9 | 21.4 | 22.1 | 21.3 | 17.6 | 23.7 | 20.7 | 18.9 | 19.5 |
| Anaheim | 12.6 | 14.0 | 14.3 | 13.0 | 14.0 | 11.4 | 13.0 | 13.6 | 7.0 | 13.7 |
| Garden Grove | 7.7 | 10.5 | 14.0 | 13.8 | 10.9 | 8.0 | 12.5 | 12.4 | 10.7 | 10.7 |
| Orange County | 11.0 | 9.9 | 10.3 | 8.9 | 9.8 | 8.9 | 10.5 | 10.4 | 9.4 | 8.7 |

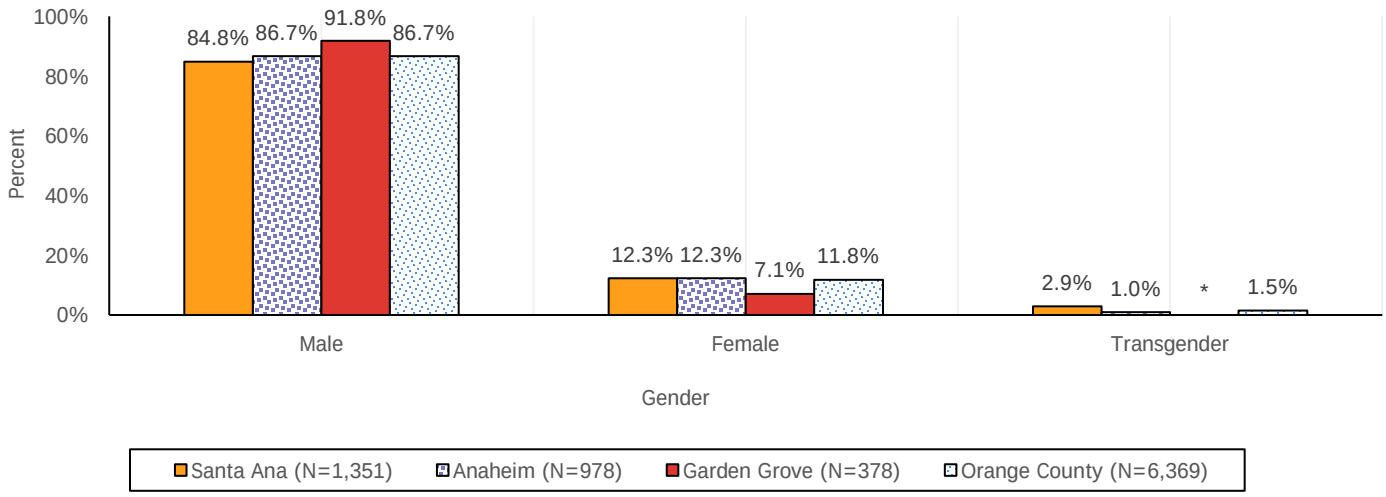
Rates for 2018 are provisional due to reporting delays.

## *Prevalence in Select Cities by Gender[25]:*

Figure 2.7 (below) shows the distribution of PLWH by gender in Orange County and the cities of Santa Ana, Anaheim, and Garden Grove.

- Santa Ana has the lowest percentage of males and the highest percentage of transgender individuals. They are tied with Anaheim for the percentage of PLWH that are female.
- Anaheim has the same percentage of males as Orange County overall, but a higher percentage of females and a lower percentage of transgender PLWH.
- Garden Grove has the highest percentage of males, and the lowest percentage of females. There are fewer than 10 transgender PLWH in Garden Grove.

**Figure 2.7. PLWH by Gender, Santa Ana, Anaheim, Garden Grove, and Orange County**




*Fewer than 10 PLWH.

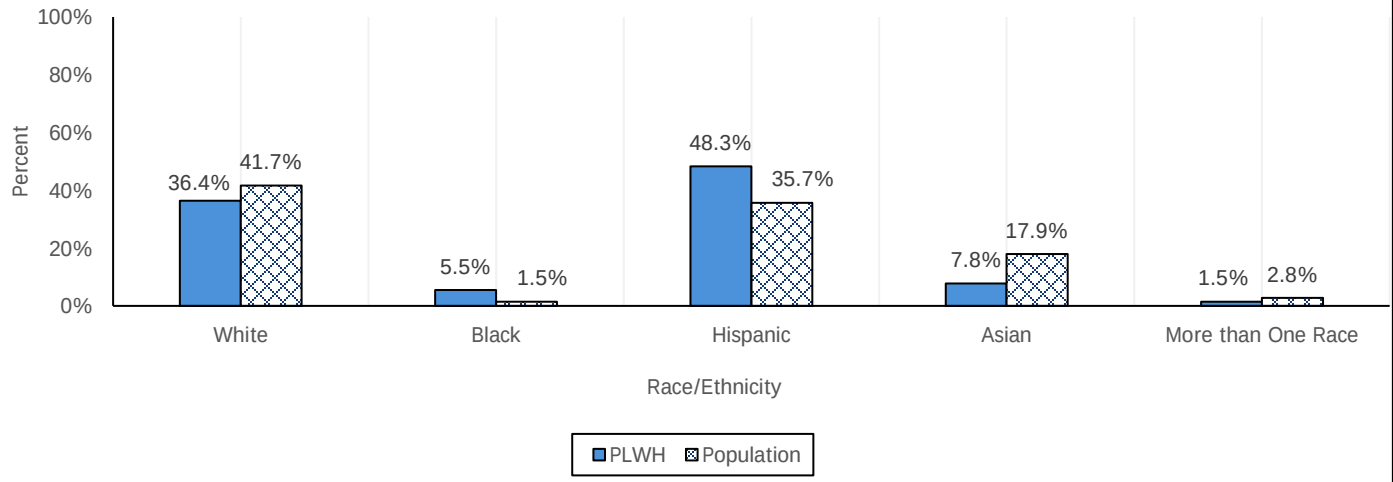
[25] See Chapter 1, HIV by Gender section on page 14 for description of reporting of gender for persons diagnosed with HIV.

## *Prevalence in Select Cities by Race/Ethnicity[26]:*

Figures 2.8.a-2.8.d (below) show the distribution of PLWH by race/ethnicity in Orange County (Figure 2.8.a), and the cities of Santa Ana (Figure 2.8.b), Anaheim (Figure 2.8.c), and Garden Grove (Figure 2.8.d). Blacks are most heavily impacted by the epidemic, with the percentage of Black PLWH at 3.6 times that of the overall Black population in the county. The impact is even greater in Garden Grove (4.4 times) and Santa Ana at 4.3 times, while Anaheim is lower at 3.3 times. Pacific Islanders and American Indian/Alaskan Natives are not shown in the individual cities due to fewer than 10 PLWH in those cities.

- Santa Ana (Figure 2.8.b): Whites and Blacks are most disproportionately impacted by the epidemic, with Whites comprising 15.5% of PLWH but 9.4% of the population[27], Blacks 3.4% of PLWH but 0.8% of the population. Conversely, Hispanics represent a similar percentage of PLWH and the population overall, while Asians represent 11.4% of the population but only 4.1% of PLWH.
- Anaheim (Figure 2.8.c): In Anaheim, Whites make up similar percentages of both PLWH and the overall population, while Blacks are disproportionately impacted. Blacks comprise 7.2% of PLWH, but only 2.2% of the population[23]. Like Santa Ana, the proportion of Asian PLWH is much lower than that in the population.
- Garden Grove (Figure 2.8.d): In Garden Grove Blacks, and Hispanics comprise a greater proportion of PLWH than the general population[23], whereas the percentage of Whites and Asians is less than the overall population.

**Figure 2.8a. PLWH and Population by Race/Ethnicity, Orange County**




[26] See Chapter 1, HIV by Race/Ethnicity section on page 17 for description on race/ethnicity reporting.
[27] U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates.

**Figure 2.8b. PLWH and Population by Race/Ethnicity, Santa Ana**

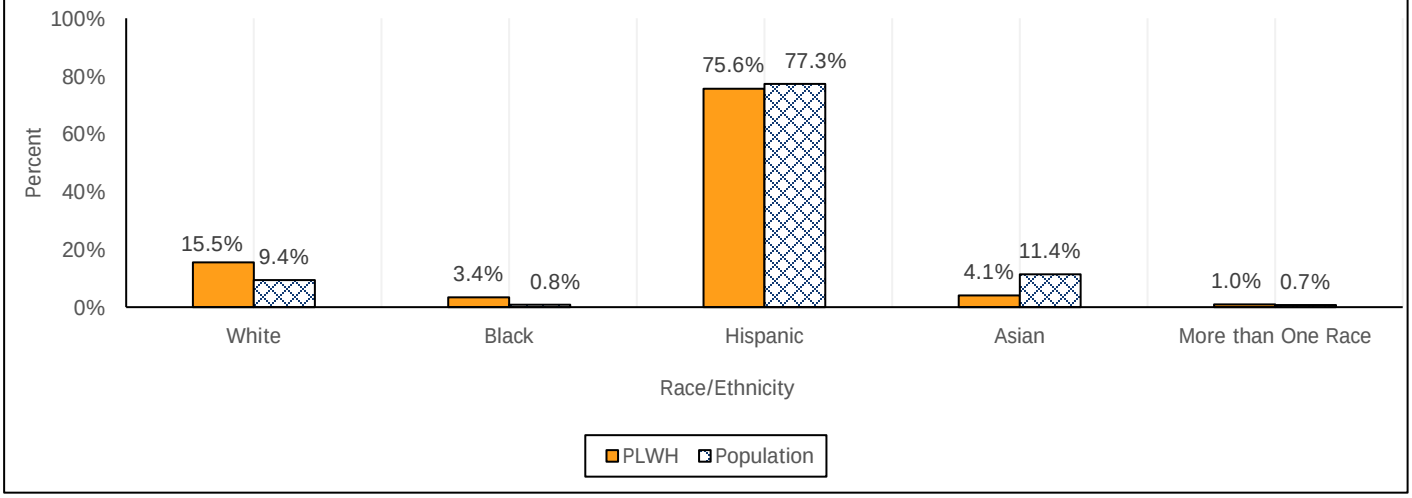



**Figure 2.8c. PLWH and Population by Race/Ethnicity, Anaheim**

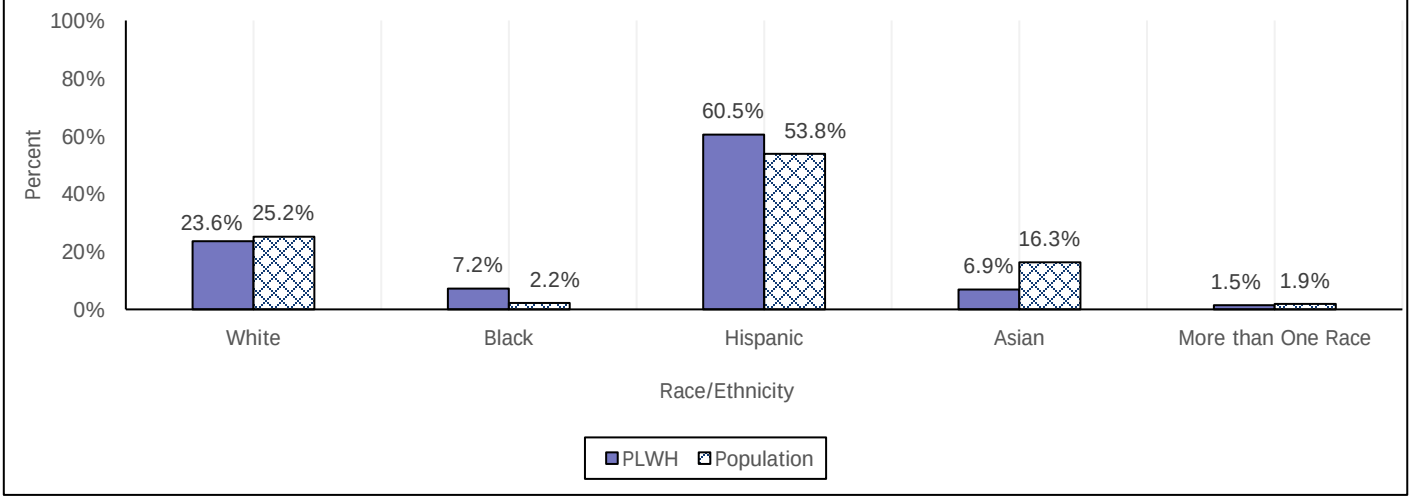
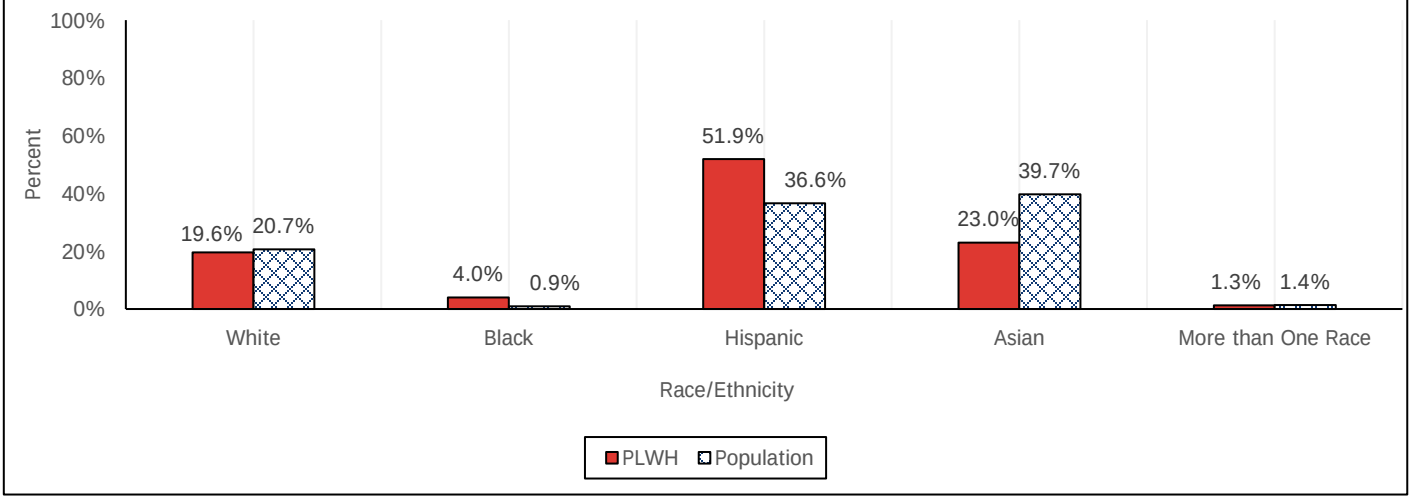



**Figure 2.8d. PLWH and Population by Race/Ethnicity, Garden Grove**

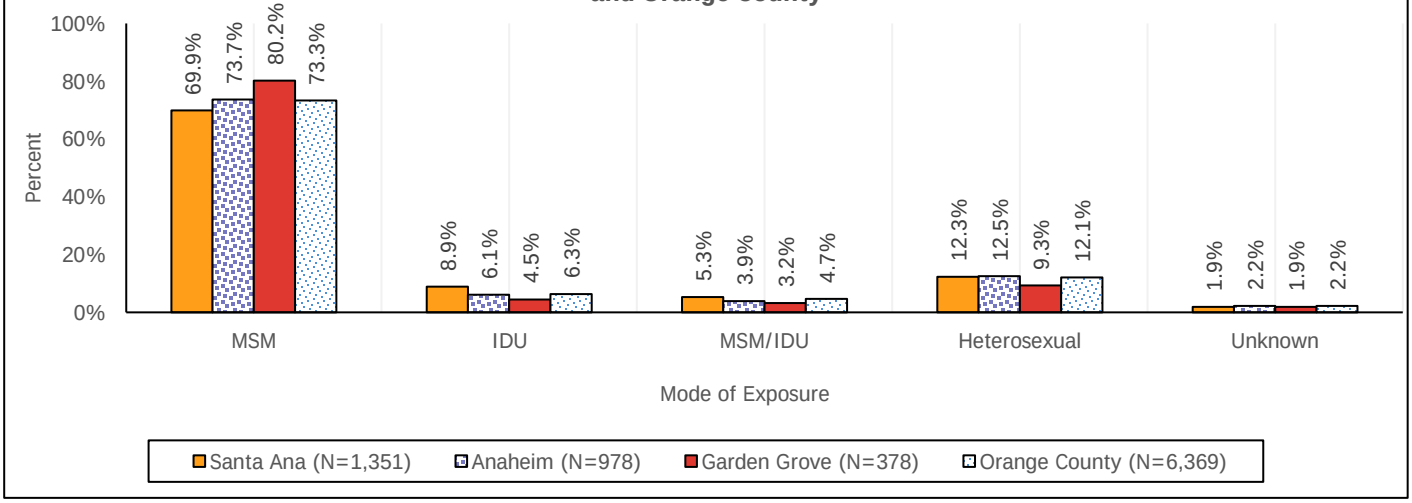


## *Prevalence in Select Cities by Mode of Exposure[28]:*

Figure 2.9 (below) shows the distribution of PLWH by mode of exposure in Orange County and the cities of Santa Ana, Anaheim, and Garden Grove. Hemophilia/Transfusion and Pediatric modes of exposure are not shown due to fewer than 10 PLWH in those categories in these cities.

- Santa Ana: For PLWH who are residents of Santa Ana, 69.9% reported being exposed through MSM, followed by heterosexual contact (12.3%) and IDU (8.9%). Compared to Orange County as a whole, PLWH living in Santa Ana are less likely to report MSM as a mode of exposure and more likely to report heterosexual contact and IDU as a mode of exposure
- Anaheim: A large majority (73.7%) of PLWH who are residents of Anaheim reported being exposed through MSM followed by heterosexual contact, IDU, and MSM/IDU. These proportions generally reflect those of Orange County as a whole.
- Garden Grove: Garden Grove has the highest number of PLWH who reported exposure through MSM (80.2%) and a lower percentage exposed through heterosexual contact (9.3%).

**Figure 2.9. PLWH by Mode of Exposure, Santa Ana, Anaheim, Garden Grove, and Orange County**




[28] See Chapter 1, HIV by Mode of Transmission section on page 24 for description of mode of transmission reporting.

**Table 2.1 (Figures 2.1-2.5): Persons Living with HIV (PLWH), Annual Population, and Case Rates per 100,000 Population, Orange County**

| City | PLWH | 2018Population | Rate per 100,000 Population |
|---|---|---|---|
| **Laguna Beach** | 183 | 23,309 | 785.1 |
| **Santa Ana** | 1,351 | 338,247 | 399.4 |
| **Anaheim** | 978 | 357,084 | 273.9 |
| **Tustin** | 223 | 82,344 | 270.8 |
| **Costa Mesa** | 275 | 115,296 | 238.5 |
| **Stanton** | 92 | 39,470 | 233.1 |
| **Orange** | 312 | 141,952 | 219.8 |
| **Garden Grove** | 378 | 176,896 | 213.7 |
| **Laguna Niguel** | 130 | 65,377 | 198.8 |
| **Dana Point** | 65 | 34,071 | 190.8 |
| **Laguna Hills** | 59 | 31,818 | 185.4 |
| **Westminster** | 169 | 94,476 | 178.9 |
| **Buena Park** | 143 | 83,995 | 170.2 |
| **Fullerton** | 239 | 144,214 | 165.7 |
| **Aliso Viejo** | 83 | 51,950 | 159.8 |
| **Placentia** | 84 | 52,755 | 159.2 |
| **La Habra** | 96 | 62,850 | 152.7 |
| **Los Alamitos** | 18 | 11,863 | 151.7 |
| **Fountain Valley** | 85 | 56,920 | 149.3 |
| **San Juan Capistrano** | 54 | 36,759 | 146.9 |
| **Huntington Beach** | 281 | 202,648 | 138.7 |
| **Laguna Woods** | 23 | 16,597 | 138.6 |
| **Villa Park** | * | 5,951 | * |
| **Lake Forest** | 114 | 84,845 | 134.4 |
| **Newport Beach** | 108 | 87,182 | 123.9 |
| **San Clemente** | 81 | 65,543 | 123.6 |
| **Brea** | 52 | 44,890 | 115.8 |
| **Mission Viejo** | 111 | 95,987 | 115.6 |
| **Cypress** | 55 | 49,978 | 110.0 |
| **Irvine** | 289 | 276,176 | 104.6 |
| **Seal Beach** | 27 | 25,984 | 103.9 |
| **La Palma** | 14 | 15,948 | 87.8 |
| **Rancho Santa Margarita** | 36 | 49,329 | 73.0 |
| **Yorba Linda** | 44 | 69,121 | 63.7 |
| **Midway City** | 22 | NA | NC |
| **Trabuco Canyon** | 20 | NA | NC |
| **Corona Del Mar** | 18 | NA | NC |
| **Ladera Ranch** | 15 | NA | NC |
| **Capistrano Beach** | 11 | NA | NC |
| **Newport Coast** | * | NA | NC |
| **Coto De Caza** | * | * | * |
| **Dove Canyon** | * | * | * |
| **Foothill Ranch** | * | * | * |
| **Rancho Mission Viejo** | * | * | * |
| **Rossmoor** | * | * | * |
| **Silverado** | * | * | * |
| **Sunset Beach** | * | * | * |
| **Surfside** | * | * | * |

*Fewer than 10 PLWH. NA: Population estimate not available. NC: Rate not calculated.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2018, with 2010 Census Benchmark. Sacramento, California, May 2018.

The city of residence is the Orange County city of residence of PLWH on December 31, 2018.

**Table 2.2 (Figure 2.6): Number and Rate per 100,000 Population of HIV Cases by Year of Diagnosis, Santa Ana, Anaheim, Garden Grove, and Orange County, 1980-2018**

| Year | Santa Ana | | Anaheim | | Garden Grove | | Orange County | |
|---|---|---|---|---|---|---|---|---|
| | Number | Rate | Number | Rate | Number | Rate | Number | Rate |
| **1980** | 0 | 0.0 | * | * | 0 | 0.0 | * | * |
| **1981** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | * | * |
| **1982** | * | * | * | * | 0 | 0.0 | 18 | 0.9 |
| **1983** | * | * | * | * | * | * | 52 | 2.5 |
| **1984** | 11 | 4.5 | 13 | 5.4 | * | * | 117 | 5.5 |
| **1985** | 47 | 18.8 | 29 | 11.9 | 24 | 17.8 | 321 | 14.8 |
| **1986** | 41 | 15.8 | 49 | 19.8 | 15 | 11.0 | 379 | 17.1 |
| **1987** | 85 | 32.0 | 58 | 23.0 | 32 | 23.1 | 559 | 24.6 |
| **1988** | 124 | 45.2 | 96 | 37.7 | 52 | 37.4 | 748 | 32.3 |
| **1989** | 132 | 45.9 | 82 | 31.7 | 40 | 28.4 | 711 | 30.0 |
| **1990** | 93 | 31.8 | 55 | 20.8 | 34 | 23.9 | 596 | 24.7 |
| **1991** | 80 | 26.7 | 65 | 23.8 | 26 | 18.0 | 560 | 22.8 |
| **1992** | 79 | 25.9 | 58 | 20.7 | 28 | 19.0 | 519 | 20.7 |
| **1993** | 83 | 26.7 | 52 | 18.1 | 32 | 21.4 | 455 | 17.8 |
| **1994** | 78 | 24.9 | 50 | 17.1 | 18 | 11.8 | 389 | 15.1 |
| **1995** | 68 | 21.6 | 43 | 14.4 | 25 | 16.3 | 384 | 14.7 |
| **1996** | 70 | 22.1 | 48 | 15.9 | 26 | 16.8 | 405 | 15.3 |
| **1997** | 75 | 23.4 | 41 | 13.3 | 27 | 17.2 | 340 | 12.6 |
| **1998** | 53 | 16.3 | 48 | 15.3 | 21 | 13.2 | 285 | 10.4 |
| **1999** | 56 | 16.9 | 52 | 16.3 | 13 | 8.0 | 295 | 10.5 |
| **2000** | 57 | 17.0 | 39 | 12.0 | 22 | 13.4 | 296 | 10.4 |
| **2001** | 67 | 19.8 | 48 | 14.6 | 22 | 13.2 | 336 | 11.6 |
| **2002** | 72 | 21.4 | 58 | 17.5 | 24 | 14.3 | 364 | 12.5 |
| **2003** | 81 | 24.0 | 50 | 15.1 | 15 | 8.9 | 358 | 12.2 |
| **2004** | 65 | 19.4 | 57 | 17.1 | 19 | 11.3 | 367 | 12.4 |
| **2005** | 80 | 24.0 | 51 | 15.4 | 20 | 11.9 | 352 | 11.9 |
| **2006** | 78 | 23.7 | 52 | 15.8 | 22 | 13.1 | 348 | 11.8 |
| **2007** | 69 | 21.1 | 55 | 16.7 | 19 | 11.3 | 362 | 12.2 |
| **2008** | 78 | 24.0 | 45 | 13.6 | 19 | 11.3 | 341 | 11.4 |
| **2009** | 67 | 20.6 | 42 | 12.6 | 13 | 7.7 | 331 | 11.0 |
| **2010** | 68 | 20.9 | 47 | 14.0 | 18 | 10.5 | 297 | 9.9 |
| **2011** | 70 | 21.4 | 49 | 14.3 | 24 | 14.0 | 315 | 10.3 |
| **2012** | 73 | 22.1 | 45 | 13.0 | 24 | 13.8 | 273 | 8.9 |
| **2013** | 71 | 21.3 | 49 | 14.0 | 19 | 10.9 | 305 | 9.8 |
| **2014** | 59 | 17.6 | 40 | 11.4 | 14 | 8.0 | 279 | 8.9 |
| **2015** | 80 | 23.7 | 46 | 13.0 | 22 | 12.5 | 331 | 10.5 |
| **2016** | 70 | 20.7 | 48 | 13.6 | 22 | 12.4 | 332 | 10.4 |
| **2017** | 64 | 18.9 | 25 | 7.0 | 19 | 10.7 | 300 | 9.4 |
| **2018** | 66 | 19.5 | 49 | 13.7 | 19 | 10.7 | 280 | 8.7 |
| **Total** | **2,520** | **745.0** | **1,741** | **487.6** | **804** | **454.5** | **13,305** | **413.6** |

*Fewer than 10 cases.

Data Sources:

HIV Case Registry, data as of January 31, 2019.

State of California, Department of Finance, Population Estimates for California Cities and Counties, January 1, 1981 to January 1, 1990.

State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. Sacramento, California, August 2007.

State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts. Sacramento, California, November 2012

State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2018, with 2010 Census Benchmark. Sacramento, California, May 2018.

**Table 2.3 (Figures 2.7-2.9): Persons Living with HIV (PLWH) by Gender, Race/Ethnicity, Current Age, and Mode of Exposure, Santa Ana, Anaheim, Garden Grove, and Orange County**

| Gender, Race/Ethnicity, Current Age, and Mode of Exposure | Santa Ana | | Anaheim | | Garden Grove | | All PLWH | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| **Gender** | | | | | | | | |
| **Male** | 1,146 | 84.8% | 848 | 86.7% | 347 | 91.8% | 5,520 | 86.7% |
| **Female** | 166 | 12.3% | 120 | 12.3% | 27 | 7.1% | 751 | 11.8% |
| **Transgender** | 39 | 2.9% | 10 | 1.0% | * | * | 98 | 1.5% |
| **Total** | **1,351** | **100.0%** | **978** | **100.0%** | **378** | **100.0%** | **6,369** | **100.0%** |
| **Race/Ethnicity** | | | | | | | | |
| **White** | 210 | 15.5% | 231 | 23.6% | 74 | 19.6% | 2,318 | 36.4% |
| **Black** | 46 | 3.4% | 70 | 7.2% | 15 | 4.0% | 353 | 5.5% |
| **Hispanic** | 1,021 | 75.6% | 592 | 60.5% | 196 | 51.9% | 3,075 | 48.3% |
| **Asian** | 55 | 4.1% | 67 | 6.9% | 87 | 23.0% | 498 | 7.8% |
| **Pacific Islander** | * | * | * | * | * | * | 21 | 0.3% |
| **American Indian/Alaskan Native** | * | * | 0 | 0.0% | 0 | 0.0% | * | * |
| **More than One Race** | 13 | 1.0% | 15 | 1.5% | 5 | 1.3% | 95 | 1.5% |
| **Total** | **1,351** | **100.0%** | **978** | **100.0%** | **378** | **100.0%** | **6,369** | **100.0%** |
| **Current Age** | | | | | | | | |
| **0-18** | 5 | 0.4% | * | * | 0 | 0.0% | 20 | 0.3% |
| **19-25** | 75 | 5.6% | 35 | 3.6% | 13 | 3.4% | 280 | 4.4% |
| **26-35** | 202 | 15.0% | 185 | 18.9% | 70 | 18.5% | 1,037 | 16.3% |
| **36-45** | 332 | 24.6% | 224 | 22.9% | 100 | 26.5% | 1,372 | 21.5% |
| **46-55** | 425 | 31.5% | 309 | 31.6% | 113 | 29.9% | 1,869 | 29.3% |
| **56+** | 312 | 23.1% | 221 | 22.6% | 82 | 21.7% | 1791 | 28.1% |
| **Total** | **1,351** | **100.0%** | **978** | **100.0%** | **378** | **100.0%** | **6,369** | **100.0%** |
| **Mode of Exposure** | | | | | | | | |
| **MSM** | 945 | 69.9% | 721 | 73.7% | 303 | 80.2% | 4,668 | 73.3% |
| **IDU** | 120 | 8.9% | 60 | 6.1% | 17 | 4.5% | 399 | 6.3% |
| **MSM/IDU** | 72 | 5.3% | 38 | 3.9% | 12 | 3.2% | 300 | 4.7% |
| **Heterosexual** | 166 | 12.3% | 122 | 12.5% | 35 | 9.3% | 769 | 12.1% |
| **Hemophilia/Transfusion** | 11 | 0.8% | * | * | * | * | 42 | 0.7% |
| **Perinatal** | 10 | 0.7% | 5 | 0.5% | * | * | 40 | 0.6% |
| **Other Pediatric** | * | * | * | * | * | * | 10 | 0.2% |
| **Unknown** | 26 | 1.9% | 22 | 2.2% | * | * | 141 | 2.2% |
| **Total** | **1,351** | **100.0%** | **978** | **100.0%** | **378** | **100.0%** | **6,369** | **100.0%** |

*Fewer than 10 PLWH.
Data Source: HIV Case Registry, data as of January 31, 2019.

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# Chapter 3: Pediatric HIV in Orange County

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# CHAPTER 3: PEDIATRIC HIV IN ORANGE COUNTY

## Overview of Pediatric HIV Reporting

This section describes trends in HIV for pediatric cases (children under the age of 13 at time of diagnosis). From 1981 to December 31, 2018, there have been a total of 81 pediatric cases reported in Orange County. This represents less than 1% of total HIV cases reported in the county. Most of these pediatric cases, 72.8%, are attributed to perinatal exposure, which is transmission from mother to child during pregnancy, labor, or delivery. Due to the small numbers of pediatric cases, reported each year[29] data is presented in five year periods.

In this report, when describing individuals currently living with HIV (prevalence), the *current age* of the individual is shown. When describing trends in the number of new cases (incidence), the *age of diagnosis* is used. Age groups for which there are fewer than 10 cases in each subgroup will not be shown in this section.

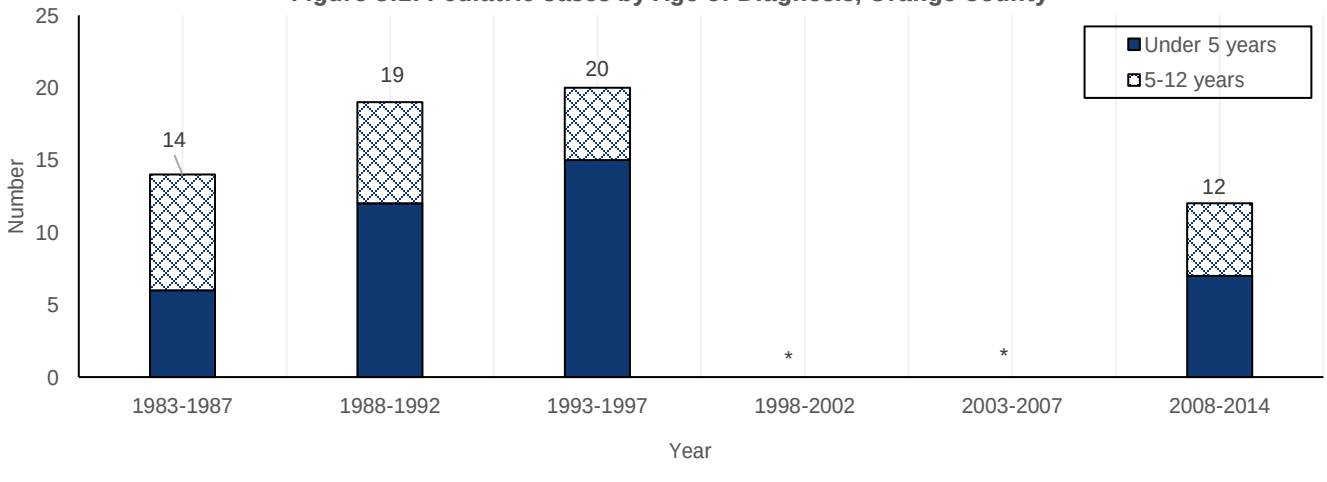
Data throughout this chapter is presented in graphs and pie charts. Complete data tables that correspond to the graphical representations can be found at the end of this chapter.

## Incidence

**Figure 3.1** displays the number of pediatric cases diagnosed by age at diagnosis since 1983 in five-year periods by the earliest date of diagnosis. As shown, between 1993-1997 and 1998-2002, there was a significant decrease in the number of pediatric cases. This decrease is likely due to giving pregnant women infected with HIV and their newborns zidovudine (ZDV) (starting in 1994) which reduced the risk for this type of HIV exposure. This intervention started in 1994, and since then, the testing of pregnant women and treatment for those who are infected have resulted in a dramatic decline in the number of children perinatally infected with HIV locally and nationally.

Cases diagnosed in 1983-1987 and 1988-1992 were due to perinatal exposure, a child receiving treatment for hemophilia, and children who were infected due to a blood transfusion. From 1993 until 2014, nearly all the pediatric cases diagnosed have been due to perinatal exposure. The majority of the cases diagnosed since 2010 were born outside of the United States. There have been no pediatric cases diagnosed since 2014.

**Figure 3.1. Pediatric Cases by Age of Diagnosis, Orange County**




*Fewer than 10 pediatric cases diagnosed.

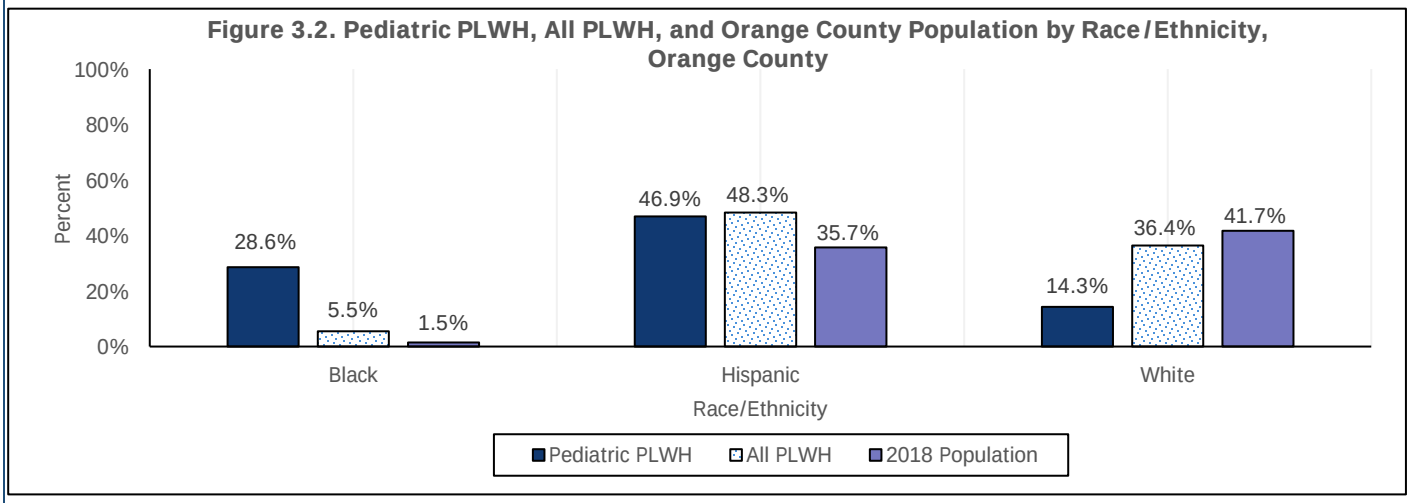
[29] Fewer than 10 cases for most years.

# Prevalence

This section provides information on the 49 children living with HIV (PLWH) who were under age 13 at time of diagnosis. Comparisons are made to "All PLWH" or the 6,369 PLWH as of December 31, 2018 regardless of age at diagnosis and Orange County's total 2018 population.

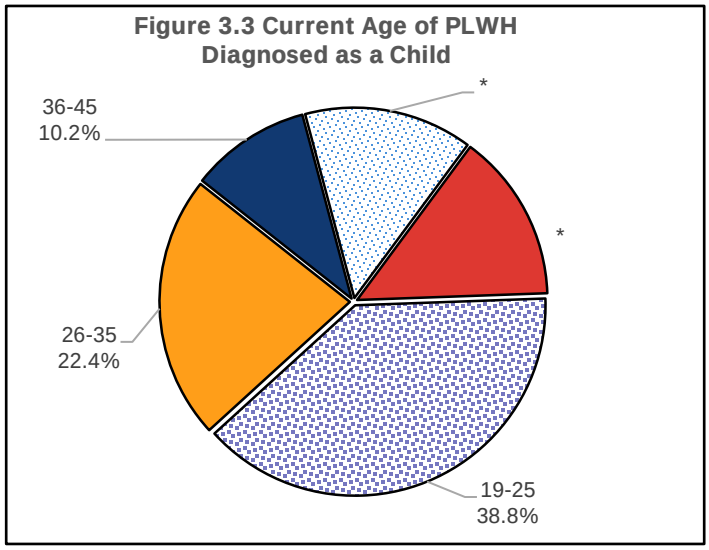
## *Prevalence by Race/Ethnicity*

**Figure 3.2** shows the proportion of pediatric PLWH compared to all PLWH and Orange County's 2018 population by race/ethnicity. As shown, the pediatric PLWH are more likely to be Black, and less likely to be White than the overall population. Only Black, Hispanic, and White are shown due to fewer than 10 pediatric PLWH in the other race/ethnic categories.




## *Prevalence by Current Age*

**Figure 3.3** shows the distribution of pediatric PLWH by current age. As shown, the largest group of pediatric PLWH are between the ages of 19-25. Those age 13-18 years of age make up the second largest proportion of pediatric PLWH.




*Fewer than 10 pediatric PLWH.

# Survival

**Figure 3.4** shows the percent of pediatric cases and all reported cases of HIV in Orange County who are still living. As shown, 60.5% (49 of 81) of all reported pediatric cases are still living in Orange County compared to 47.9% (6,369 of 13,305) of all reported HIV cases in Orange County are still living in Orange County as of December 31, 2018.

**Figure 3.4. Percent of Pediatric Cases Compared to All HIV Cases Living as of December 31, 2018, Orange County**

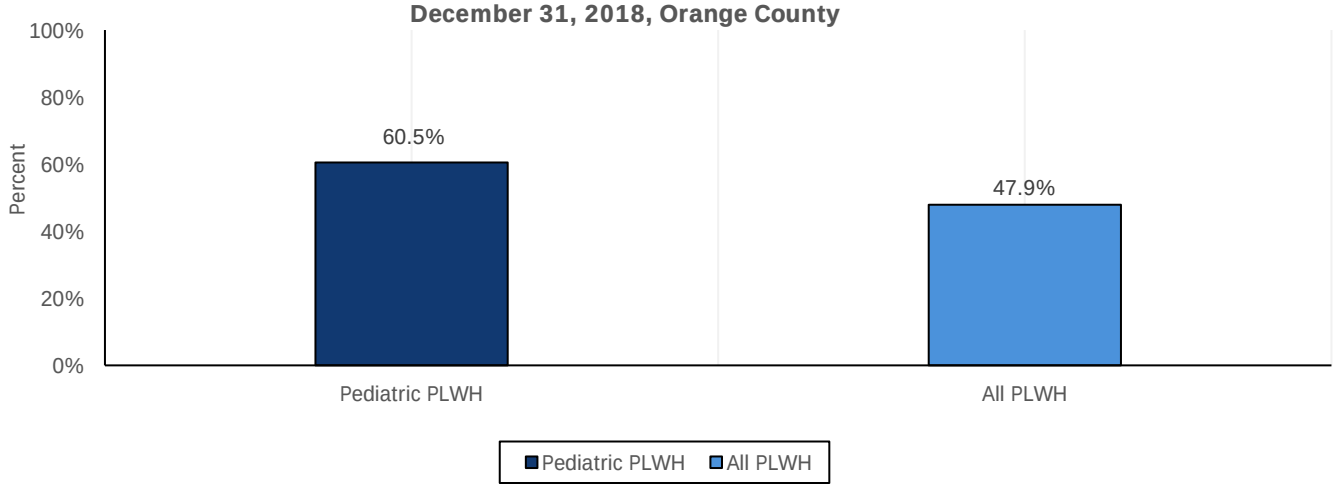


**Table 3.1 (Figures 3.2-3.4): Persons Living with HIV (PLWH) Diagnosed Prior to Age 13 (Pediatric), and All PLWH by Gender, Race/Ethnicity, and Current Age, Orange County**

| Gender, Race/Ethnicity, and Current Age | Pediatric PLWH | | | All PLWH | | |
|---|---|---|---|---|---|---|
| | Number | Percent | Rate | Number | Percent | Rate |
| **Gender** | | | | | | |
| **Male** | 23 | 46.9% | 1.4 | 5,520 | 86.7% | 345.1 |
| **Female** | 26 | 53.1% | 1.6 | 751 | 11.8% | 46.3 |
| **Transgender** | 0 | 0.0% | NC | 98 | 1.5% | NC |
| **Total** | **49** | **100.0%** | **1.5** | **6,369** | **100.0%** | **197.7** |
| **Race/Ethnicity** | | | | | | |
| **White** | * | * | * | 2,318 | 36.4% | 172.8 |
| **Black** | 14 | 28.6% | 28.8 | 353 | 5.5% | 727.0 |
| **Hispanic** | 23 | 46.9% | 2.0 | 3,075 | 48.3% | 267.7 |
| **Asian** | * | * | * | 498 | 7.8% | 86.3 |
| **Pacific Islander** | 0 | 0.0% | 0.0 | 21 | 0.3% | 249.9 |
| **American Indian/Alaskan Native** | 0 | 0.0% | 0.0 | * | * | * |
| **More than One Race** | * | * | * | 95 | 1.5% | 105.2 |
| **Total** | **49** | **100.0%** | **1.5** | **6,369** | **100.0%** | **197.7** |
| **Current Age** | | | | | | |
| **0-12** | * | * | * | * | * | * |
| **13-18** | * | * | * | 13 | 0.2% | 5.0 |
| **19-25** | 19 | 38.8% | 5.7 | 280 | 4.4% | 83.8 |
| **26-35** | 11 | 22.4% | 2.8 | 1,037 | 16.3% | 265.7 |
| **36-45** | * | * | 1.2 | 1,372 | 21.5% | 332.9 |
| **46-55** | 0 | 0.0% | 0.0 | 1,869 | 29.3% | 404.7 |
| **56+** | 0 | 0.0% | 0.0 | 1,791 | 28.1% | 210.8 |
| **Total** | **49** | **100.0%** | **1.5** | **6,369** | **100.0%** | **197.7** |

Transgender persons are all male to female.
*Fewer than 10 PLWH.
NC: Rate not calculated due to lack of population estimates.
Rate is per 100,000 2018 population.
Data Sources:
HIV Case Registry, data as of January 31, 2019.
State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.

# Chapter 4: HIV Counseling and Testing

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# CHAPTER 4: HIV COUNSELING AND TESTING

## HIV Counseling and Testing:

The Orange County Health Care Agency provides support for HIV counseling and testing services in Orange County through the provision of HIV rapid test kits funded by the HIV Prevention Services Branch of the California Department of Public Health, Office of AIDS. Counseling and Testing (C&T) sites receiving kits include: 17th Street Testing and Treatment, Radiant Health Center (formerly AIDS Services Foundation), the Asian Pacific AIDS Intervention Team (APAIT), and The LGBT Center Orange County. Tests conducted at private provider offices and other sites not listed here are not included in this chapter.

This chapter describes the trends and demographics of those who received tests and those who tested positive for HIV at C&T sites between 2013 and 2018. C&T sites provide counseling and testing services at no cost to individuals. An individual may take more than one test in a single year or over multiple years. Therefore, the numbers in this chapter should not be considered an unduplicated count of individuals. Though no one is refused testing at these sites, it is important to note that the C&T sites target outreach to high-risk populations such as men who have sex with men, substance users, and partners of infected individuals. Therefore, positivity rates shown here are likely higher than those expected in the general population.

**Figure 4.1**, displays the number of tests provided each year at all of the C&T sites between 2013 and 2018. As shown, during this time, an average of 9,343 tests were conducted each year.

**Figure 4.1. Number of Tests at Orange County Counseling and Testing Sites, 2013-2018**

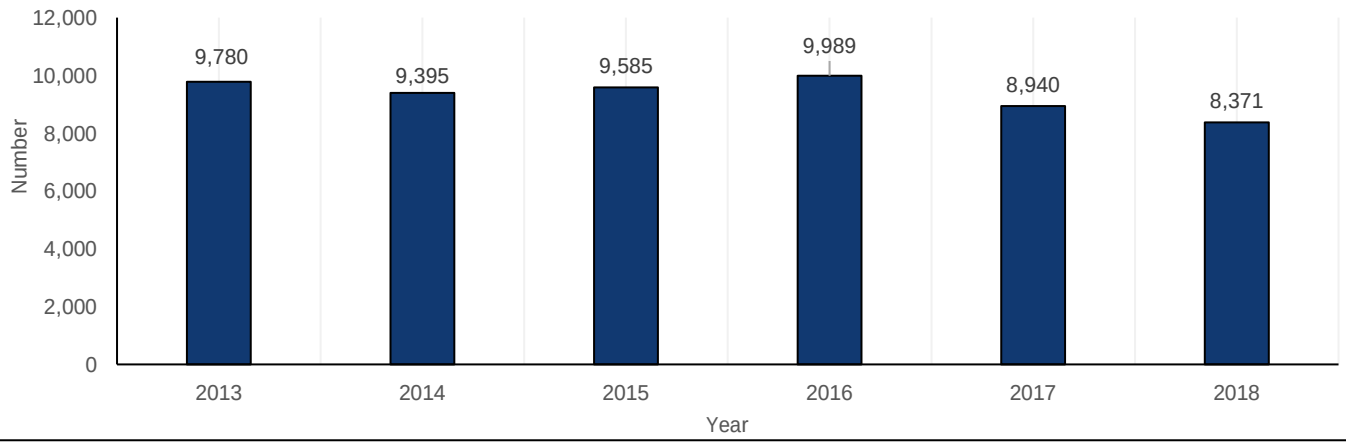
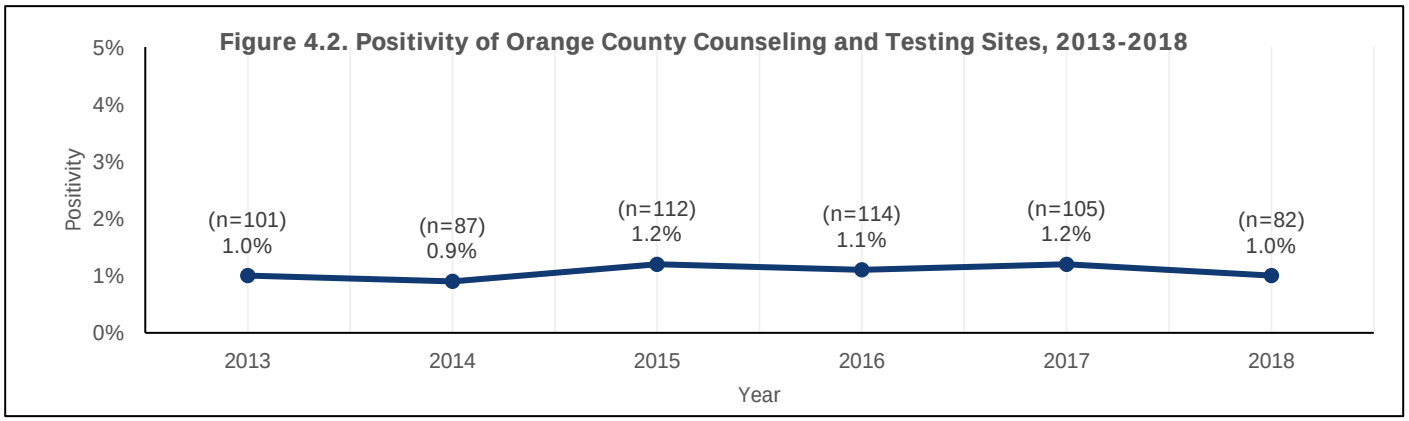



**Figure 4.2**, displays the positivity rate (number of positive tests divided by number of persons tested) and number of individuals (indicated with "n") who tested positive for HIV in each year. As shown, an average of 1.1% of tests were positive in the last six years.




## HIV Counseling and Testing by Gender

**Table 4.1** displays the number of tests and the number of positive results each year at C&T sites between 2013 and 2018 by gender. As shown, there were more tests conducted for males than females each year.

**Table 4.1. Number of Tests Provided and Positive Results at Orange County C&T Sites by Gender, 2013-2018**

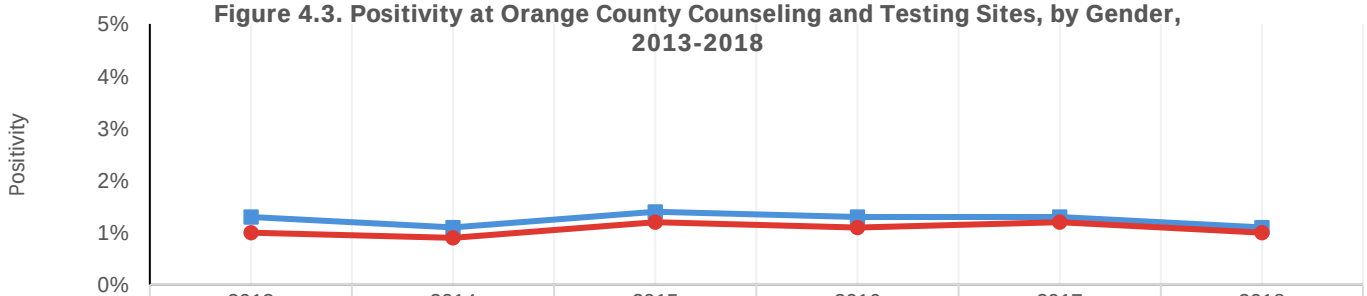
| Gender | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| Male | 7,190 | 97 | 7,009 | 76 | 7,325 | 101 |
| Female | 2,389 | * | 2,042 | * | 1,895 | * |
| Transgender | 138 | * | 188 | * | 193 | * |
| Other/Unknown | 63 | * | 156 | * | 172 | * |

| Gender | 2016 | | 2017 | | 2018 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| Male | 7,828 | 101 | 7,238 | 97 | 6,513 | 72 |
| Female | 1,793 | * | 1,409 | * | 1,476 | * |
| Transgender | 214 | * | 195 | * | 152 | * |
| Other/Unknown | 146 | * | 98 | * | 230 | * |

"Transgender" includes both male to female and female to male transgender individuals.
*Fewer than 10 tests.

**Figure 4.3** displays the percent of males who tested positive for HIV overall between 2013 and 2018. Information for females and transgender individuals is not shown due to the number of positive tests nearly each year being less than ten.

**Figure 4.3. Positivity at Orange County Counseling and Testing Sites, by Gender, 2013-2018**




| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Male | 1.3% | 1.1% | 1.4% | 1.3% | 1.3% | 1.1% |
| Total | 1.0% | 0.9% | 1.2% | 1.1% | 1.2% | 1.0% |

## HIV Counseling and Testing by Race/Ethnicity

**Table 4.2**, displays the number of tests and the number of positive results each year at C&T sites between 2013 and 2018 by race/ethnicity. As shown, Hispanics received the most tests and had the highest number of positive test results, followed by Whites, Asians, and Blacks.

**Table 4.2. Number of Tests Provided and Positive Results at Orange County C&T Sites by Race/Ethnicity, 2013-2018**

| | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| Race/Ethnicity | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| Black | 414 | * | 417 | * | 466 | 10 |
| Hispanic | 4,992 | 66 | 4,695 | 46 | 4,762 | 66 |
| White | 2,713 | 20 | 2,582 | 18 | 2,586 | 24 |
| Asian | 1,273 | 10 | 1,237 | 12 | 1,288 | * |
| Pacific Islander | 65 | 0 | 76 | * | 50 | * |
| American Indian/Alaskan Native | 86 | * | 71 | 0 | 79 | * |
| More than One Race | 42 | 0 | 42 | 0 | 49 | 0 |
| Other/Unknown Race | 195 | * | 275 | * | 305 | * |

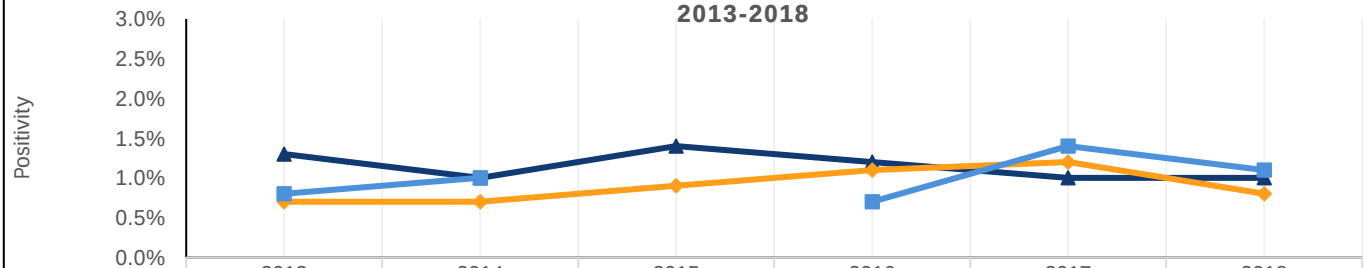
*Fewer than 10 tests.

| | 2016 | | 2017 | | 2018 | |
|---|---|---|---|---|---|---|
| Race/Ethnicity | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| Black | 500 | * | 374 | * | 387 | * |
| Hispanic | 4,956 | 61 | 4,761 | 49 | 4,400 | 44 |
| White | 2,412 | 27 | 1,898 | 23 | 1,802 | 15 |
| Asian | 1,484 | 11 | 1,381 | 19 | 1,287 | 14 |
| Pacific Islander | 66 | * | 57 | 0 | 58 | * |
| American Indian/Alaskan Native | 91 | * | 57 | 0 | 55 | 0 |
| More than One Race | 65 | * | 48 | * | 46 | 0 |
| Other/Unknown Race | 415 | 5 | 364 | * | 336 | * |

*Fewer than 10 tests.

**Figure 4.4** displays the percent of positive tests within each race/ethnicity by year for race/ethnicities with 10 or more positive tests.

**Figure 4.4. Positivity at Orange County Counseling and Testing Sites, by Race/Ethnicity, 2013-2018**




| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Hispanic | 1.3% | 1.0% | 1.4% | 1.2% | 1.0% | 1.0% |
| White | 0.7% | 0.7% | 0.9% | 1.1% | 1.2% | 0.8% |
| Asian | 0.8% | 1.0% | N/A | 0.7% | 1.4% | 1.1% |

Blank cells in the table above indicate fewer than 10 positive tests.

## HIV Counseling and Testing by Age

**Table 4.3** displays the number of tests and the number of positive results each year at C&T sites between 2013 and 2018 by age group. As shown, 26 to 35 years olds received the most tests, followed by 19 to 25 years olds.

**Table 4.3. Number of Tests Provided and Positive Results at Orange County C&T Sites by Age, 2013-2018**

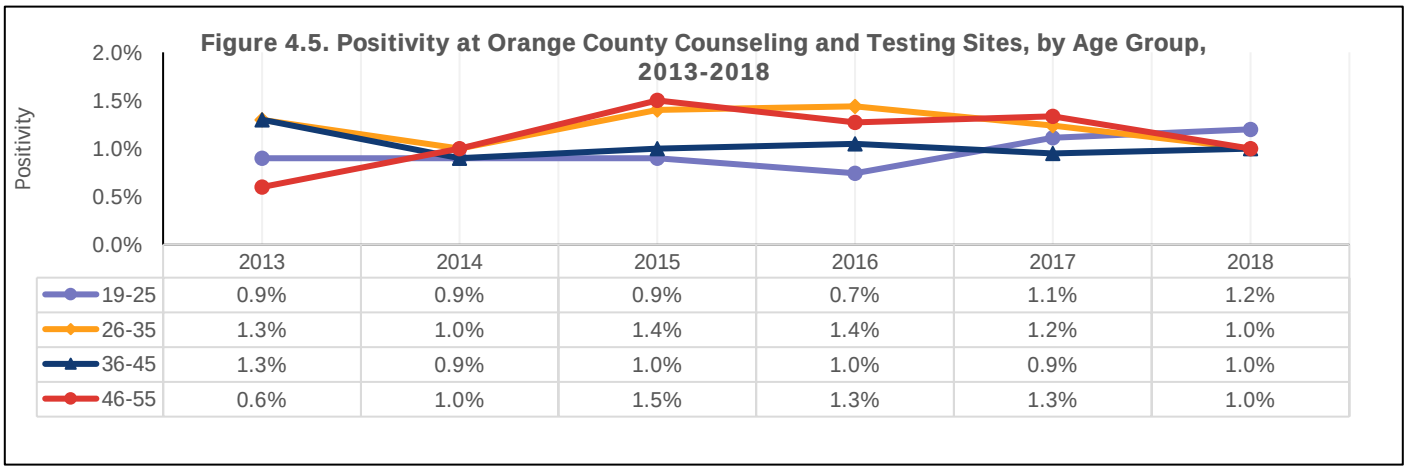
| Age Group | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| 0-18 | 441 | * | 368 | * | 290 | * |
| 19-25 | 2,865 | 26 | 2,811 | 25 | 2,766 | 25 |
| 26-35 | 3,130 | 40 | 3,031 | 31 | 3,173 | 46 |
| 36-45 | 1,731 | 23 | 1,648 | 15 | 1,743 | 18 |
| 46-55 | 1,094 | 7 | 1,046 | 10 | 1,075 | 16 |
| 56+ | 467 | * | 429 | * | 493 | * |

*Fewer than 10 tests.

| Age Group | 2016 | | 2017 | | 2018 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| 0-18 | 279 | * | 219 | * | 251 | * |
| 19-25 | 2,825 | 21 | 2,427 | 27 | 2,078 | 24 |
| 26-35 | 3,406 | 49 | 3,153 | 39 | 2,899 | 29 |
| 36-45 | 1,813 | 19 | 1,581 | 15 | 1,622 | 17 |
| 46-55 | 1,100 | 14 | 974 | 13 | 928 | 9 |
| 56+ | 508 | * | 554 | * | 586 | * |

*Fewer than 10 tests.

**Figure 4.5** displays the percent of positive tests by age group between 2013 and 2018 for age groups with 10 or more positive tests. No single age group has had the highest positivity rate over this period of time.




| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| 19-25 | 0.9% | 0.9% | 0.9% | 0.7% | 1.1% | 1.2% |
| 26-35 | 1.3% | 1.0% | 1.4% | 1.4% | 1.2% | 1.0% |
| 36-45 | 1.3% | 0.9% | 1.0% | 1.0% | 0.9% | 1.0% |
| 46-55 | 0.6% | 1.0% | 1.5% | 1.3% | 1.3% | 1.0% |

## HIV Counseling and Testing by Mode of Exposure

**Table 4.4** displays the number of tests and the number of positive results each year at C&T sites between 2013 and 2018 by mode of exposure. As shown, those who reported being exposed through heterosexual contact received the highest number of tests in 2013 and 2014, men who have sex with men (MSM) had the highest number in all other years. Injection drug users (IDU) have the third highest number of tests, outside of unknown mode of exposure..

**Table 4.4. Number of Tests Provided and Positive Results at Orange County C&T Sites by Mode of Exposure, 2013-2018**

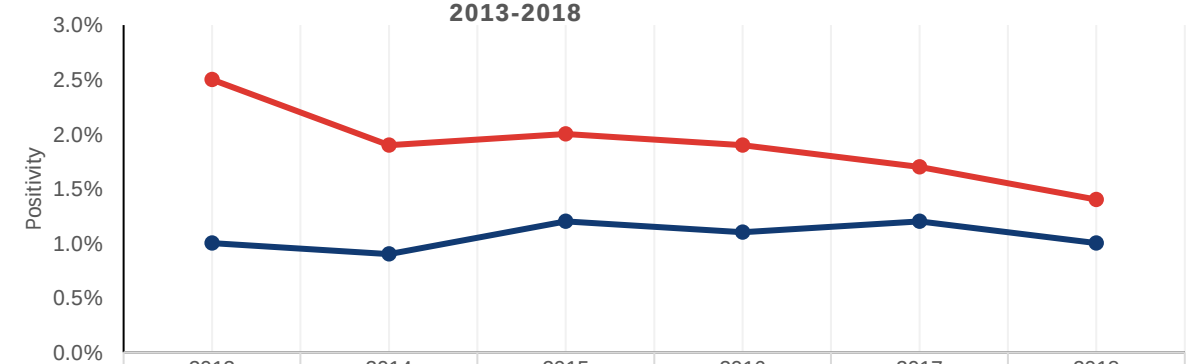
| Mode of Exposure | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| MSM | 3,204 | 80 | 3,462 | 66 | 3,837 | 77 |
| IDU | 705 | * | 669 | 0 | 639 | * |
| MSM/IDU | 65 | * | 103 | * | 89 | 7 |
| Heterosexual Contact | 4,281 | * | 3,643 | * | 3,586 | 14 |
| Transgender | 138 | * | 188 | * | 193 | * |
| Unknown | 866 | * | 665 | * | 578 | * |

| Mode of Exposure | 2016 | | 2017 | | 2018 | |
|---|---|---|---|---|---|---|
| | Total Tests | Number Positive | Total Tests | Number Positive | Total Tests | Number Positive |
| MSM | 4,464 | 85 | 4,545 | 76 | 4,166 | 58 |
| IDU | 406 | * | 342 | * | 221 | * |
| MSM/IDU | 82 | * | 73 | * | 69 | * |
| Heterosexual Contact | 3,596 | 11 | 2,857 | 10 | 2,592 | * |
| Transgender | 214 | * | 195 | * | 152 | * |
| Unknown | 676 | * | 514 | * | 570 | * |

"Heterosexual Contact" includes HIV-positive sex partner, IDU sex partner, MSM sex partner, Sex worker, Sex worker partner, Heterosexual multiple partners, and Heterosexual single partner.
"Transgender" includes both male to female and female to male transgender individuals.
*Fewer than 10 tests.

**Figure 4.6** displays the percent of positive tests by mode of exposure for MSM and all testers.

**Figure 4.6. Positivity at Orange County Counseling and Testing Sites, by Mode of Exposure, 2013-2018**




| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| MSM | 2.5% | 1.9% | 2.0% | 1.9% | 1.7% | 1.4% |
| Total | 1.0% | 0.9% | 1.2% | 1.1% | 1.2% | 1.0% |

# Chapter 5: HIV Testing in the Orange County Jails

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## HIV Testing in the Orange County Jails

HIV Testing in the Orange County jails began due to the expanded testing program funded by the State Office of AIDS (SOA). The goal of the project was to routinize HIV screening in medical settings, identify a positivity rate for newly identified positives of at least 0.1%, and link HIV-positive individuals to care and support services.

Figure 5.1 (below) shows the total number of HIV tests performed at the Orange County jails through December 2018. There were 33,535 tests at five testing sites.

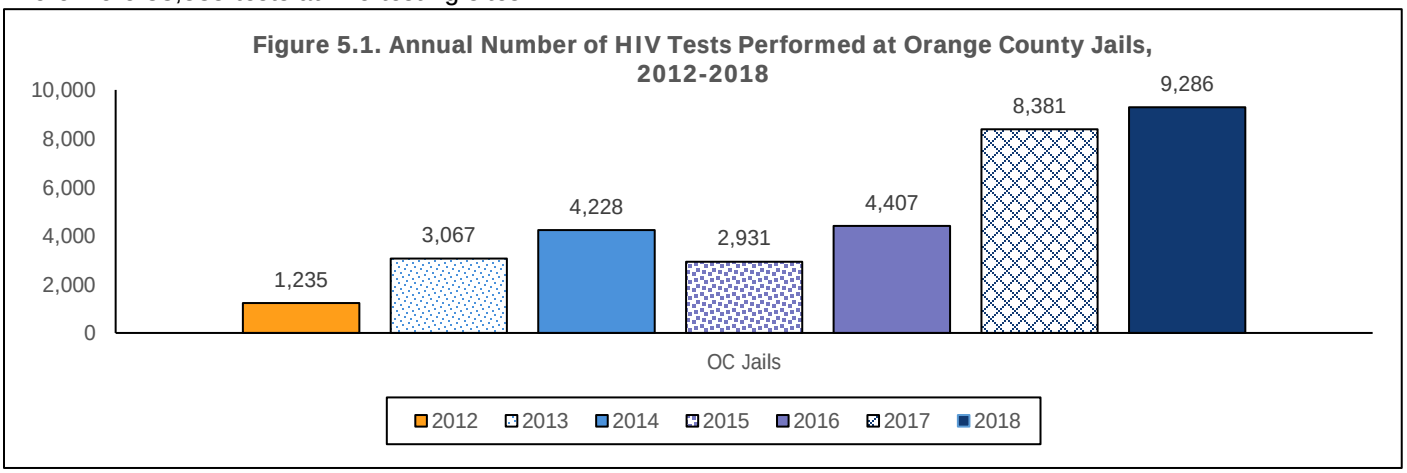
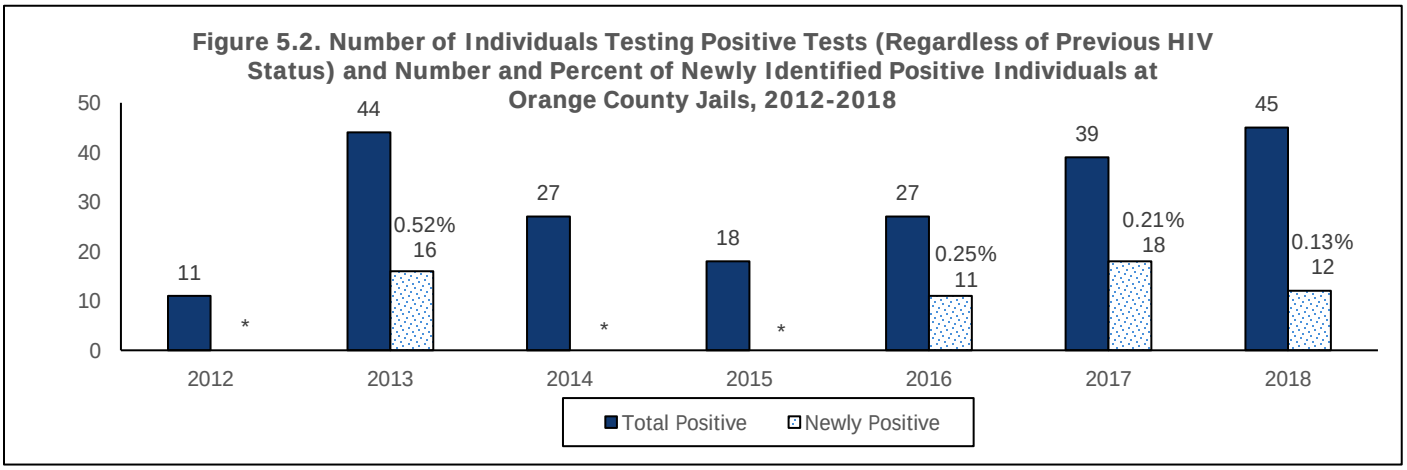



Figure 5.2 (below) displays the positive individuals tested, number of newly identified positive individuals, and percent of newly positive individuals at the Orange County Jails by year through December 2018. The total new positivity rate for all years combined is 0.24%.

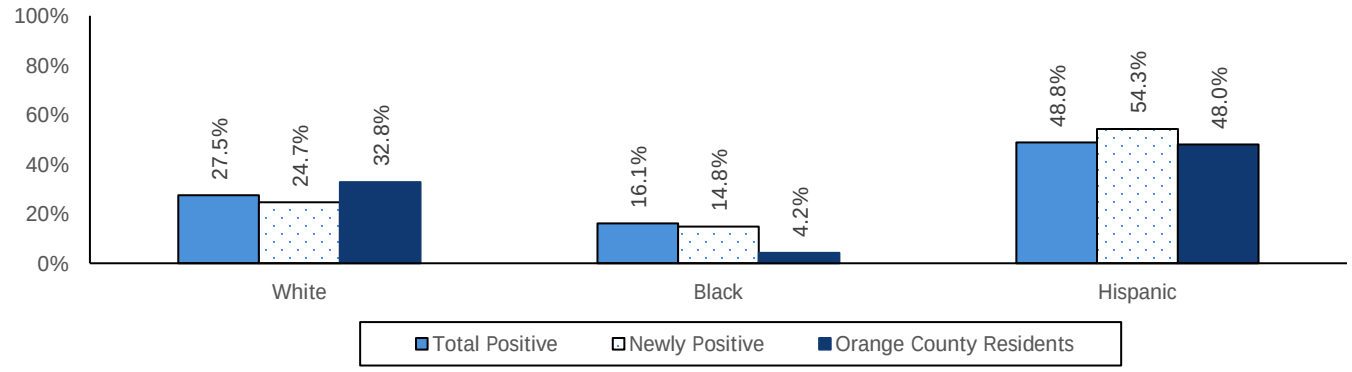



*Fewer than 10 were newly positive.

# HIV Testing in the Orange County Jails by Race/Ethnicity

Figure 5.3 (below) displays the race/ethnicity of newly identified positives (in race/ethnicities with 10 or more newly positive), total positives, and all Orange County residents diagnosed during the same time period (2012-2018) by race/ethnicity.

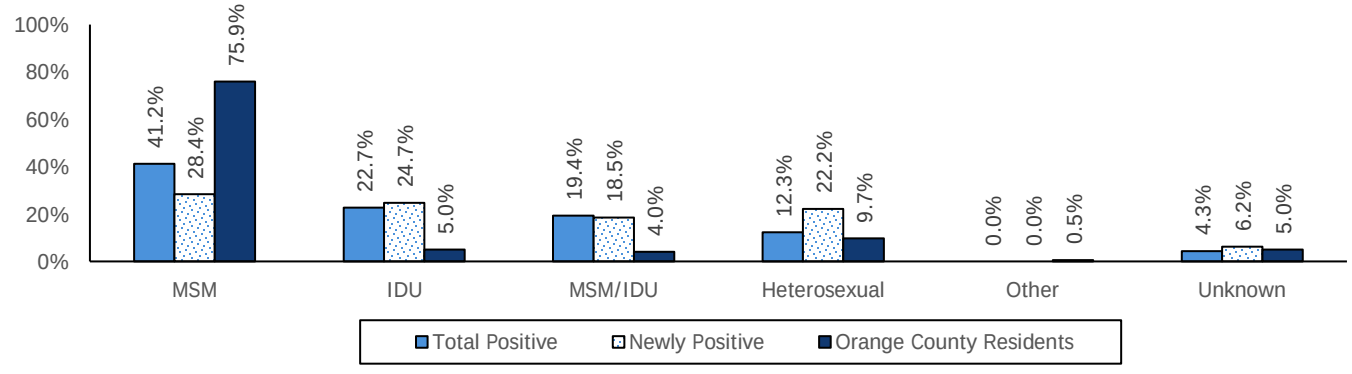
**Figure 5.3. Total Positives and Newly Identified Positives at Orange County Jails vs. All Orange County Residents Diagnosed by Race/Ethnicity, 2012-2018**




# HIV Testing in the Orange County Jails by Mode of Transmission

Figure 5.4 (below) displays the mode of transmission of newly identified positives, total positives, and all Orange County residents diagnosed during the same time period (2012-2018) by mode of transmission.

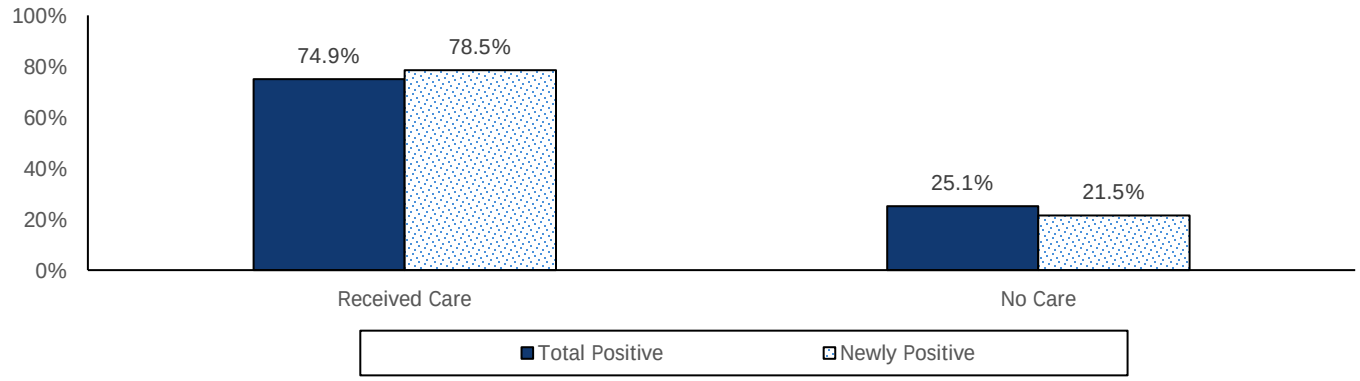
**Figure 5.4. Total Positives and Newly Identified Positives at Orange County Jails vs. All Orange County Residents Diagnosed by Mode of Transmission, 2012-2018**



# HIV Testing in the Orange County Jails by Linkage to Care

Figure 5.5 (below) show the percent of persons testing through expanded testing at the Orange County jails who had HIV care that did not occur in the Orange County jail after their positive test for newly identified positives and total positives. HIV care is defined as having a CD4 count or viral load test.

**Figure 5.5. Total Positives and Newly Identified Positives at Orange County Jails Obtaining Care After Release, 2012-2018**



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# Chapter 6: National HIV/AIDS Strategy

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## Overview of National HIV/AIDS Strategy Goals and Objectives

In July 2015, the White House released the National HIV/AIDS Strategy (NHAS) for the United States Updated to 2020, which outlined the goals for a national response to HIV in the United States. The goals include: 1) reducing new HIV infections; 2) increasing access to care and optimizing health outcomes for persons living with HIV; 3) reducing HIV-related health disparities.

Orange County's 2018-21 Integrated HIV Prevention and Care Plan (Integrated Plan) aligned with the updated NHAS indicators. The indicators associated with the first three NHAS goals are measurable using current Orange County data sources, shown below. The proposed targets for 2021 were suggested by the Priority, Setting, Allocations, and Planning (PSAP) Committee and are presented to the Integrated Plan Committee (IPC) to finalize. Planning Council approved the final targets for 2021.

**Goal 1: Reducing New HIV Infections**

| | Baseline (2015) | 2018 | 2021 Goal |
|---|---|---|---|
| **Objective 1:** Increase the percentage of people living with HIV who know their serostatus. | 91.0% | 87.7%[30] | 91.0% |
| **Objective 2:** Reduce the number of new HIV diagnoses. | 300[31] | 280 | 210 |
| **Objective 2-1:** Reduce the HIV transmission rate[29]. | 5.0[32] | 4.4 | 3.0 |
| **Objective 2-2:** Increase number of high-risk populations who are on PrEP[30]. | N/A[33] | 3,000[34] | 5,160[35] |
| **Objective 3:** Reduce the percentage of young gay and bisexual men who engage in HIV-risk behaviors.[36] | N/A[37] | N/A[34] | N/A[34] |

[30] The total number of persons estimated to be living with HIV is based on the Centers for Disease Control and Prevention calculation methodology updated in 2016. The calculation is the number of persons known to be living with HIV (6,369) divided by 0.877. The difference between this calculation (7,262) and 6,369 is the additional number of persons estimated to be living with HIV disease but are unaware of their diagnosis (893).
[31] The updated new HIV diagnosis for 2015 is 331; therefore, there has been a decrease in cases.
[32] Objective 2-1 was not included in the original Integrated Plan. The transmission rate is the number of new cases diagnosed per every 100 persons living with HIV. HIV transmission rate indicates trends in new HIV infections and has been included for possible addition in the Integrated Plan. The updated transmission rate for 2015 is 6.0; therefore, there has been a decrease in transmission rate.
[33] Objective 2-2 was not included in the original Integrated Plan. Integrated Plan Committee (formerly Prevention and Care Strategies) requested to look at the inclusion of a PrEP measure to align with the California Integrated Plan that has a goal to increase the number of high-risk populations on PrEP to 60,000 by December 2021. In 2017, the number on PrEP was estimated to be 1,100 based on data obtained from Gilead. A 2018 estimate was not available for this report.
[34] The 3,000 is an approximate number as of 5/29/19.
[35] In 2017, the California Department of Public Health estimated that 8,559 individuals living in Orange County could benefit for PrEP.
[36] [7]Young gay and bisexual men who engage in high-risk behaviors is defined as male students in grades 9-12 that had sexual intercourse with only males or with both males and females with multiple partners within the last three months or had unprotected sex or injected any illegal drug and responded to the Youth Risk Behavior Surveillance System (YRBSS).
[37] N/A: Data is not available for Orange County. Data is gathered using the YRBSS. California's version of the YRBSS the California Healthy Kids Survey (CHKS) would require modification to collect the data required for this Indicator.

**Goal 2: Increase Access to Care and Optimize Health Outcomes for Persons Living with HIV**

| | Baseline (2015) | 2018 | 2021 Goal |
|---|---|---|---|
| **Objective 4:** Increase the proportion of newly diagnosed persons linked to HIV medical care within one month of their HIV diagnosis. | 38.7% | 58.2% | 65.0% |
| **Objective 5:** Increase the percentage of persons with diagnosed HIV infection who are retained[35] in HIV medical care. | 77.0%[38] | 75.7% | 90.0% |
| **Objective 6:** Increase the percentage of persons with diagnosed HIV infection who are virally suppressed. | 66.1% | 69.4% | 80.0% |
| **Objective 7:** Reduce the percentage of persons in Ryan White HIV medical care who are homeless. | 4.3% | 3.9% | 4.0% |
| **Objective 8:** Reduce the death rate[36] among persons with diagnosed HIV infection. | 4.6[39] | 6.2 | 4.2 |

**Goal 3: Reduce HIV-Related Health Disparities**

| | Baseline (2015) | 2018 | 2021 Goal |
|---|---|---|---|
| **Objective 9:** Reduce disparities in the rate of new diagnoses in the following groups: | | | |
| • Gay and bisexual men | 40.8[40] | 33.6 | 28.6 |
| • Black gay and bisexual men | 100.0[41] | 57.3 | 40.0 |
| • Hispanics | 0.36[42] | 0.53 | 0.30 |
| • Transgender Women | N/A[43] | N/A[40] | N/A[40] |
| **Objective 10:** Increase the percentage of individuals who are virally suppressed among the following groups: | | | |
| • Youth ages 13-24 | 59.1% | 64.7% | 74.0% |
| • Persons who inject drugs | 50.3% | 50.6% | 57.0% |

[38] Retained in HIV medical care is defined as the number of persons who had at least two viral load or CD4 results within a two year period with at least three months in-between the first and last result. The 2015 Baseline has been updated to reflect this definition.
[39] Death rate includes any cause of death. The updated death rate for 2015 is 7.3. This update is based on improved access to death data. There has been a decreased since 2015 updated baseline.
[40] The updated disparity rate for 2015 is 41.1. There has been a decrease from the updated 2015 rate.
[41] The updated disparity rate for 2015 is 78.6. There has been a decrease from the updated 2015 rate.
[42] The updated disparity rate for 2015 is 0.40. There has been an increase from the updated 2015 rate.
[43] N/A: Population estimates are not available for transgender women.

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# Appendices

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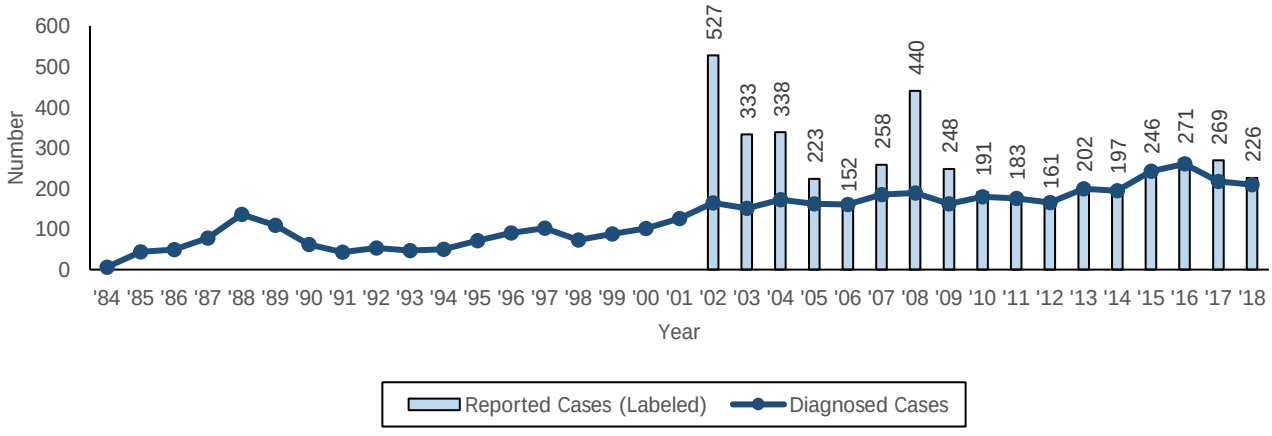
# Appendix I: HIV (non-AIDS) and AIDS Diagnosis and Reporting Years

## Year of Diagnosis versus Year of Report:

There are two dates associated with an HIV or AIDS case, the date of HIV or AIDS diagnosis and the date the case was reported to Orange County HIV/AIDS Surveillance and Monitoring. Most HIV/AIDS data reports utilize the report date to determine what year the case was reported. When showing case demographics in individual years, this data report will focus on the date that the case was diagnosed with HIV or AIDS. Presenting data by year of diagnosis gives a clearer picture of the current nature of the epidemic and the demographics of the most newly infected individuals. Due to reporting delays, diagnosis data for 2018 is incomplete as cases diagnosed in 2018 will continue to be reported throughout 2019. By using the year of report, the number of cases reported each year should be relatively stable making it appropriate to compare the most current year of reporting to previous years. However, when HIV reporting began by non-name code and again by name, additional surveillance efforts were made to identify cases of HIV or AIDS never reported into HARS. This resulted in an increased number of cases being reported that were not reflective of an increase in the epidemic, nor were they reflective of the demographics of persons newly diagnosed.

## Overall HIV Case Reporting:

**Figure A1.1 HIV Cases by Original Year of Report and Year of Diagnosis, Orange County, 1984-2018**

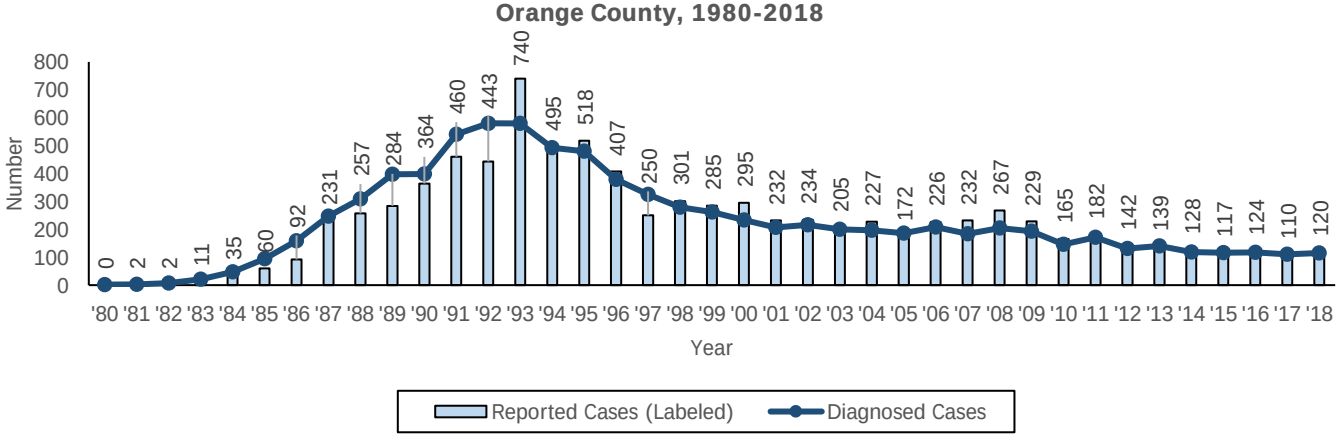



The first year of diagnosis for a case that is currently diagnosed HIV (non-AIDS) is 1984.
^2018 diagnosed cases are considered provisional due to reporting delays.

HIV reporting by non-name code originally began in 2002 although cases reported were diagnosed with HIV as early as 1984, as shown in Figure A1:1. The cases originally reported in 2002-2005 were reported by non-name code and have since been re-reported with a name. Of the 226 HIV cases reported in 2018, 209 cases were diagnosed in 2018. The increase in cases reported in 2008 is due to intensive surveillance efforts to identify cases previously unreported under either reporting methodology and included 242 cases (55.0%) that were diagnosed prior to the year 2002 (before HIV reporting began).

## Overall AIDS Case Reporting:

**Figure A1.2 AIDS Cases by Year of Report and Year of Diagnosis, Orange County, 1980-2018**




^2018 diagnosed cases are considered provisional due to reporting delays.

The initial Orange County AIDS case was reported in 1981 and, as shown in Figure A1:2, reported cases continued to rise each year until 1993, except for a slight decrease in 1992. Seven hundred and forty (740) AIDS cases were reported in Orange County in 1993, following the expansion of the Centers for Disease Control (CDC) AIDS surveillance case definition, which was implemented in January of that year. The decreasing and leveling of reported AIDS cases after 1995 coincides with advancements in treatment, particularly the introduction of highly active antiretroviral therapy (HAART). In 2018, Orange County reported 120 AIDS cases, (an increase of 9.1% from the 110 cases reported in 2017) and 115 new AIDS cases were diagnosed.

# APPENDIX II: GLOSSARY OF TERMS

| | |
|---|---|
| **Age-adjusted death rate** | A statistical method applied to the crude death rate to remove the effect of age, thus permitting unbiased comparison of rates between groups having different underlying compositions with respect to age. |
| **Acquired Immuno-Deficiency Syndrome (AIDS)** | A disease of the body's immune system caused by the human immunodeficiency virus (HIV). AIDS is characterized by the death of CD4 cells (an important part of the body's immune system), which leaves the body vulnerable to life-threatening conditions such as infections and cancers. |
| **Antiretroviral therapy (ART)** | Treatment with drugs that inhibit the ability of retroviruses (such as HIV) to multiply in the body. The antiretroviral therapy recommended for HIV infection is referred to as highly active antiretroviral therapy (HAART), which uses a combination of medications to attack HIV at different points in its life cycle. (See *HAART*) |
| **Asymptomatic** | Having no obvious signs or symptoms of disease. |
| **CD4 ("helper T") cell** | Also known as helper T cell or CD4 lymphocyte. A type of infection-fighting white blood cell that carries the CD4 receptor on its surface. CD4 cells coordinate the immune response, signaling other cells in the immune system to perform their special functions. The number of CD4 cells in a sample of blood is an indicator of the health of the immune system. HIV infects and kills CD4 cells, leading to a weakened immune system. |
| **Case** | A particular instance of disease. |
| **Case definition** | Standard criteria for deciding whether a person has a particular health-related condition or disease. For AIDS, the CDC lists specific conditions a person must have in order to be classified as an AIDS case. |
| **Case fatality rate** | The proportion of persons contracting a disease who die of that disease: the numerator is the number of deaths caused by a disease and the denominator is the number of diagnosed cases of the disease. |
| **Case rate per 100,000 population** | The number of cases reported within a group divided by the number of people in that group. For example, if there were 10 HIV cases reported among Blacks and the Black population is 45,000, the case rate for Blacks would be 22.2 per 100,000 (10/45,000 x 100,000). This would mean that for every 100,000 Black people, 22 of them are infected with HIV. The case rate provides a way to compare the impact of a disease between different groups. |
| **Centers for Disease Control and Prevention (CDC)** | An agency of the U.S. Department of Health and Human Services (DHHS) that is charged with protecting the health and safety of citizens at home and abroad. The CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. |
| **Combination therapy** | Two or more drugs used together to achieve optimal results in controlling HIV infection. Combination therapy has proven more effective in decreasing viral load than monotherapy (single-drug therapy), which is no longer recommended for the treatment of HIV. An example of combination therapy is the use of two NRTIs plus a PI or an NNRTI. |

| | |
|---|---|
| **Concurrent Diagnosis** | A diagnosis of AIDS occurring within 1 month of initial HIV diagnosis. |
| **Crude death rate** | A rate giving the total number of events occurring in an entire population over a period of time, without reference to any of the individuals or subgroups within the population. |
| **Cumulative** | Pertaining to the total number of persons/cases reported for a given disease or event of interest. |
| **Cumulative rate** | The cumulative number of cases reported as AIDS during a specified time period divided by the total population at risk for AIDS in the most recent year of reporting. |
| **Demographic** | The characteristics of a population (e.g., sex, race, age, geographic location). |
| **eHARS** | Electronic HIV/AIDS Reporting System. Surveillance database, maintained by the State Office of AIDS, containing HIV and AIDS reports. |
| **Epidemic** | The occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time. |
| **Epidemiology** | The branch of medical science that studies the occurrence, distribution, and control of a disease in populations. |
| **Exposure** | Contact with a factor that is suspected to influence the risk for a person developing a particular disease. |
| **Gender** | Term or variable to classify a person as male or female; recent gender categories may now include both male-to-female and female-to-male transgender persons. |
| **HAART** | Highly Active Antiretroviral Therapy. The name given to treatment regimens that aggressively suppress HIV replication and progression of HIV. The usual HAART regimen combines three or more anti-HIV drugs. |
| **HARS** | HIV/AIDS Reporting System. Surveillance database containing HIV and AIDS reports. |
| **HIV** | The virus that causes Acquired Immunodeficiency Syndrome (*AIDS*). HIV is in the retrovirus family, and two types have been identified: HIV-1 and HIV-2. HIV-1 is responsible for most HIV infections throughout the world, while HIV-2 is found primarily in West Africa. |
| **HIV Case Registry** | Also known as the Registry, it is an Access database containing information on both residents and non-residents receiving care in Orange County. The data in this report contains information on resident HIV cases and was extracted from the Registry on December 31, 2009. |
| **HIV** | Total cases reported to Orange County HIV/AIDS Surveillance and Monitoring Program, regardless of current diagnosis (HIV or AIDS). |
| **IDU** | Injection drug user. Individual who injects non-prescription drugs into their body. |
| **Immunosuppressed** | Inability of the immune system to function normally. May be caused by drugs (for example, chemotherapy), or result from certain diseases (for example, HIV infection). |
| **Incidence** | The occurrence of new cases of a particular disease in a given population in a specific time period (usually one year). |

| | |
|---|---|
| **Incidence rate** | The rate of occurrence of new cases of a particular disease in a given population. Often reported as number of cases per 100,000 people. |
| **Indicator condition** | Illnesses caused by various organisms that occur in people with weakened immune systems, including people with HIV/AIDS. Indicator conditions common in people with AIDS include *Pneumocystis jiroveci* pneumonia; cryptosporidiosis; histoplasmosis; toxoplasmosis; other parasitic, viral, and fungal infections; and some types of cancers. |
| **MSM** | Men who have sex with men. For HIV/AIDS reporting, it is a mode of exposure, and included men who have same sex contact (homosexual or bisexual). |
| **Migration** | Movement from one area or jurisdiction to another. |
| **Mode of exposure** | The manner in which a disease was passed from one individual to another. In describing HIV/AIDS cases, it identifies how a person may have been exposed to HIV. |
| **NRR** | No reported risk; cases of HIV or AIDS in which no risk behavior for infection was identified. |
| **Non-name code** | Code required by regulation that was used to report new cases of HIV infection in California between July 1, 2002 and April 16, 2006. Comprised of an alphanumeric code (based on last name), date of birth, gender, and last four digits of the social security number. |
| **Overrepresentation** | A group that is overrepresented or disproportionately impacted makes up a greater proportion of the epidemic than their proportion in the population. For example, if 40% of the population are Hispanics and 60% of HIV/AIDS cases are among Hispanics, Hispanic are overrepresented or disproportionately impacted in the HIV/AIDS epidemic. |
| **Pandemic** | An outbreak of an infectious disease, such as HIV, that affects people or animals over an extensive geographical area. Also known as a global epidemic. |
| **Pediatric cases** | HIV or AIDS cases diagnosed in persons age 12 or younger. |
| **PLWA** | Persons living with AIDS. |
| **PLWH/A** | Persons living with HIV or AIDS. Synonymous with PLWH. |
| **PLWH** | Persons living with HIV. |
| **PLWH** | Persons living with HIV. Synonymous with PLWH/A. |
| **Population density** | The number of people per square mile. |
| **Prevalence** | The number of people in a population affected with a particular disease or condition at a given time, usually the end of a particular year. Prevalence can be thought of as a snapshot of all existing cases of a disease or condition at a specified time. |
| **Prevalence rate** | The number of people in a population affected with a particular disease or condition at a given time. Prevalence can be thought of as a snapshot of all existing cases of a disease or condition at a specified time. It is often expressed per 100,000. |

| | |
|---|---|
| **Proportion** | Ratio of a part of the whole to the whole, for example, 33% of Orange County residents are Hispanic. |
| **Rate** | The frequency of an event in a specified population. Rates are often multiplied by a factor to give the number of events per 1,000, 10,000, or 100,000 population. (See *incidence rate*) |
| **Report delay** | The period of time between the date a reportable disease is diagnosed by a health care provider and the date the diagnosis is reported to public health officials. |
| **Surveillance** | A process to monitor disease, involving close supervision during the incubation period of possible contacts of individuals exposed to an infectious disease. |
| **Transgender** | People whose gender identity does not conform to norms and expectations traditionally associated with a binary classification of gender based on external genitalia, or, more simply, their sex assigned at birth. It includes people who self-identify as gender variant; male to female or transgender women; female to male or transgender men; many other gender nonconforming people with identities beyond the gender binary; and people who self-identify simply as female or male. Gender identity, gender expression, and sexual orientation are separate, distinct concepts, none of which is necessarily linked to one's genital anatomy. |
| **Underrepresentation** | A group that is underrepresented makes up a smaller proportion of the epidemic than their proportion in the population. For example, if 16% of the population are Asian/Pacific Islander (API) and 4% of HIV/AIDS cases are among API, APIs are underrepresented in the HIV/AIDS epidemic. |
| **Unique identifier** | A code used as a substitute for a person's identifying information, such as name, date of birth, and address, that can be retraced to a unique person. (Compare *Anonymous HIV testing* and *Non-name code*) |
| **Year of diagnosis** | The year in which an individual has met the CDC case definition for HIV/AIDS. |
| **Year of report** | The year in which an HIV/AIDS case is reported to the County of Orange Health Care Agency. |

**Definition Sources:**

- AIDS*info* Glossary. U.S. Department of Health Services (DHHS). https://aidsinfo.nih.gov/understanding-hiv-aids/glossary.
- A.D.A.M. Medical Encyclopedia. MedlinePlus, National Library of Medicine. https://medlineplus.gov/encyclopedia.html.
- Merck Manual Professional Version. Merk & Co., Inc. https://www.merckmanuals.com/professional

# APPENDIX III: TECHNICAL NOTES

## Year of Diagnosis versus Year of Report:

There are two dates associated with an HIV case, the date of HIV diagnosis and the date the case was reported to Orange County HIV/AIDS Surveillance and Monitoring Program. Most HIV/AIDS data reports utilize the report date to determine what year the case was reported. When showing case demographics in individual years, this data report will focus on the date that the case was diagnosed with HIV (unless this date is absent, in which case the AIDS diagnosis date will be used). Presenting data by year of diagnosis gives a clearer picture of the current nature of the epidemic and the demographics of the most newly infected individuals. Due to reporting delays, diagnosis data for 2018 is incomplete as cases diagnosed in 2018 will continue to be reported throughout 2018. By using the year of report, the number of cases reported each year should be relatively stable making it appropriate to compare the most current year of reporting to previous years. However, in recent years additional surveillance efforts were made to identify cases of HIV never reported to the SOA. This resulted in an increased number of cases being reported that were not reflective of an increase in the epidemic, nor were they reflective of the demographics of persons newly diagnosed.

## Calculation of Rates:

- Population based rates were calculated by using population figures from California Department of Finance data sets; the numerator represents the number of cases in a particular sub-population, period of time, or the whole population. The rate is expressed per 100,000 population.

- Percentages are calculated by dividing the number of cases in a particular group by the total number of cases reported or diagnosed for that time period or subset. For example, the percentage of cumulative cases reported that were age 26-35 at diagnosis would be the number of cases age 26-35 at diagnosis divided by the total number of cumulated cases reported.

## Data Limitations:

- Reported vs. Diagnosed cases: Data presented by demographics in this report represents the number of HIV cases diagnosed in a particular year. Caution must be taken in interpreting these data, since cases will continue to be reported which were diagnosed in previous years, so diagnosis data is never "complete." However, it does give a more accurate picture of the current epidemic and who is testing positive today.

- Attention should be given to what the numbers represent (rates, number of cases, percentages, etc.). Please refer to the Glossary of Terms for definitions.

- Surveillance data are revised as duplicate cases are removed at the state level. Therefore, the total numbers presented for a particular period are subject to revision.

- The number of HIV cases among some subgroups may be small. Small numbers may appear misleadingly large when viewed as a rate. Therefore, large rates for some characteristics should be interpreted with caution.

## National HIV/AIDS Strategy Methodology:

- **Goal 1: Reduce the Number of New HIV Infections**
  - Objectives 1, 2, 3:
    - HIV incidence (new HIV diagnosis) estimates are based on algorithms developed by the Centers for Disease Control and Prevention (CDC) March 2018.
    - Rate for Objective 2-1 is per 100 PLWH while other rates are calculated per 100,000.
- **Goal 2: Increase Access to Care and Optimize Health Outcomes for People Living with HIV**
  - Objectives 4, 5, 6, 7, 8:
    - Laboratory data were used as a proxy for care visits; a care visit was defined as a CD4 and/or viral load laboratory result reported to Orange County Health Care Agency (OCHCA).
    - Newly diagnosed persons linked to care were defined as persons diagnosed with HIV infection during a calendar year and received care within one months of their diagnosis (30 days).
    - Homelessness in the Ryan White population is determined by the number of clients who were not stably housed at some point during 2018.
- **Goal 3: Reduce HIV-related Health Disparities**
  - Objectives 9, 10:
    - Denominator for 2018 included current Orange County residents diagnosed with HIV on or before December 31, 2018.
    - Persons whose most recent viral load test result was less than 200 copies/ml during January 1-December 31 of each year were considered virally suppressed and included in the numerator of those with an “undetectable viral load”.

## Suggested Citation:

- County of Orange, Health Care Agency, HIV/AIDS Surveillance and Monitoring, July 2019.

# APPENDIX IV: AIDS DEFINITIONS

**2014 Stages of HIV**

1. Acute Infection (Stage 1):
    - Within 2-4 weeks after HIV infection, many, but not all, people develop flu-like symptoms. Symptoms can include fever, swollen glands, sore throat, rash, muscle and joint aches and pains, fatigue, and headache. This is called "acute retroviral syndrome" (ARS) or "primary HIV infection," and it's the body's natural response to the HIV infection. During this early period of infection, large amounts of virus are being produced in the body. The virus uses CD4 cells to replicate and destroys them in the process. Because of this, CD4 counts can fall rapidly. Eventually the immune response will begin to bring the level of virus in the body back down to a level called a viral set point, which is a relatively stable level of virus in the body. At this point, CD4 counts begins to increase, but may not return to pre-infection levels. It may be particularly beneficial to begin ART during this stage.
2. Clinical Latency (Stage 2):
    - "Latency" means a period where a virus is living or developing in a person without producing symptoms. During the clinical latency stage, people who are infected with HIV experience no HIV-related symptoms, or only mild ones. (This stage is sometimes called "asymptomatic HIV infection" or "chronic HIV infection.") During the clinical latency stage, the HIV virus continues to reproduce at very low levels, although it is still active.
3. AIDS (Stage 3):
    - This is the stage of HIV infection that occurs when the immune system is badly damaged and becomes vulnerable to infections and infection-related cancers called opportunistic infections. When the number of your CD4 cells falls below 200 cells per cubic millimeter of blood (200 cells/mm3), a person is considered to have progressed to AIDS. Progression to AIDS also occurs when a person develops one or more opportunistic illnesses, regardless of CD4 count.

**Table 1: Opportunistic Illnesses Included in the 2014 AIDS Surveillance Case Definition**

| AIDS INDICATOR DISEASE | CODE |
|---|---|
| Bacterial infections, multiple or recurrent (age five years and younger) | BI |
| Candidiasis of bronchi, trachea, or lungs | C |
| Candidiasis, esophageal | CE |
| Cervical cancer, invasive | ICC |
| Coccidiodomycosis, disseminated or extrapulmonary | COM |
| Cryptococcosis, extrapulmonary | CC |
| Crytosporidiosis, chronic intestinal (>1 month duration) | CS |
| Cytomegalovirus disease (other than liver, spleen, or nodes) | CMV |
| Cytomegalovirus retinitis (with loss of vision) | CMVR |
| Encephalopathy, HIV-related | HIVE |
| Herpes simplex: chronic ulcer(s) (>1 month duration) or bronchitis, pneumonitis, or esophagitis | HSV |
| Histoplasmosis, disseminated or extrapulmonary | HIS |
| Isosporiasis, chronic intestinal (>1 month duration) | I |
| Kaposi's sarcoma | KS |
| Lymphoma, Burkitt's (or equivalent term) | BL |
| Lymphoma, immunoblastic (or equivalent term) | IL |
| Lymphoma, primary in brain | PBL |
| Mycobacterium avium complex or Mycobacterium kansasii, disseminated or extrapulmonary | MAI |
| Mycobacterium tuberculosis, of any site, pulmonary, disseminated or extrapulmonary | MTB/PTB |
| Mycobacterium, other species or unidentified species, disseminated or extrapulmonary | MO |
| Pneumocystis jiroveci pneumonia (formerly Pneumocystis carinii pneumonia) | PCP |
| Pneumonia, recurrent | RP |
| Progressive multifocal leukoencephalopathy | PML |
| Salmonella septicemia, recurrent | SS |
| Toxoplasmosis of brain | TOXO |
| Wasting syndrome due to HIV | WS |

Source: Centers for Disease Control and Prevention, MMWR Recommendations and Reports/Vol. 63/No. 3, April 11, 2014.

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# APPENDIX V: DATA SOURCES

## Population Data:

- Population:
  - State of California, Department of Finance, Revised County Population Estimates and Components of Change by County, July 1, 1990-2000. Sacramento, California, February 2005.
  - State of California, Department of Finance, Population Estimates and Components of Change by County, July 1, 1999-2010. Sacramento, California, August 2011.
  - State of California, Department of Finance, California County Population Estimates and Components of Change by Year, July 1, 2010-2018. Sacramento, California, December 2018.
  - State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970–1989.* Sacramento, California, December 1998.
  - State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1990–1999.* Sacramento, CA, Revised May 2009.
  - State of California, Department of Finance, Race/Hispanics Population with Age and Gender Detail, 2000–2010. Sacramento, California, September 2012.
  - State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, February 2017.
  - State of California, Department of Finance, Population Estimates for California Cities and Counties, January 1, 1981 to January 1, 1990.
  - State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. Sacramento, California, August 2007.
  - State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts. Sacramento, California, November 2012
  - State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2018, with 2010 Census Benchmark. Sacramento, California, May 2018.
  - U.S. Census Bureau, American Community Survey, 2017.

## Chapters 1-3:

- Orange County HIV Data:
  - HIV/AIDS Case Registry, Data as of January 31, 2019.
- Orange County HIV Mortality Data:
  - State of California, Department of Health Services, Center for Health Statistics.

## Chapter 4:

- Counseling and Testing Data 2013-2014
  - Local Evaluation Online (LEO), Data as of August 11, 2015.
- Counseling and Testing Data 2015
  - Local Evaluation Online (LEO), Data as of February 18, 2016.
- Counseling and Testing Data 2016
  - Local Evaluation Online (LEO), Data as of March 28, 2017.
- Counseling and Testing Data 2017
  - Local Evaluation Online (LEO), Data as of March 15, 2018.
- Counseling and Testing Data 2018
  - Local Evaluation Online (LEO), Data as of February 19, 2019.

## Chapters 5:

- Orange County HIV Data:
  - HIV/AIDS Case Registry, Data as of January 31, 2019.
- HIV Tests Conducted in the Orange County Jails:
  - Orange County Public Health Lab.

## Chapter 6:

- National HIV/AIDS Strategy
  - NHAS 2020: https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf.
  - NHAS 2020 Indicator Supplement: https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-indicators-supplement-dec-2016.pdf.
  - CDPH's Office of AIDS Integrated HIV Surveillance, Prevention, and Care Plan: https://archive.cdph.ca.gov/programs/aids/Documents/IntegratedPlan.pdf.
  - Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2010–2015. HIV Surveillance Supplemental Report 2018;23(No. 1). http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html. Published March 2018. Accessed April 24, 2018.

- **Goal 1: Reduce New HIV Infections**
  - **Indicators 1, 2, 3:**
    - HIV incidence (new HIV diagnosis) estimates are based on algorithms developed by the Centers for Disease Control and Prevention (CDC) March 2018.
    - Rate for Objective 2-1 is per 100 PLWH while other rates are calculated per 100,000.
- **Goal 2: Increase Access to Care and Optimize Health Outcomes for People Living with HIV (PLWH)**
  - **Indicators 4, 5, 6, 7, 8:**
    - Laboratory data were used as a proxy for care visits; a care visit was defined as a CD4 and/or viral load laboratory result reported to Orange County Health Care Agency (OCHCA).
    - Newly diagnosed persons linked to care were defined as persons diagnosed with HIV infection during a calendar year and received care within one months of their diagnosis (30 days).
    - Homelessness in the Ryan White population is determined by the number of clients that received an Outpatient Ambulatory service from the 17th Street Care Clinic or AltaMed who were not stably housed at some point during the year.
- **Goal 3: Reduce HIV-related Health Disparities**
  - **Indicators 9. 10:**
    - Denominator for 2018 included current Orange County residents diagnosed with HIV on or before December 31, 2018.
    - Persons whose most recent viral load test result was less than 200 copies/ml during January 1-December 31 of each year were considered virally suppressed and included in the numerator of those with an "undetectable viral load".

# APPENDIX VI: OTHER PUBLICATIONS

- HIV/AIDS Plans and Reports:
  - http://www.ochealthinfo.com/phs/about/dcepi/hiv/info/reports
- HIV/AIDS Fact Sheet:
  - http://www.ochealthinfo.com/phs/about/dcepi/hiv/info/stats