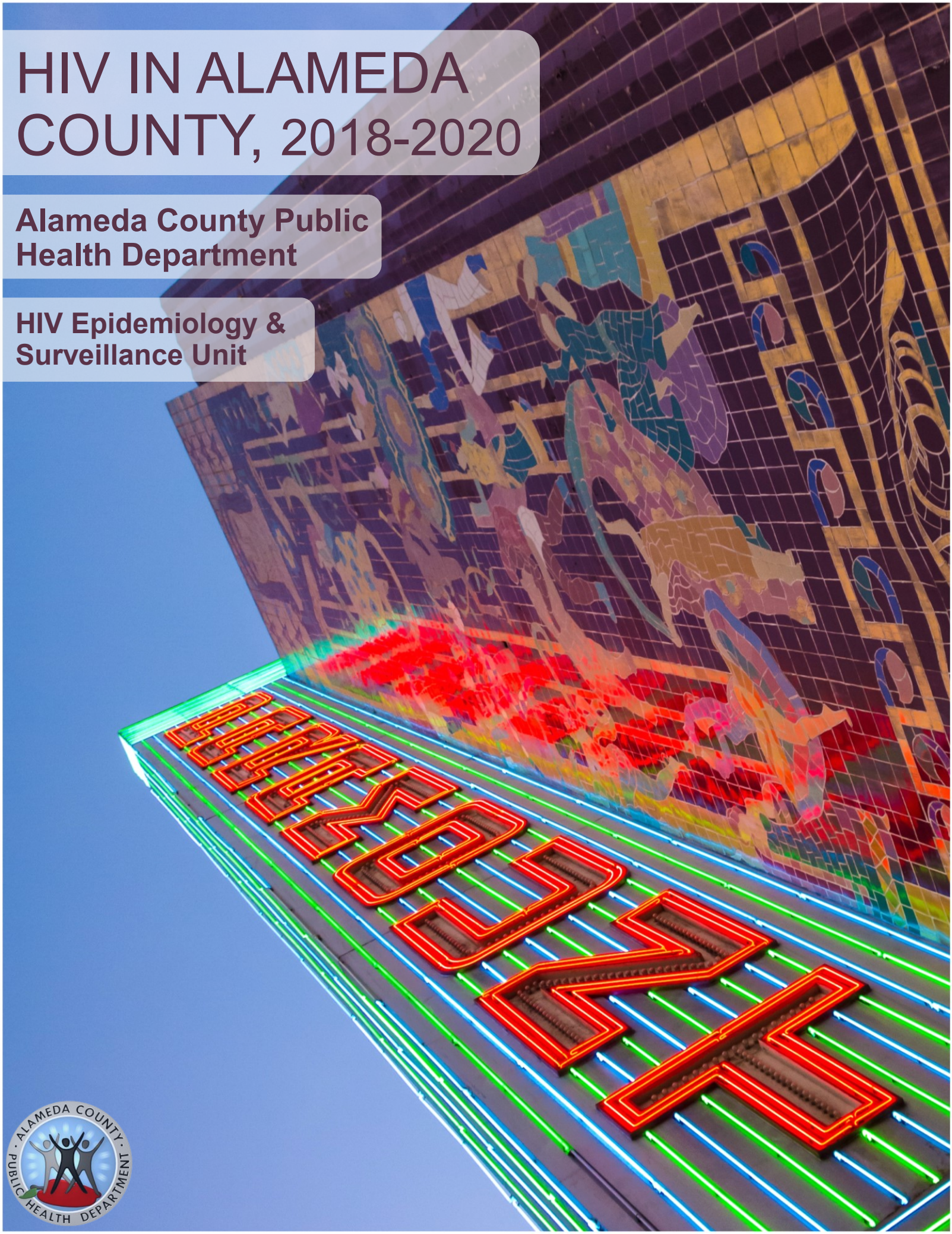
HIV IN ALAMEDA COUNTY, 2018-2020

Alameda County Public Health Department

HIV Epidemiology & Surveillance Unit



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December 2021

HIV Epidemiology and Surveillance Unit

Division of Communicable Disease Control and Prevention

Alameda County Public Health Department

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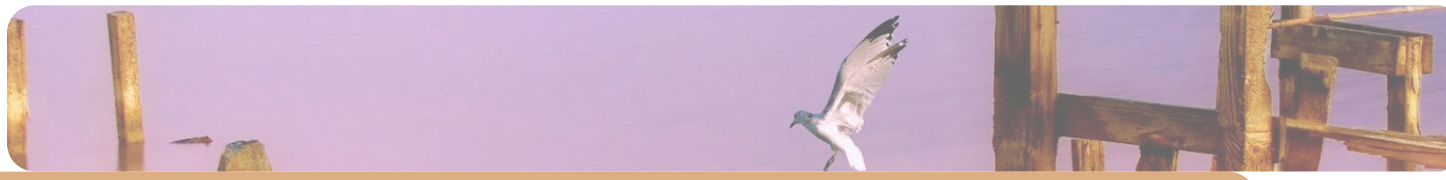

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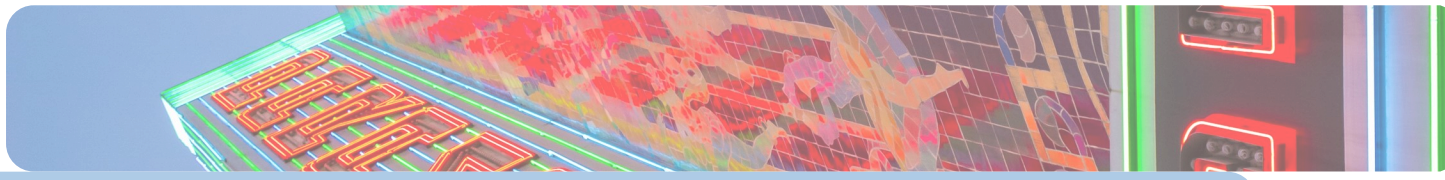

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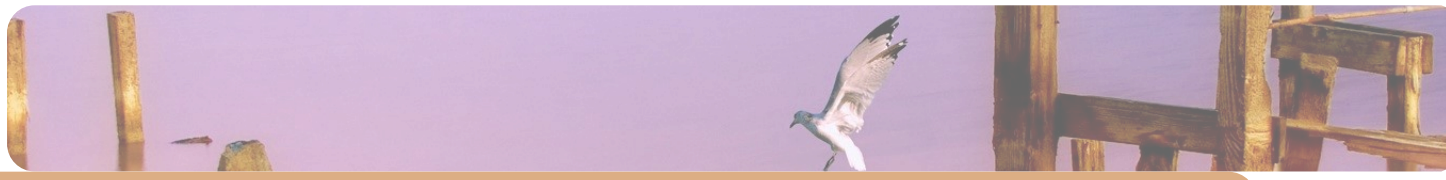

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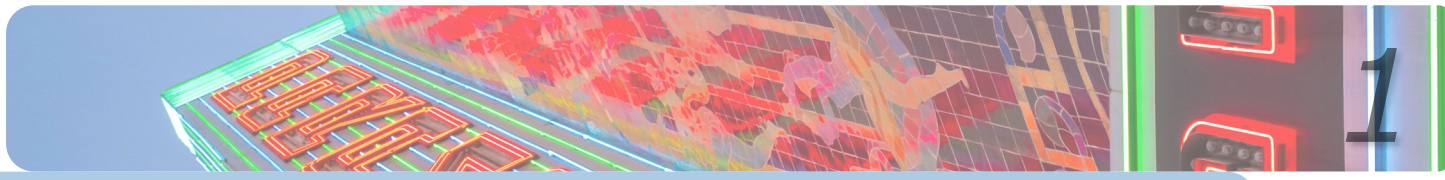


1 Background

Overview of this Report

This report is based on human immunodeficiency virus (HIV) case surveillance in Alameda County. It summarizes data on HIV in 5 chapters as described below.

1. New Diagnoses: This chapter describes patterns of HIV diagnosis in Alameda County, characterizing those who were recently diagnosed according to demographic factors, risk factors and stage of disease.
2. People Living with HIV: The second chapter of the report describes the characteristics of all people known to be living with HIV disease (PLHIV) in Alameda County. This chapter describes the total burden of HIV disease in the county and how it varies by demographic factors as well as by geography. It also describes changes in mortality rates (deaths) over time among those ever diagnosed with Acquired Immune Deficiency Syndrome (AIDS).
3. The Continuum of HIV Care: This chapter presents the continuum of HIV care in Alameda County. Modern medical treatments for HIV can halt the progression of the disease and prevent its spread, but not all persons living with HIV receive effective treatment. The continuum of HIV care (also known as the "HIV care cascade") is a framework that presents different indicators of engagement in HIV care among PLHIV, including linkage to care, retention in care, and viral suppression.
4. Key Populations: This chapter highlights select HIV/AIDS metrics among specific populations of transgender people, young people of color, gay and bisexual men who have sex with men (MSM), non-US-born, people who inject drugs (PWID), and Latinx.
5. Social Determinants of Health and HIV: This chapter describes the associations between the social and structural factors affecting health and HIV. The California Healthy Places Index (HPI) is used to describe the health-related environment across Alameda County census tracts. HIV prevalence and continuum metrics are mapped against HPI percentiles to identify correlations between HIV and neighborhood health factors.

HIV/AIDS

HIV attacks the immune system, weakening it over time such that people living with HIV become increasingly susceptible to opportunistic infections and other medical conditions. The most advanced stage of infection, when the immune system is weakest, is called AIDS. Medical treatments can inhibit HIV's ability to replicate and greatly temper its effect, but the human body cannot clear HIV. HIV is typically transmitted through sex, contaminated needles, or spread from mother to fetus during pregnancy.

Definitions Used in this Report

Stages of HIV Infection

For surveillance purposes, HIV disease progression is classified into 4 stages, from acute infection (Stage 0) to AIDS (Stage 3). In this report, we use "HIV" to refer to HIV disease at any stage (including Stage 3/ AIDS) and AIDS to refer specifically to Stage 3 HIV disease. We use the acronym "PLHIV" to refer to all people living with HIV disease, regardless of stage.

Case Definition

All reported HIV cases must meet the Centers for Disease Control and Prevention (CDC) case definition based on laboratory or clinical criteria.[1] Clinical criteria include a medical provider diagnosis and evidence of HIV treatment, unexplained low CD4 count, or opportunistic infection. The full criteria may be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm.

Transmission Category

For surveillance purposes, each reported HIV case must be classified according to their risk factors for acquiring HIV. Cases with multiple risk factors are assigned a transmission category, the risk factor most likely to have resulted in HIV transmission according to a hierarchy developed by the CDC. In this context, "heterosexual contact" refers to sexual contact with a partner of the opposite sex with a known risk factor for HIV. In some cases, partners' risk factors are unknown, leaving some heterosexual cases without known HIV risk factors. Such cases are assigned to the "unknown" transmission category. The only exception is when a case's sex at birth is female and she reported sex with males, in which case she is presumed to have been infected through heterosexual contact in accordance with CDC-accepted guidance set by the Council of State and Territorial Epidemiologists.[2]

Demographics

Demographic data in this report are based on investigations of medical records. Although the transgender community is highly impacted by HIV, data on current gender identity are not reliably captured in medical records. For this reason, all analyses are presented by sex assigned at birth, for which we use "sex" as shorthand.

Data from racial/ethnic groups in which there were very small numbers were combined for these analyses. Asians and Pacific Islanders are combined into a single category. American Indians, Alaskan Natives, and those identifying with multiple races are combined along with those of unknown race into another group ("Other/Unk"). In tables and charts, the category "Asians and Pacific Islanders" is abbreviated "API" and "African American" is abbreviated "AfrAmer".

Geographic Area

Residential addresses are geocoded to census tract and city/Census-designated place. Region and neighborhood boundaries established by the Alameda County Community Assessment, Planning, and

Evaluation (CAPE) unit based on census tract aggregates are used. These geographic areas are shown in Figures 1.1 and 1.2.

Other Conventions Used

Analyses that are broken out by subgroup (e.g., race/ethnicity) are presented along with the overall group total (e.g., all races) for comparison.

Where rates are presented, they are often accompanied by error bars to convey their degree of statistical variability. These error bars depict 95% confidence intervals (a "margin of error") for the estimates. (In the case of trends, error bands formed by connecting the ends of these margins of error are shown.) Confidence intervals are displayed in select subgroup analyses of indicators. Confidence intervals that do not overlap are considered "statistically significant" and generally represent true differences that are not attributed to chance alone, though it is still possible. Details regarding how these confidence intervals are calculated can be found in the technical notes (see "Calculation of Confidence Intervals" on page 68).

Tables showing breakdowns of populations (e.g., new diagnoses, people living with HIV) for indicators (e.g., diagnosis rates, viral suppression) by demographic or other subgroup are included at the end of each chapter. Note that in each table the length of the orange bar is proportional to the fraction of the total population in that subgroup. Additionally, estimates of each indicator and lines depicting 95% confidence intervals for the estimate are also shown for absolute comparisons between subgroups. Relative comparisons of subgroups (e.g., "Late diagnosis is three times as common in group A as it is in group B") may be made by comparing estimates, when shown. Unreliable estimates are not shown in tables, although their confidence intervals may be. Details on data suppression can be found in the technical notes (see "Data Suppression Rules" on page 69). Lastly, in order to protect privacy, case counts less than five are not presented in this report.

Figure 1.1: Regions of Alameda County

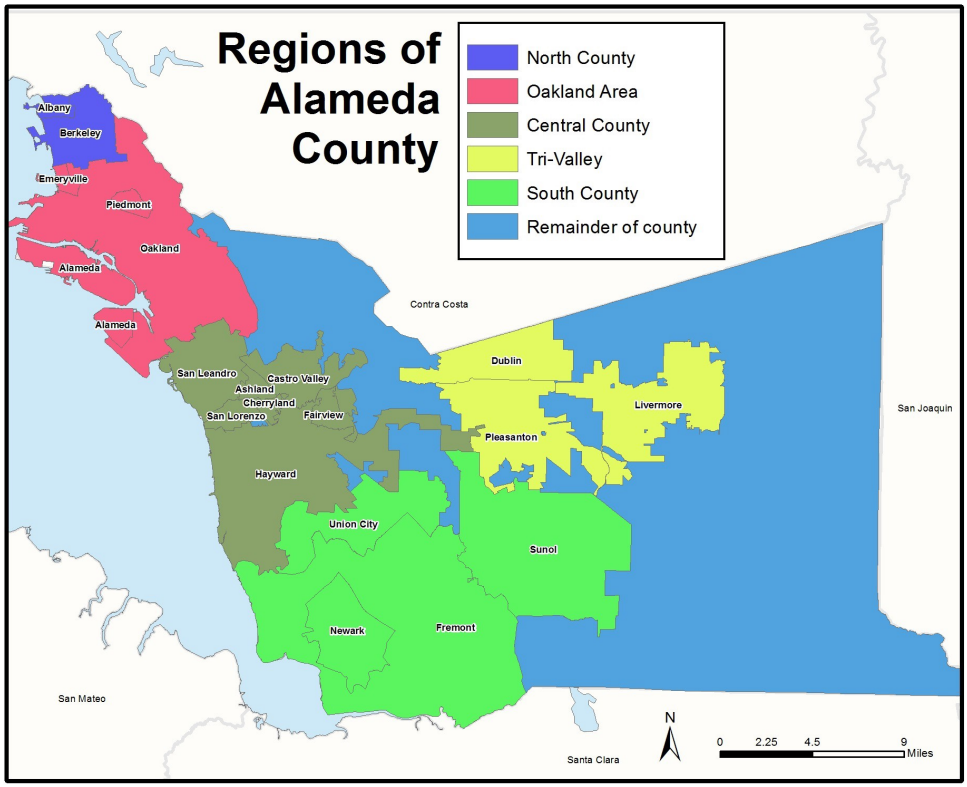
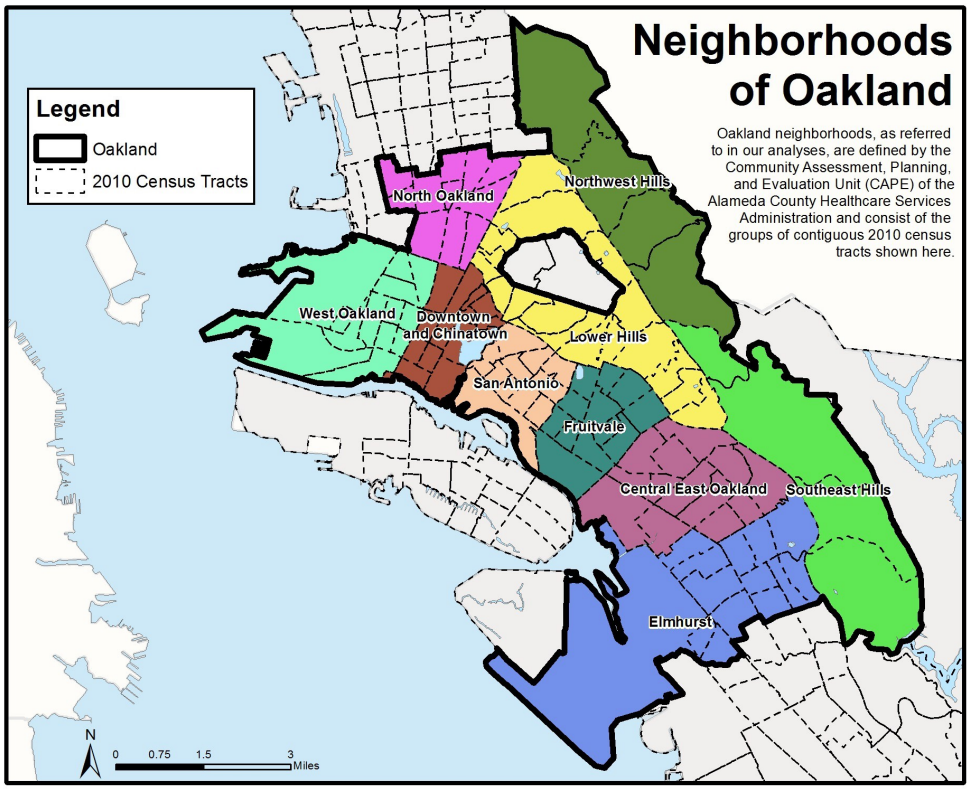
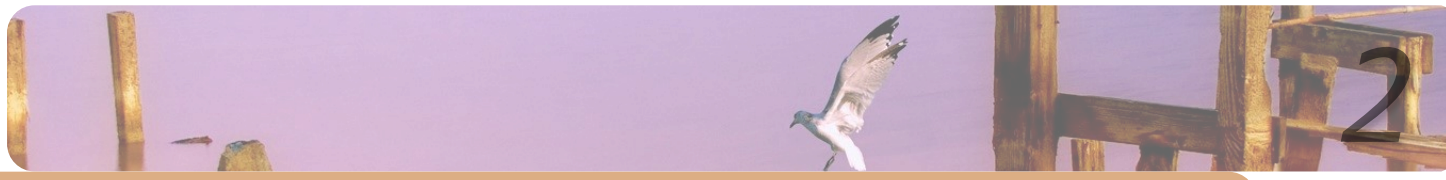


Figure 1.2: Neighborhoods in the City of Oakland





2

New Diagnoses

ACPHD monitors the HIV epidemic through mandated reports of new diagnoses and laboratory results. Estimating the true incidence rate of new HIV transmissions is complex due to the variable time interval between when a person becomes infected and when their infection is diagnosed. However, surveillance data reliably describe all new HIV diagnoses and diagnosis rates. In 2019, there were an estimated 34,800 new diagnoses of HIV infection in the US for an overall diagnosis rate of 12.6 per 100,000 persons. Nationally, rates were highest among males as compared to females (21.0 vs. 4.5 diagnoses per 100,000, respectively), those aged 25 to 34 (30.1 per 100,000), African Americans and Latinx (42.1 and 21.7 per 100,000), and in the South and West (17.6 and 10.9 per 100,000). Gay and bisexual men who have sex with men, including those who inject drugs, accounted for 66% of all new diagnoses and 81% of newly diagnosed males. Heterosexual contact accounted for 83% of newly diagnosed females.[3]

In California, there were an estimated 4,396 new diagnoses for an overall statewide rate of 11.0 diagnoses per 100,000 in 2019.[4] In Alameda County the average annual diagnosis rate calculated over the 3-year period of 2017 to 2019 was 12.7 diagnoses per 100,000.

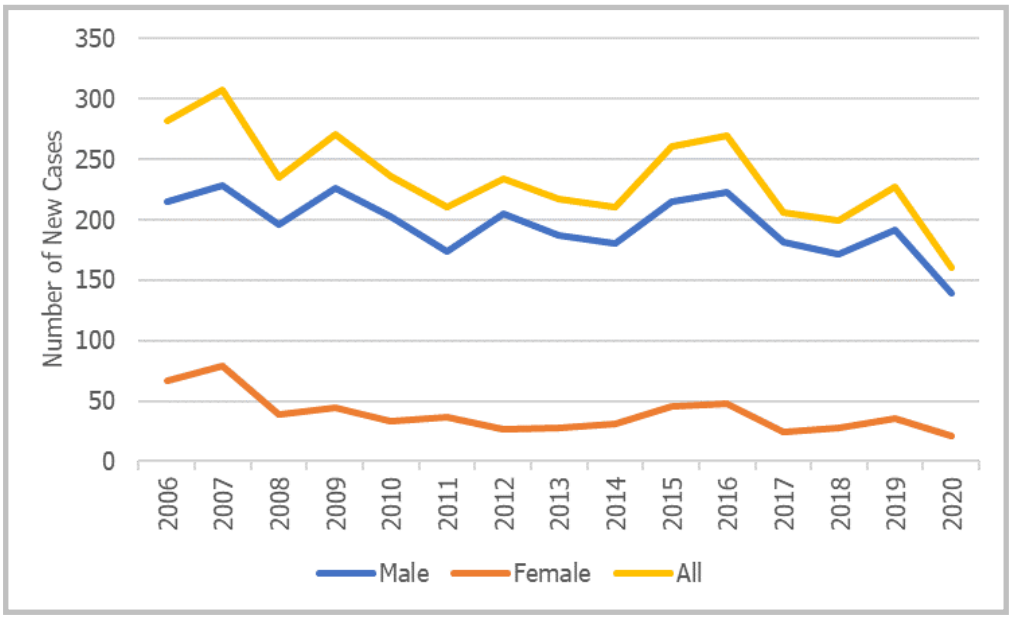
America's HIV Epidemic Analysis Dashboard (AHEAD) displays HIV data and goals for 57 priority areas, including Alameda County. AHEAD tracks national and jurisdictional progress for six Ending the HIV Epidemic (EHE) indicators that aim to reduce new HIV infections in the US by 75% in five years and by 90% in 10 years. According to the dashboard, Alameda County's knowledge of status – estimated percentage of people with HIV who have received an HIV diagnosis – was 87.7% [CI 80.9-95.8] in 2019. PrEP coverage – the estimated percentage of individuals prescribed PrEP among those who need it – was 25.2% in 2019 and preliminary data shows 21.5% for 2020. The goal for knowledge of status is 95% by 2025 and for PrEP coverage, 50% by 2025.[5]

This chapter describes HIV in Alameda County by examining characteristics of new diagnoses, new diagnosis rates, and the timeliness of diagnoses by demographic characteristics. Stratified data on newly diagnosed cases from 2018 to 2020 by sex, age, and race/ethnicity are provided in Tables 2.1 to 2.4 at the end of this chapter.

Characteristics of New Diagnoses

Since HIV became reportable by name in California in 2006, between 200 and 300 new cases of HIV disease have been reported each year among Alameda County residents. In 2020, there were 160 new diagnoses of HIV in the county. The substantial drop in number of newly diagnosed cases in 2020 can be largely attributed to the impact of the COVID-19 pandemic. Seeking medical testing as well as routine testing outreach activities were limited due to shelter-in-place orders and social distancing. It is probable that many new cases of HIV went undiagnosed in 2020. Social restrictions may have also reduced the number of high-risk sexual interactions between casual partners, possibly resulting in fewer transmissions. Additionally, reduced case reporting capability during the pandemic could have contributed to the apparent decline in cases. The data to substantiate the role of these factors is not yet available through routine surveillance methods or other sources.

Figure 2.1: New Diagnosis by Sex and Year, Alameda County, 2006-2020

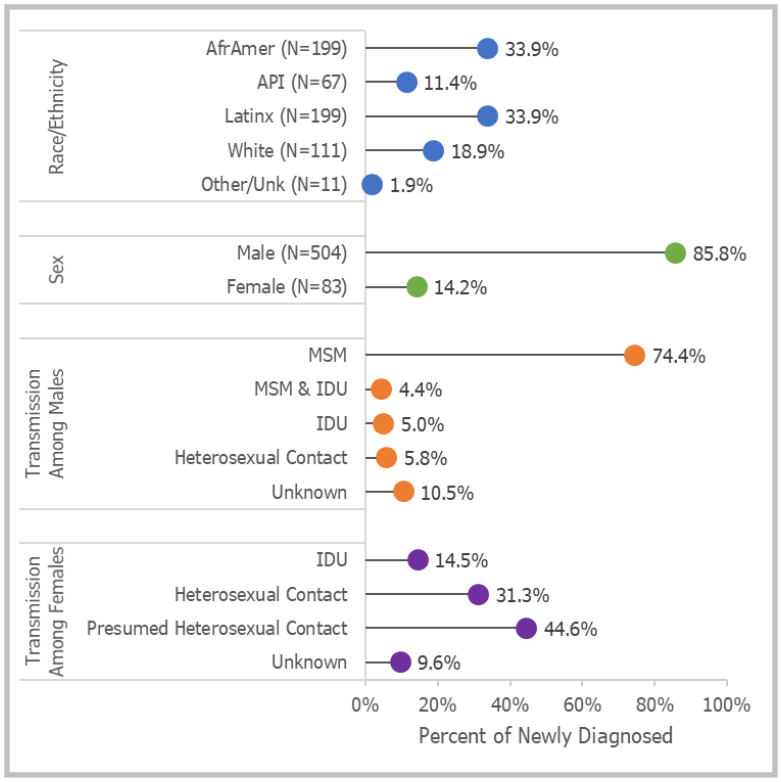


Note: "Sex" here refers to sex assigned at birth

In Alameda County, newly diagnosed HIV cases were overwhelmingly male. The proportion of new diagnoses that were among males increased from 76.2% in 2006 to 86.9% in 2020.

Among the 504 men diagnosed with HIV from 2018 to 2020, the overwhelming majority (74.4%) were MSM. More than three quarters (75.9%) of newly diagnosed women were reported to or presumed to have acquired HIV by heterosexual contact with a partner with known or unknown HIV status; most of the remaining women with a known transmission category were infected through injection drug use (IDU).

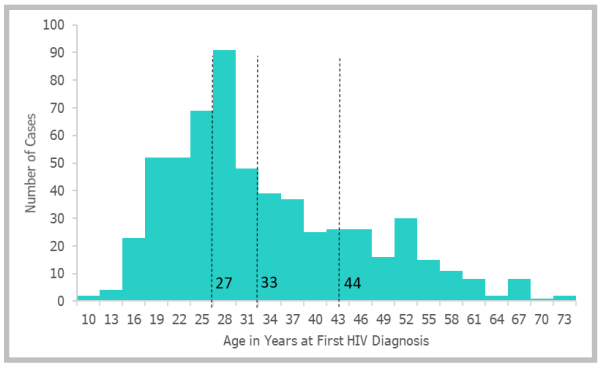
Figure 2.2: Selected Characteristics of New Diagnoses, Alameda County, 2018-2020



Note: "Sex" here refers to sex assigned at birth

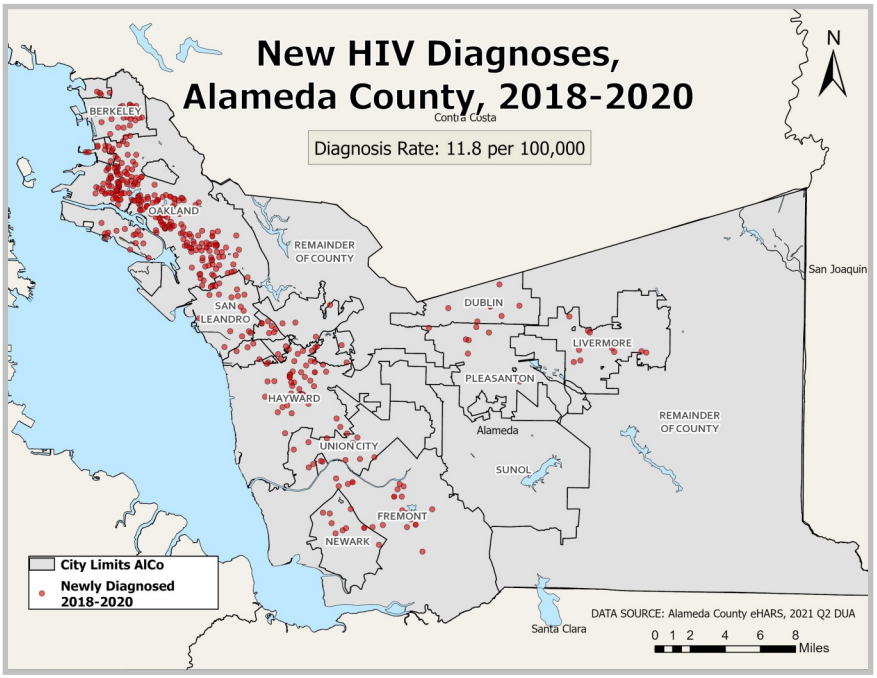
From 2018 to 2020, African Americans and Latinx comprised the largest proportion (33.9% each) of new HIV diagnoses among all racial/ethnic groups. Whites and API made up 18.9% and 11.4%, respectively. The median age among Alameda County residents diagnosed with HIV disease from 2018 to 2020 was 33 years and the mean age was 36.3 years. Most diagnoses were among those in their twenties to forties.

Figure 2.3: Age of New Diagnoses, Alameda County, 2018-2020



Note: The dashed lines indicate the 25th, 50th, and 75th percentile values for age among new diagnoses.

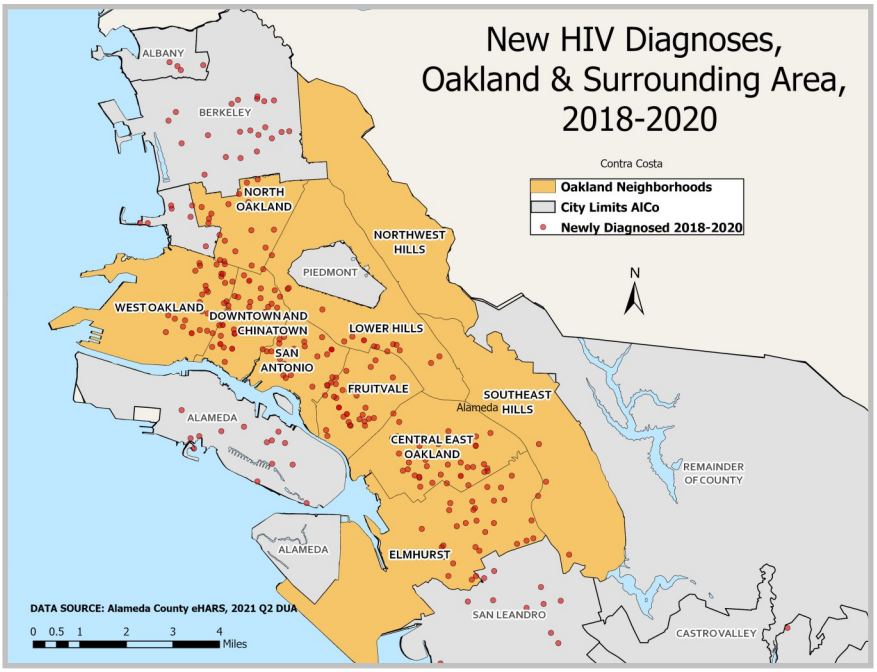
Figure 2.4: Geographic Distribution of New HIV Cases by Residence at HIV Diagnosis, Alameda County, 2018-2020



Notes: 1) N=571.
2) An additional 16 new diagnoses (2.7% of all) were not represented due to incomplete street address.

New diagnoses of HIV were most concentrated in the Oakland area and central county regions (as defined in Figure 1.1 on page 4).

Figure 2.5: Residence at HIV Diagnosis, Oakland, and Surrounding Area, 2018-2020



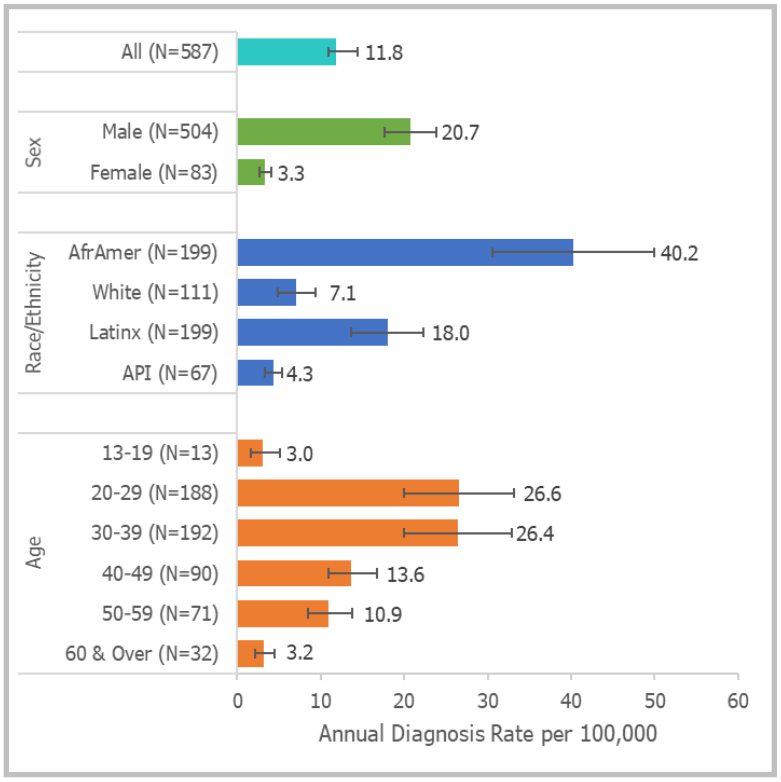
Within Oakland and the surrounding area, new diagnoses were less concentrated in the Oakland hills (Northwest Hills, Southeast Hills, and Lower Hills neighborhoods) than in the rest of the region.

Diagnosis Rates

This section examines trends in HIV diagnosis rates. Diagnosis rates are not equivalent to HIV incidence rates. Trends in diagnosis rates may reflect changes in HIV incidence over time, but may also reflect changes in HIV testing practices. For example, HIV incidence could decrease while HIV diagnosis rates increase if more HIV-unaware persons are tested and diagnosed. Due to the relatively small numbers of diagnoses occurring in Alameda County in any given year, annual diagnosis rates are statistically unstable.

We performed statistical analyses to identify trends that are least likely to reflect random year-to-year HIV variability. Apparent trends do not indicate statistical significance unless specified in the text.

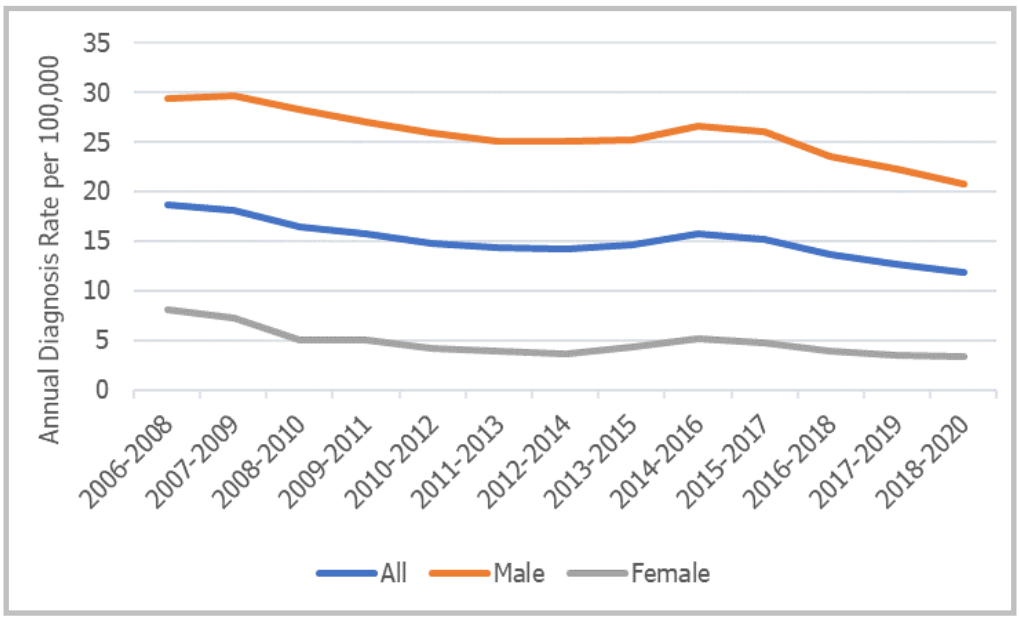
Figure 2.6: Rates of New Diagnoses by Selected Characteristics, Alameda County, 2018-2020



Note: "Sex" here refers to sex assigned at birth

From 2018 to 2020, there were 587 new HIV diagnoses in Alameda County for an average annual rate of 11.8 per 100,000 residents. New diagnosis rates were six times as high among males as among females between 2018 and 2020.

Figure 2.7: Trends in Rates of New Diagnoses by Sex, Alameda County, 2006-2020

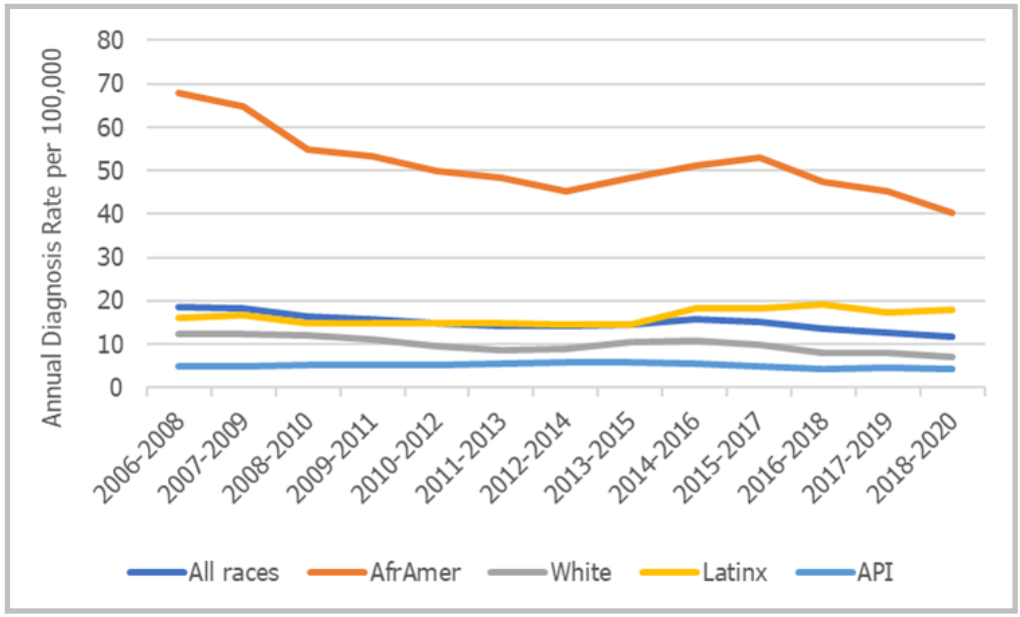


Note: "Sex" here refers to sex assigned at birth.

New diagnosis rates declined steadily and significantly between 2006 and 2020, decreasing by an average of 3.2% annually overall and 2.6% annually among males. In contrast, the same period, rates among females dropped significantly by 6.4% annually. Rates were consistently higher in men between 2006 and 2020.

From 2018 to 2020, the highest diagnosis rate was among African Americans, which was more than twice as high as the second most impacted group—Latinx. The lowest diagnosis rate was seen among API.

Figure 2.8: Trends in Rates of New Diagnoses by Race/Ethnicity, Alameda County, 2006-2020

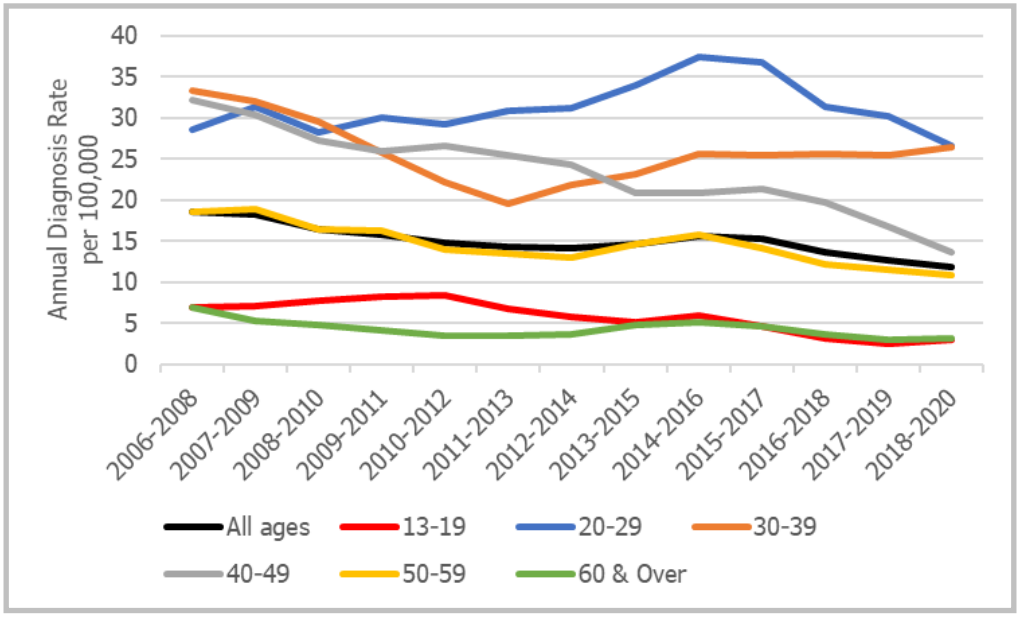


Diagnosis rates have been relatively constant since 2006 in most racial/ethnic groups. However, the average annual decline in diagnosis rate was statistically significant among African Americans (3.7%) and whites (4.0%). The overall decline in the diagnosis rate in the county since 2006 was driven largely by decreases in diagnoses among African Americans—particularly African American women—amongst whom rates decreased by 7.2% per year on average. While there were 42.1 new diagnoses per 100,000 African American women from 2006 to 2008, that rate declined to 14.5 new diagnoses per 100,000 from 2018 to 2020. Rates also declined among Latinx women by an average of 3.8% per year.

Among all males, the only significant trends were declines in diagnosis rates among African Americans and whites (2.5% and 4.6%, respectively per year on average).

From 2018 to 2020, new HIV diagnoses were most common among those in their twenties, thirties, and forties, with 26.6, 26.4, and 13.6 diagnoses per 100,000, respectively. New HIV diagnoses were somewhat less common among those in their fifties and least common among those at the extremes of the age spectrum (i.e., teens and those aged 60 and over).

Figure 2.9: Trends in Rates of New Diagnoses by Age, Alameda County, 2006-2020



By age, diagnosis rates have decreased significantly from 2006 to 2020 at an average rate of 6.1% per year among those 40 to 49 and 4.5% per year among those 50 and older. While the rate among those 20 to 29 has increased and among those 30 to 39 has decreased since 2006, these were not statistically significant trends.

Among African Americans, there were significant declines in diagnosis rates between 2006 and 2020 in several age groups. There was an average annual decline of 3.2% among those aged 30 to 39 years, 7.4% among those 40 to 49 years, and 4.2% among those 50 to 59 years. Whites aged 40 to 49 years old saw an average annual decline of 6.9% while those 60 and older saw a decline of 5.4%. Among Latinx, there was an 7.1% decline among those aged 13 to 19 years. There were not statistically significant trends among API by age.

Stratified diagnosis rates by sex, age and race/ethnicity are provided in tables at the end of this chapter (Table 2.1 to 2.4 on pages 14 to 17). The disparity in diagnosis rates between African Americans and whites was roughly the same among females as males from 2018 to 2020: African American males had 5.8 times the diagnosis rates as white males and African American females had 6.0 times the diagnosis rates of white females (Table 2.3 on page 16).

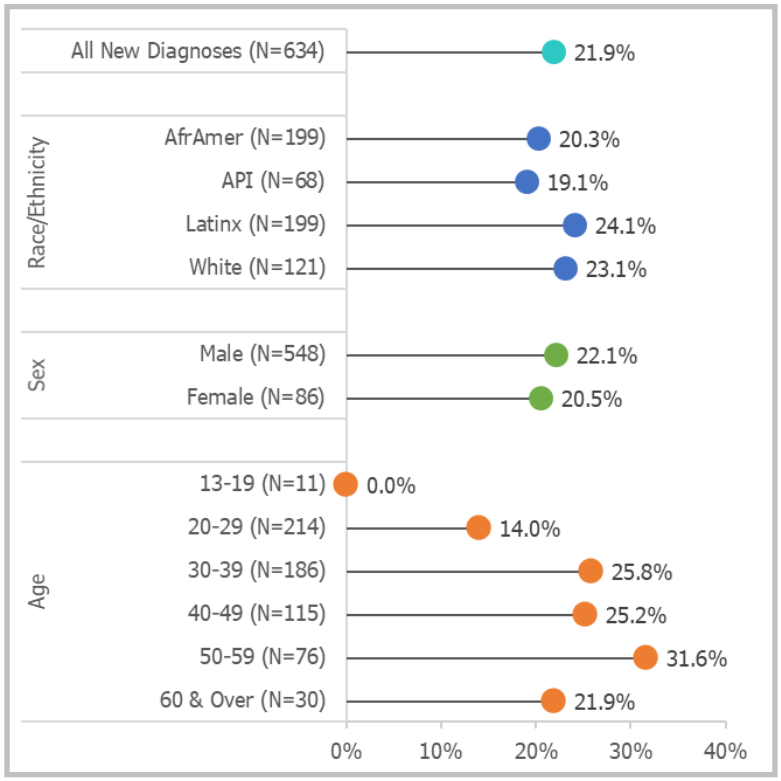
Timeliness of Diagnosis

Diagnosis of HIV early in the course of infection is an important component of effective HIV prevention and treatment as early intervention generally reduces both the risk of transmission to others and the impact of HIV infection on a person's health.

Late Diagnosis

A key indicator of late HIV diagnosis is the time to progression to AIDS (stage 3 HIV infection). A diagnosis is deemed late if AIDS is diagnosed at the same time as a person's initial HIV diagnosis or if the person progresses to AIDS within one year of the initial HIV diagnosis. The analyses presented in this section are for the years 2017 to 2019 to allow a full year of follow-up from initial HIV diagnosis. Stratified analyses of late diagnosis by sex, age, and race/ethnicity are provided in tables at the end of this chapter. Apparent differences should be interpreted with caution due to the small numbers of diagnoses seen in some subgroups, resulting in statistical instability.

Figure 2.10 Selected Characteristics of Late Diagnoses, Alameda County, 2017-2019



Note: "Sex" here refers to sex assigned at birth

In Alameda County, 21.9% of new diagnoses between 2017 and 2019 were late. African Americans and API had the lowest rates and Latinx had the highest; however, differences by race/ethnicity were not statistically significant. There was no significant difference in late diagnosis by sex.

The proportion of late diagnoses generally increased with age; almost a third of HIV diagnoses among those aged 50 to 59 were late. Late diagnosis was less common among those aged 20 to 29; 1 in 7 were diagnosed late in this age group. The increase in rate of late diagnosis with increasing age was statistically significant.

Table 2.1: New HIV Diagnoses, Alameda County, 2018-2020

Characteristic	Category	Average Annual Count	Percent	Average Annual Diagnosis Rate per 100,000	95% Confidence Interval
All diagnosis		195.7	100.0%	11.8	10.2-13.5
Sex[a]	Male	168.0	85.8%	20.7	17.6-23.8
	Female	27.7	14.2%	3.3	2.6-4.1
Race/Ethnicity[b]	AfrAmer	66.3	33.9%	40.2	30.5-49.9
	White	37.0	18.9%	7.1	4.8-9.4
	Latinx	66.3	33.9%	18.0	13.6-22.3
	API	22.3	11.4%	4.3	3.3-5.4
	Other/Unk	*	*	*	*
Age (years)[c]	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	62.7	32.0%	26.6	20.0-33.2
	30-39	64.0	32.7%	26.4	19.9-32.8
	40-49	30.0	15.3%	13.6	10.9-16.7
	50-59	23.7	12.1%	10.9	8.5-13.7
	60 & older	10.7	5.5%	3.2	2.2-4.5
Residence	North County	10.0	5.1%	7.2	4.8-10.2
	Oakland Area	111.0	56.7%	21.3	17.3-25.2
	Central County	39.7	20.3%	10.2	7.0-13.4
	South County	20.3	10.4%	5.7	4.4-7.3
	Tri-Valley	14.0	7.2%	5.9	4.3-8.0
	Remainder of county	*	*	*	*
	Unknown	*	*	-	-

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[c] Age at diagnosis

[*] Some cells suppressed to protect confidentiality

[-] Rate not calculable for lack of a denominator

Table 2.2: HIV Diagnosis Rates by Sex and Age, Alameda County, 2018-2020

Sex[a]	Age	Average Annual Count	Percent	Average Annual Diagnosis Rate per 100,000	95% Confidence Interval
All	All ages	195.7	100.0%	11.8	10.2 - 13.5
	0-4	*	*	*	*
	5-12	*	*	*	*
	13-19	4.4	2.2%	3.0	1.6 - 5.1
	20-24	28.6	14.6%	25.6	20.4 - 31.6
	25-29	34.0	17.4%	27.6	18.3 - 36.9
	30-39	64.0	32.7%	26.4	19.9 - 32.8
	40-49	30.0	15.3%	13.6	10.9 - 16.7
	50 & older	34.4	17.6%	6.2	4.1 - 8.3
Male	All ages	167.9	85.8%	20.7	17.6 - 23.8
	0-4	*	*	*	*
	5-12	*	*	*	*
	13-19	3.7	1.9%	5.0	2.5 - 8.9
	20-24	24.3	12.4%	42.8	33.6 - 53.8
	25-29	31.3	16.0%	50.5	40.8 - 61.8
	30-39	57.3	29.3%	47.5	35.2 - 59.9
	40-49	24.3	12.4%	22.5	17.6 - 28.3
	50 & older	26.7	13.6%	10.3	8.2 - 12.9
Female	All ages	27.8	14.2%	3.3	2.6 - 4.1
	0-4	*	*	*	*
	5-12	*	*	*	*
	13-19	0.7	0.4%	0.9	0.1 - 3.4
	20-24	4.3	2.2%	7.8	4.2 - 13.4
	25-29	2.7	1.4%	4.4	1.9 - 8.6
	30-39	6.7	3.4%	5.5	3.3 - 8.4
	40-49	5.7	2.9%	5.0	2.9 - 8.1
	50 & older	7.7	3.9%	2.6	1.7 - 3.9

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 2.3: HIV Diagnosis Rates by Sex and Race/Ethnicity, Alameda County, 2018-2020

Sex[a]	Race/Ethnicity[b]	Average Annual Count	Percent	Average Annual Diagnosis Rate per 100,000	95% Confidence Interval
All	All races	195.7	100.0%	11.8	10.2 - 13.5
	AfrAmer	66.4	33.9%	40.2	30.5 - 49.9
	White	37.0	18.9%	7.1	4.8 - 9.4
	Latinx	66.3	33.9%	18.0	13.6 - 22.3
	API	22.4	11.4%	4.3	3.3 - 5.4
	Other/Unk	3.7	1.9%	-	-
Male	All races	168.1	85.9%	20.7	17.6 - 23.8
	AfrAmer	53.7	27.4%	69.4	50.8 - 87.9
	White	30.7	15.7%	11.9	9.6 - 14.6
	Latinx	61.0	31.2%	32.5	24.3 - 40.6
	API	19.7	10.1%	7.9	6.0 - 10.2
	Other/Unk	3.0	1.5%	7.8	3.6 - 14.8
Female	All races	27.7	14.1%	3.3	2.6 - 4.1
	AfrAmer	12.7	6.5%	14.5	10.2 - 19.9
	White	6.3	3.2%	2.4	1.5 - 3.8
	Latinx	5.3	2.7%	2.9	1.7 - 4.8
	API	*	*	*	*
	Other/Unk	*	*	*	*

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[-] Rate not calculable for lack of a denominator

Table 2.4: HIV Diagnosis Rates by Race/Ethnicity and Age, Alameda County, 2018-2020

Race/Ethnicity[a]	Age	Average Annual Count	Percent	Average Annual Diagnosis Rate per 100,000	95% Confidence Interval
All races	All ages	195.7	100.0%	11.8	10.2 - 13.5
	0-4	*	*	*	*
	5-12	*	*	*	*
	13-19	4.3	2.2%	3.0	1.6 - 5.1
	20-24	28.7	14.7%	25.6	20.4 - 31.6
	25-29	34.1	17.4%	27.6	18.3 - 36.9
	30-39	64.1	32.7%	26.4	19.9 - 32.8
	40-49	30.0	15.3%	13.6	10.9 - 16.7
	50 & older	34.3	17.5%	6.2	4.1 - 8.3
AfrAmer	All ages	66.3	33.9%	40.2	30.5 - 49.9
	0-4	*	*	*	*
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	9.0	4.6%	85.0	56.0 - 123.7
	25-29	12.7	6.5%	118.1	83.6 - 162.2
	30-39	20.3	10.4%	95.5	73.1 - 122.7
	40-49	9.0	4.6%	39.3	25.9 - 57.2
	50 & older	13.3	6.8%	22.4	16.0 - 30.5
White	All ages	37.1	18.9%	7.1	4.8 - 9.4
	0-4	*	*	**	**
	5-12	*	*	**	**
	13-19	*	*	**	**
	20-24	4.7	2.4%	16.1	8.8 - 27.1
	25-29	4.7	2.4%	13.9	7.6 - 23.4
	30-39	8.7	4.4%	13.7	9.0 - 20.1
	40-49	8.3	4.2%	11.9	7.7 - 17.5
	50 & older	10.7	5.5%	4.5	3.1 - 6.3
Latinx	All ages	66.4	33.9%	18.0	13.6 - 22.3
	0-4	*	*	*	*
	5-12	*	*	**	**
	13-19	*	*	*	*
	20-24	12.0	6.1%	38.9	27.2 - 53.9
	25-29	11.7	6.0%	33.6	23.4 - 46.8
	30-39	25.7	13.1%	40.1	31.6 - 50.1
	40-49	10.7	5.5%	23.4	16.0 - 33.1
	50 & older	5.0	2.6%	7.4	4.2 - 12.3
API	All ages	22.3	11.4%	4.3	3.3 - 5.4
	0-4	*	*	**	**
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	*	*	*	*
	25-29	4.7	2.4%	12.3	6.7 - 20.6
	30-39	7.7	3.9%	9.1	5.8 - 13.7
	40-49	1.3	0.7%	*	*
	50 & older	5.3	2.7%	3.1	1.8 - 5.1
Other/Unk	All ages	3.7	1.9%	-	-
	0-4	*	*	-	-
	5-12	*	*	-	-
	13-19	*	*	-	-
	20-24	*	*	-	-
	25-29	*	*	-	-
	30-39	*	*	-	-
	40-49	*	*	-	-
	50 & older	*	*	-	-

Source: Alameda County eHARS, 2021 Q2

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

[-] Rate not calculable for lack of a denominator

Table 2.5: Late Diagnosis by Sex and Age, Alameda County, 2017-2019

Sex[a]	Age at Diagnosis	New Diagnoses		Late Diagnoses	
		Average Annual Count	Column Percent	Average Annual Count	Row Percent
All	All ages	211.2	100.0%	46.4	22.0%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	30.3	14.3%	4.3	14.2%
	25-29	41.0	19.4%	5.7	13.9%
	30-39	62.0	29.4%	16.0	25.8%
	40-49	38.4	18.2%	9.7	25.3%
	50 & older	35.3	16.7%	10.7	30.3%
Male	All ages	182.6	86.5%	40.4	22.1%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	26.0	12.3%	4.0	15.4%
	25-29	37.3	17.7%	5.0	13.4%
	30-39	56.7	26.8%	14.7	25.9%
	40-49	30.7	14.5%	8.0	26.1%
	50 & older	28.3	13.4%	8.7	30.7%
Female	All ages	28.6	13.5%	6.0	21.0%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	4.3	2.0%	0.3	7.0%
	25-29	3.7	1.8%	0.7	18.9%
	30-39	5.3	2.5%	1.3	24.5%
	40-49	7.7	3.6%	1.7	22.1%
	50 & older	7.0	3.3%	2.0	28.6%

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 2.6: Late Diagnosis by Sex and Race/Ethnicity, Alameda County, 2017-2019

Sex[a]	Race/Ethnicity[b]	New Diagnoses		Late Diagnoses	
		Average Annual Count	Column Percent	Average Annual Count	Row Percent
All	All races	211.4	100.0%	46.3	21.9%
	AfrAmer	77.0	36.4%	15.7	20.4%
	White	40.4	19.1%	9.3	23.0%
	Latinx	66.4	31.4%	16.0	24.1%
	API	22.6	10.7%	4.3	19.0%
	Other/Unk	5.0	2.4%	1.0	20.0%
Male	All races	182.7	86.4%	40.2	22.0%
	AfrAmer	61.7	29.2%	13.0	21.1%
	White	34.7	16.4%	8.3	23.9%
	Latinx	61.7	29.2%	14.3	23.2%
	API	20.3	9.6%	4.3	21.2%
	Other/Unk	4.3	2.0%	0.3	7.0%
Female	All races	28.7	13.6%	6.1	21.3%
	AfrAmer	15.3	7.2%	2.7	17.6%
	White	5.7	2.7%	1.0	17.5%
	Latinx	4.7	2.2%	1.7	36.2%
	API	*	*	*	*
	Other/Unk	*	*	*	*

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 2.7: Late Diagnosis by Race/Ethnicity and Age, Alameda County, 2017-2019

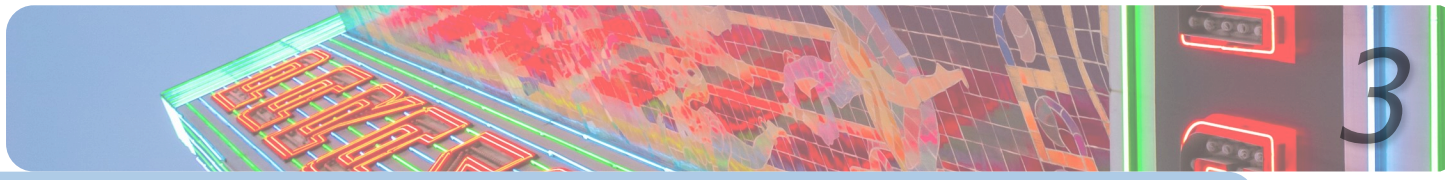
Race/Ethnicity[a]	Age at Diagnosis	New Diagnoses		Late Diagnoses	
		Average Annual Count	Column Percent	Average Annual Count	Row Percent
All Races	All ages	211.4	100.0%	46.4	21.9%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	30.4	14.4%	4.3	14.1%
	25-29	41.0	19.4%	5.7	13.9%
	30-39	62.0	29.3%	16.0	25.8%
	40-49	38.4	18.2%	9.7	25.3%
	50 & older	35.3	16.7%	10.7	30.3%
AfrAmer	All ages	77.0	36.4%	15.7	20.4%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	11.0	5.2%	2.0	18.2%
	25-29	17.0	8.0%	2.0	11.8%
	30-39	18.7	8.8%	3.3	17.6%
	40-49	12.3	5.8%	3.7	30.1%
	50 & older	16.0	7.6%	4.7	29.4%
White	All ages	40.4	19.1%	9.3	23.0%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	3.7	1.8%	0.3	8.1%
	25-29	5.7	2.7%	0.7	12.3%
	30-39	11.3	5.3%	3.3	29.2%
	40-49	8.7	4.1%	3.0	34.5%
	50 & older	11.0	5.2%	2.0	18.2%
Latinx	All ages	66.3	31.4%	16.1	24.3%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	12.0	5.7%	2.0	16.7%
	25-29	13.3	6.3%	1.7	12.8%
	30-39	23.0	10.9%	6.7	29.1%
	40-49	12.7	6.0%	2.7	21.3%
	50 & older	4.3	2.0%	3.0	69.8%
API	All ages	22.7	10.7%	4.3	18.9%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	2.7	1.30%	0.0	0.0%
	25-29	3.7	1.8%	1.3	35.1%
	30-39	7.3	3.5%	2.0	27.4%
	40-49	3.7	1.8%	0.0	0.0%
	50 & older	4.0	1.9%	1.0	25.0%
Other/Unk	All ages	5.0	2.4%	1.0	20.0%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	*	*	*	*
	25-29	*	*	*	*
	30-39	*	*	*	*
	40-49	*	*	*	*
	50 & older	*	*	*	*

Source: Alameda County eHARS, 2021 Q2

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown



3 People Living with HIV

In the United States, there were an estimated 1,189,700 persons aged 13 years or older living with diagnosed HIV at the end of 2019. Prevalence was highest among men (685.9 per 100,000), those aged 45 to 54 (709.4 per 100,000), African Americans and Latinx (1,411.4 and 625.8 per 100,000 respectively), and in the Northeast and South (530.5 and 524.4 per 100,000 respectively).[3] At year-end 2019, California had an estimated 137,785 PLHIV for a statewide prevalence of 344.8 per 100,000 population. HIV prevalence among women in California (80.3 per 100,000) was less than half that of women nationally.[4] At year-end 2019 in Alameda County, the prevalence of HIV was 380.6 per 100,000 residents.

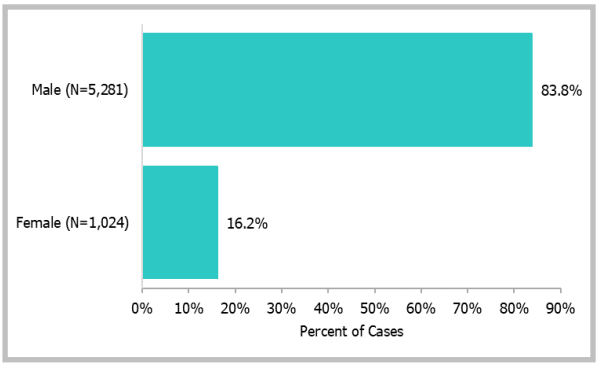
This chapter examines prevalence, or the proportion of people with HIV infection living in Alameda County, reflecting the overall burden of HIV in the population. Data presented do not include PLHIV with undiagnosed infection but include all those with diagnosed HIV (including newly diagnosed), regardless of the stage of HIV infection. First, characteristics of PLHIV in the county are presented. Then, the prevalence of HIV disease in different subpopulations is described. Finally, mortality (deaths) among PLHIV ever diagnosed with AIDS is described. Table 3.1 summarizes data presented in this chapter. Stratified prevalence rates by sex, age and race/ethnicity are provided in Tables 3.2 to 3.4 at the end of this chapter.

Characteristics of PLHIV

At the end of 2020, there were an estimated 6,305 PLHIV in Alameda County.

As with the distribution by sex among new diagnoses of HIV, PLHIV in Alameda County at year-end 2020 were predominantly male (83.8%).

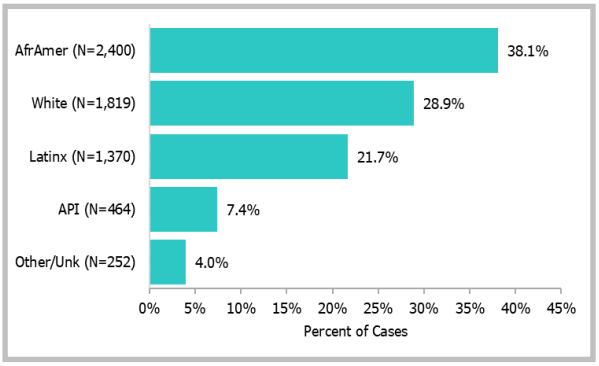
Figure 3.1: PLHIV by Sex, Alameda County, Year-End 2020



Note: "Sex" refers to sex assigned at birth.

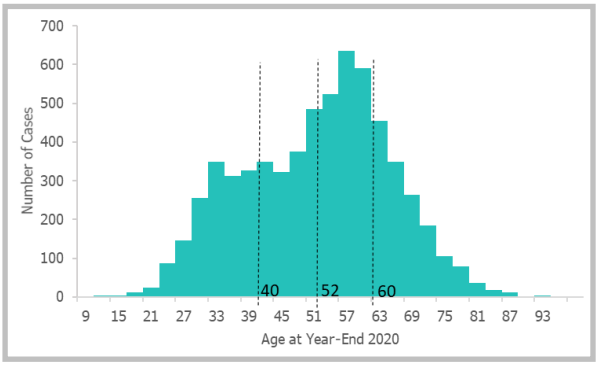
PLHIV in Alameda County were predominantly African American (38.1%) or white (28.9%). Latinx and API each comprised a smaller proportion of PLHIV. Racial/ethnic disparities among PLHIV were more apparent among women compared to men (Table 3.4). Among men there was a similar number of PLHIV who were African American and white; however, among women there were three and a half times as many PLHIV who were African American compared to those who were white.

Figure 3.2: PLHIV by Race/Ethnicity, Alameda County, Year-End 2020



Over half of PLHIV were in their fifties or older. Only about a quarter were in their thirties or younger at year-end 2020.

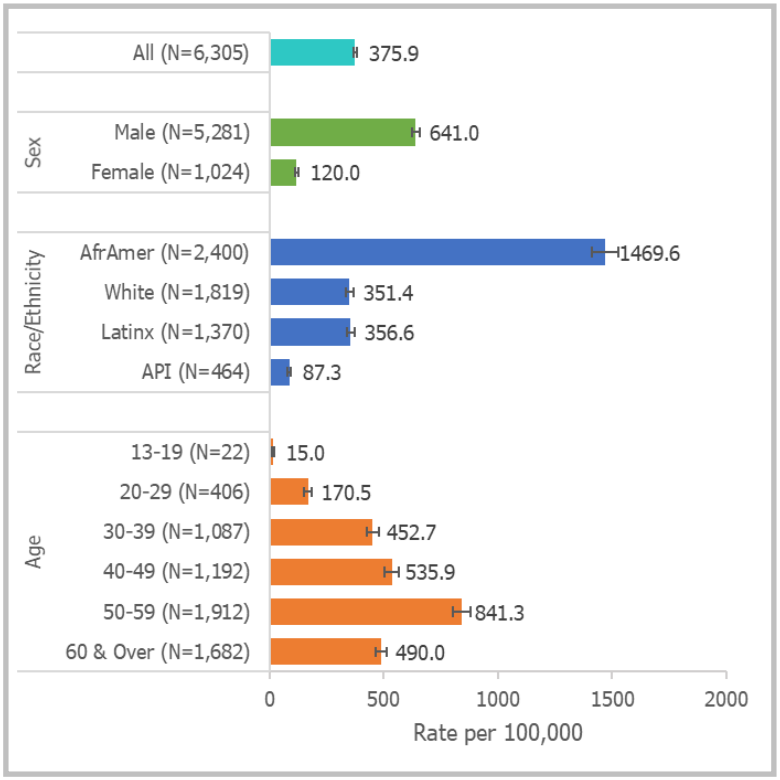
Figure 3.3: Age of PLHIV, Alameda County, Year-End 2020



Prevalence Rates

At the end of 2020 there were 6,305 people living with HIV in Alameda County for a prevalence rate of 375.9 per 100,000 or 0.4% of residents.

Figure 3.4: Prevalence of HIV by Selected Characteristics, Alameda County, Year-End 2020



Note: "Sex" here refers to sex assigned at birth

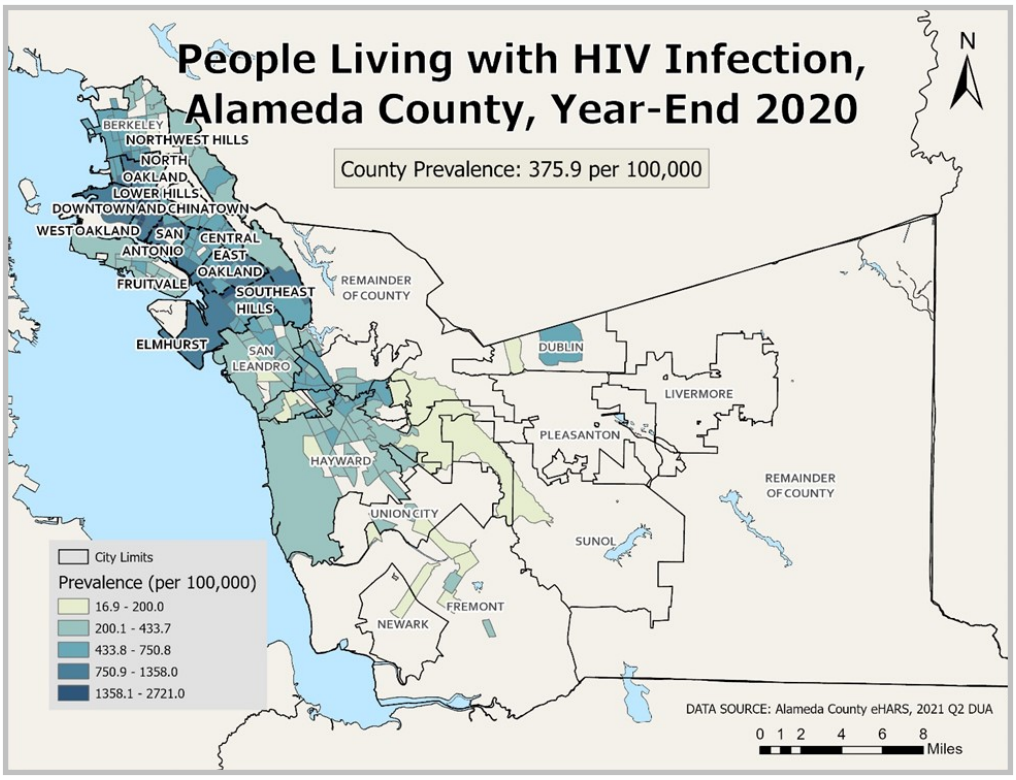
HIV prevalence was more than five times higher among males than females at year-end 2020.

African Americans had a four times higher burden of HIV prevalence compared to the next most impacted racial group, Latinx. Prevalence was lowest among API.

HIV prevalence was higher in each successive age group, ranging from 15.0 per 100,000 youth aged 13 to 19 to a high of 841.3 per 100,000 people aged 50 to 59 years. The number of children aged 0 to 12 living with HIV was too low to estimate a statistically reliable prevalence rate. Prevalence among those aged 60 and over differed only slightly from those in their thirties. Increasing prevalence of HIV with age is consistent with the greatly improved survival of PLHIV in the post-ART era.

Disparities in prevalence rates by race/ethnicity were more pronounced among females than males. While prevalence was more than three times higher among African American males compared to white males, it was 10 times higher among African American females compared to white females (Table 3.4). Additionally, although HIV prevalence was higher among white males compared to Latinx males, prevalence was lower among white females compared to Latinx females.

Figure 3.5: Prevalence of HIV by Census Tract of Residence, Alameda County, Year-End 2020



The city of Emeryville had the highest HIV prevalence within Alameda County, followed by Oakland, Ashland, and Fairview. Among the Oakland neighborhoods, West Oakland, Downtown, and Chinatown had the highest HIV prevalence, ranging between 1 to 2% of residents.

Figure 3.6: Prevalence of HIV by Census Tract of Residence, Oakland and Surrounding Area, Year-End 2020

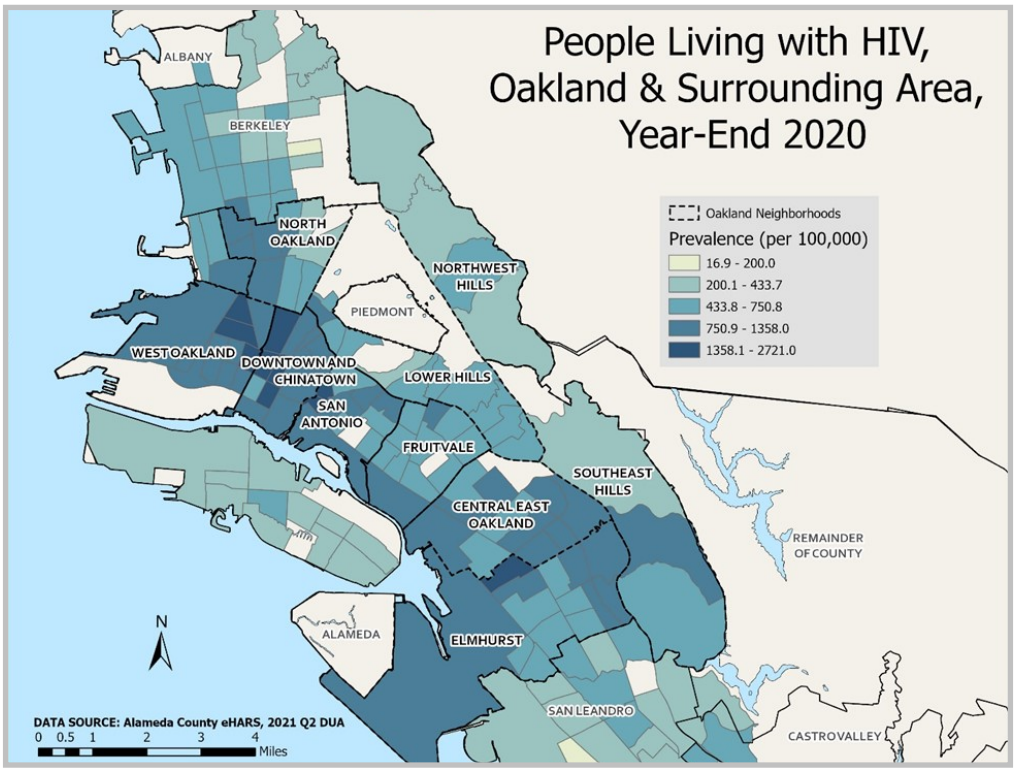
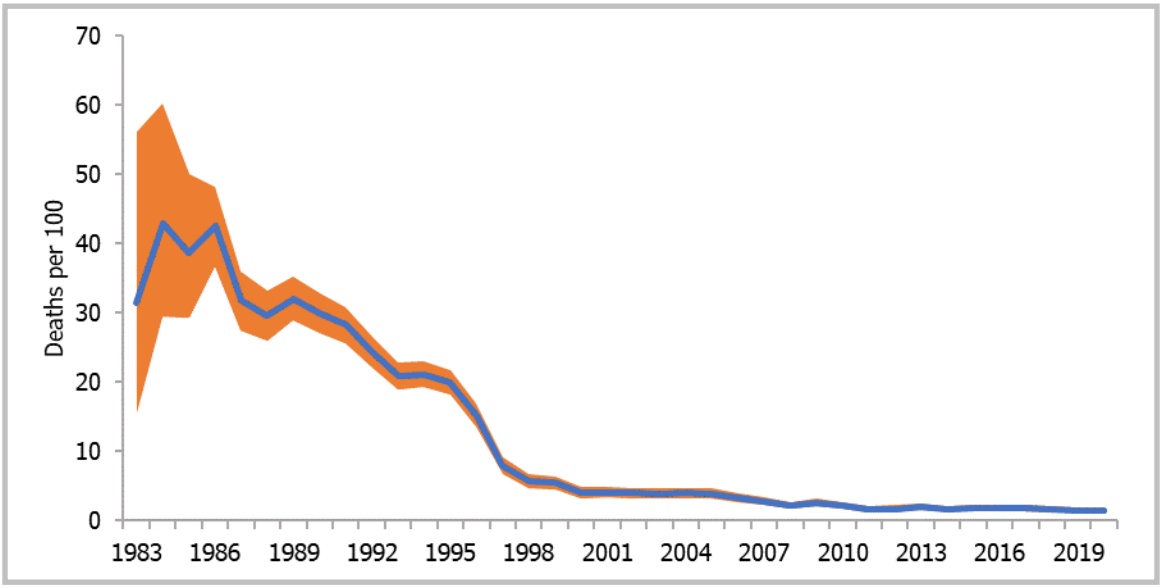


Figure 3.7: Death Rate Among Alameda County Residents Ever Diagnosed with AIDS, 1985-2020



Note: Death rates calculated among persons ever diagnosed with AIDS while a resident of Alameda County, regardless of county of residence at death. Deaths in PLHIV without AIDS are not reported here.

Deaths Among Alameda County Residents Ever Diagnosed with AIDS

Although HIV infection without AIDS has been reportable by name in California only since 2006, AIDS has been a reportable disease since the early 1980s, allowing examination of long-term trends in death rates among the subset of PLHIV ever diagnosed with AIDS. In 1985, there were 38.7 deaths (from any cause, whether HIV-related or not) per 100 Alameda County residents ever diagnosed with AIDS. This rate dropped to 7.5 deaths per 100 by 1997 and has declined slowly but steadily since then. In 2020, there were 61 deaths among the 3,756 residents living with AIDS for a rate of 1.4 deaths per 100 residents living with AIDS.

HIV-COVID Coinfection

The World Health Organization (WHO) declared COVID-19 a global pandemic on March 11, 2021. SARS-CoV-2 is the infectious agent responsible for COVID-19 disease, causing fever, shortness of breath, pneumonia, loss of taste or smell, and in some – no symptoms at all.[6] By the end of 2020, the international death toll attributed to COVID-19 had reached 1.8 million people, although this figure is likely an underestimate.[7] In response, the CDC and many other public health entities issued guidelines on risk factors and comorbidities, among which included old age, existing respiratory conditions such as asthma, obesity, HIV, and many more.[8]

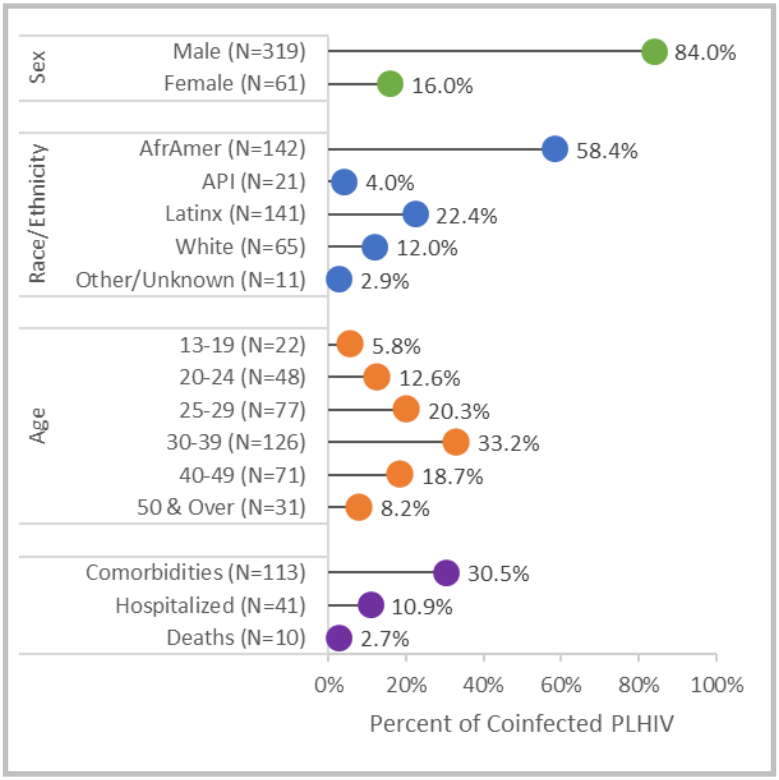
It is theorized that PLHIV have elevated risk for COVID-19, particularly those who are virally unsuppressed or have low CD4 counts. In addition, PLHIV may be more likely to have preexisting conditions associated with HIV that can exacerbate COVID-19 if coinfected, leading to more severe outcomes than among the general population.

Beginning March 2020 in California, the public had been advised to shelter in place whenever possible, socially distance from others, and avoid going outside for nonessential reasons. However, the ability to perform these protective actions depended on having stable housing, food security, and jobs that could be transitioned to remote work, meaning the negative ramifications of lockdown impacted some populations harder than more privileged counterparts. Among the most disadvantaged are people at risk for contracting HIV such as sex workers, people who inject drugs, and people with other autoimmune diseases.[9] For physiologic and social reasons, COVID-19 critically impacted – and continues to impact – the HIV community.

The National COVID Cohort Collaborative followed 509,092 cases of COVID-19 in the U.S. between January 1, 2020 to February 6, 2021 and found PLHIV had 32% greater risk for hospital admission due to COVID-19 and 86% greater risk for requiring mechanical ventilation.[10] Another U.S. study matched COVID-19 hospital admissions among PLHIV and non-PLHIV by sex, race, body mass, and underlying conditions, found that PLHIV were 70% more likely to require inpatient care.[11] Locally, San Francisco published results of their study on COVID-19 outcomes among PLHIV over the period March 24, 2020 to September 3, 2020. Among the coinfected population in San Francisco, the mean age was 48 years, 38.9% were white, 38.3% Latinx, 11.9% Black, and 6.7% Asian. Over 91% were men, 6.2% women, and 2.6% transgender.[12]

In Alameda County HIV COVID-19 coinfection was determined by matching HIV and COVID-19 surveillance data using probabilistic and deterministic methods. A description of data sources and methods is provided on page 68 of Appendix A.

Figure 3.8: Selected Characteristics of PLHIV Coinfected with COVID-19, Alameda County, July 2021



Notes: 1) "Sex" refers to sex assigned at birth.
2) "Comorbidities" includes Diabetes, Cardiovascular disease, Hypertension, Asthma, Chronic lung disease, Chronic kidney disease, Chronic liver disease, Stroke, Neurologic/ neurodevelopmental, Cancer, Immuno-compromised, Obesity, Current smoker, Former smoker, Current e-cig/vape use, Other.

As of July 2021, there were 380 PLHIV who had been coinfected with COVID-19 in Alameda County. Eighty-four percent were male and 16% were female. African Americans (58.4%) were most impacted, followed by Latinx (22.4%), and whites (12%). One third of PLHIV who developed COVID-19 were in their thirties, followed by 20.3% in their twenties, and 18.7% in their forties. Just less than one third of this group reported comorbidities, including but not limited to diabetes, cardiovascular disease, hypertension, and asthma (see Figure 3.8 note), 10.9% were hospitalized for COVID-19, and 2.7% died due to COVID-19.

The vast majority of PLHIV who developed COVID-19 reported living in the Oakland area (64.6%), followed by Central County (21.4%), and South County (8.4%).

Figure 3.9: COVID-19 Cases Among PLHIV, Alameda County, 2020

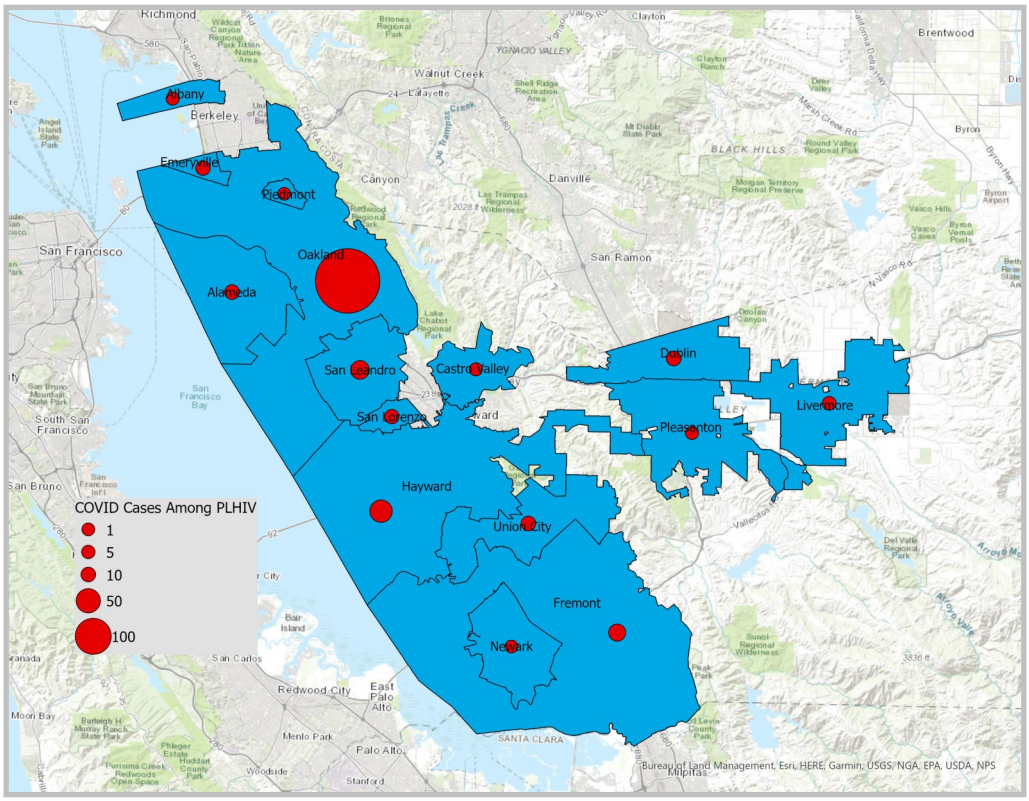


Table 3.1: People Living with HIV Disease and Prevalence Rates, Alameda County, Year-End 2020

Characteristic	Category	Count	Percent	Prevalence per 100,000	95% Confidence Interval
All PLHIV		6305	100.0%	375.9	366.6-385.2
Sex[a]	Male	5281	83.8%	641.0	623.7-658.3
	Female	1024	16.2%	120.0	112.6-127.3
Race/Ethnicity[b]	AfrAmer	2400	38.1%	1,469.6	1410.8-1528.4
	White	1819	28.9%	351.4	335.3-367.6
	Latinx	1370	21.7%	356.6	337.7-375.5
	API	464	7.4%	87.3	79.4-95.3
	Other/Unk	252	4.0%	-	-
Age (years)[c]	0-12	*	*	*	**
	13-19	*	*	15.0	9.4-22.7
	20-29	406	6.4%	170.5	153.9-187.1
	30-39	1087	17.2%	452.7	425.8-479.6
	40-49	1192	18.9%	535.9	505.5-566.4
	50-59	1912	30.3%	841.3	803.6-879.0
	60 & older	1682	26.7%	490.0	466.6-513.4
Residence	North County	508	8.1%	357.8	326.7-388.9
	Oakland Area	3793	60.2%	715.4	692.7-738.2
	Central County	1232	19.5%	310.8	293.4-328.1
	South County	439	7.0%	122.0	110.6-133.4
	Tri-Valley	312	4.9%	130.7	116.2-145.2
	Remainder of county	*	*	191.8	111.7-307.1
	Unknown	*	*	**	**

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[c] Age at year-end 2020

[**] Unstable estimates not shown

[--] Rate not calculable for lack of a denominator

Table 3.2: HIV Prevalence by Race/Ethnicity and Age, Alameda County, Year-End 2020

Race/Ethnicity[a]	Age	Count	Percent	Prevalence per 100,000	95% Confidence Interval
All races	All ages	6305	100.0%	375.9	366.6-385.2
	0-12	*	*	*	**
	13-19	*	*	*	**
	20-29	406	6.4%	170.5	153.9-187.1
	30-39	1087	17.2%	452.7	425.8-479.6
	40-49	1192	18.9%	535.9	505.5-566.4
	50-59	1912	30.3%	841.3	803.6-879.0
	60 & older	1682	26.7%	490.0	466.6-513.4
AfrAmer	All ages	2400	38.1%	1,469.6	1410.8-1528.4
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	178	2.8%	844.6	720.5-968.7
	30-39	418	6.6%	2,057.5	1,860.2-2,254.7
	40-49	405	6.4%	1,807.4	1,631.4-1,983.5
	50-59	700	11.1%	2,840.3	2,629.9-3,050.7
	60 & older	682	10.8%	1,862.2	1,722.5-2,002.0
White	All ages	1819	28.9%	351.4	335.3-367.6
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	52	0.8%	83.1	62.0-108.9
	30-39	194	3.1%	323.5	278.0-369.1
	40-49	273	4.3%	400.2	352.7-447.7
	50-59	663	10.5%	732.0	676.3-787.8
	60 & older	636	10.1%	409.9	378.0-441.8
Latinx	All ages	1370	21.7%	356.6	337.7-375.5
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	123	2.0%	182.1	149.9-214.3
	30-39	322	5.1%	487.8	434.6-541.1
	40-49	331	5.2%	689.8	615.5-764.1
	50-59	360	5.7%	1,090.4	977.8-1,203.0
	60 & older	229	3.6%	600.4	522.6-678.2
API	All ages	464	7.4%	87.3	79.4-95.3
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	35	0.6%	47.3	33.0-65.8
	30-39	100	1.6%	119.2	95.8-142.6
	40-49	129	2.0%	170.4	141.0-199.8
	50-59	113	1.8%	157.0	128.0-185.9
	60 & older	84	1.3%	80.0	63.8-99.0
Other/Unk	All ages	252	4.0%	-	-
	0-12	*	*	-	-
	13-19	*	*	-	-
	20-29	18	0.3%	-	-
	30-39	53	0.8%	-	-
	40-49	54	0.9%	-	-
	50-59	76	1.2%	-	-
	60 & older	51	0.8%	-	-

Source: Alameda County eHARS, 2021 Q2

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

[-] Rate not calculable for lack of a denominator

Table 3.3: HIV Prevalence by Sex and Age, Alameda County, Year-End 2020

Sex[a]	Age	Count	Percent	Prevalence per 100,000	95% Confidence Interval
All	All ages	6305	100.0%	375.9	366.6-385.2
	0-12	*	*	**	**
	13-19	*	*	**	**
	20-29	406	6.4%	170.5	153.9-187.1
	30-39	1087	17.2%	452.7	425.8-479.6
	40-49	1192	18.9%	535.9	505.5-566.4
	50-59	1912	30.3%	841.3	803.6-879.0
	60 & older	1682	26.7%	490.0	466.6-513.4
Male	All ages	5281	83.8%	641.0	623.7-658.3
	0-12	*	*	**	**
	13-19	*	*	**	**
	20-29	352	5.6%	292.8	262.2-323.4
	30-39	967	15.3%	812.3	761.1-863.5
	40-49	974	15.4%	890.5	834.6-946.5
	50-59	1585	25.1%	1,420.8	1350.8-1490.7
	60 & older	1384	22.0%	887.8	841.0-934.6
Female	All ages	1024	16.2%	120.0	112.6-127.3
	0-12	*	*	**	**
	13-19	*	*	**	**
	20-29	54	0.9%	45.8	34.4-59.8
	30-39	120	1.9%	99.1	81.4-116.9
	40-49	218	3.5%	192.8	167.2-218.5
	50-59	327	5.2%	282.6	251.9-313.2
	60 & older	298	4.7%	159.0	141.0-177.1

Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[**] Unstable estimates not shown

Table 3.4: HIV Prevalence by Sex and Race/Ethnicity, Alameda County, Year-End 2020

Sex[a]	Race/Ethnicity[b]	Count	Percent	Prevalence per 100,000	95% Confidence Interval
All	All races	6305	100.0%	375.9	366.6-385.2
	AfrAmer	2400	38.1%	1,469.6	1410.8-1528.4
	White	1819	28.9%	351.4	335.3-367.6
	Latinx	1370	21.7%	356.6	337.7-375.5
	API	464	7.4%	87.3	79.4-95.3
	Other/Unk	252	4.0%	-	-
Male	All races	5281	83.8%	641.0	623.7-658.3
	AfrAmer	1803	28.6%	2,350.6	2242.1-2459.1
	White	1655	26.2%	641.2	610.3-672.1
	Latinx	1205	19.1%	616.6	581.8-651.5
	API	403	6.4%	158.3	142.9-173.8
	Other/Unk	215	3.4%	-	-
Female	All races	1024	16.2%	120.0	112.6-127.3
	AfrAmer	597	9.5%	689.4	634.1-744.7
	White	164	2.6%	63.2	53.5-72.9
	Latinx	165	2.6%	87.4	74.1-100.7
	API	61	1.0%	22.0	16.9-28.3
	Other/Unk	37	0.6%	-	-

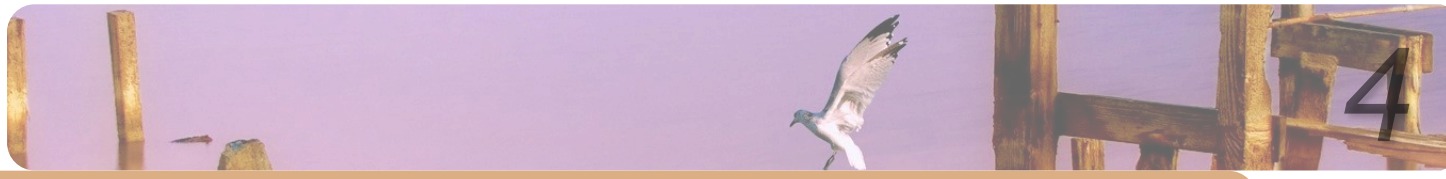
Source: Alameda County eHARS, 2021 Q2

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[**] Unstable estimates not shown

[-] Rate not calculable for lack of a denominator



4

Continuum of Care

Anti-retroviral therapy (ART), when taken regularly, can suppress HIV, preventing disease progression as well as preventing the transmission of HIV entirely. Thus, ART benefits PLHIV as well as the larger community. In order to maximize these benefits, it is crucial that PLHIV be diagnosed, linked to and retained in regular HIV care, and be prescribed and adhere to ART. These steps—diagnosis, linkage, retention, and prescription of and adherence to ART—are all pre-requisites for achieving virologic suppression. Together, these steps comprise the continuum of HIV care, also called the HIV care cascade or the stages of HIV care. The continuum is also a framework for conceptualizing HIV care and prevention efforts.

One goal put forth by the National HIV/AIDS Strategy is to increase the percentage of newly diagnosed persons linked to care within one month of their diagnosis to 85%, while EHE aims to achieve 95% linkage and viral suppression by 2025.[13] Alameda County previously reported linkage within 90 days; however, data on 30-day linkage is presented in this year's report to reflect currently relevant metrics. Evaluation of care for PLHIV is shown through two measures: any evidence of care or being in care—defined as at least one provider visit in a year, and retention—defined as two or more visits at least 90 days apart.

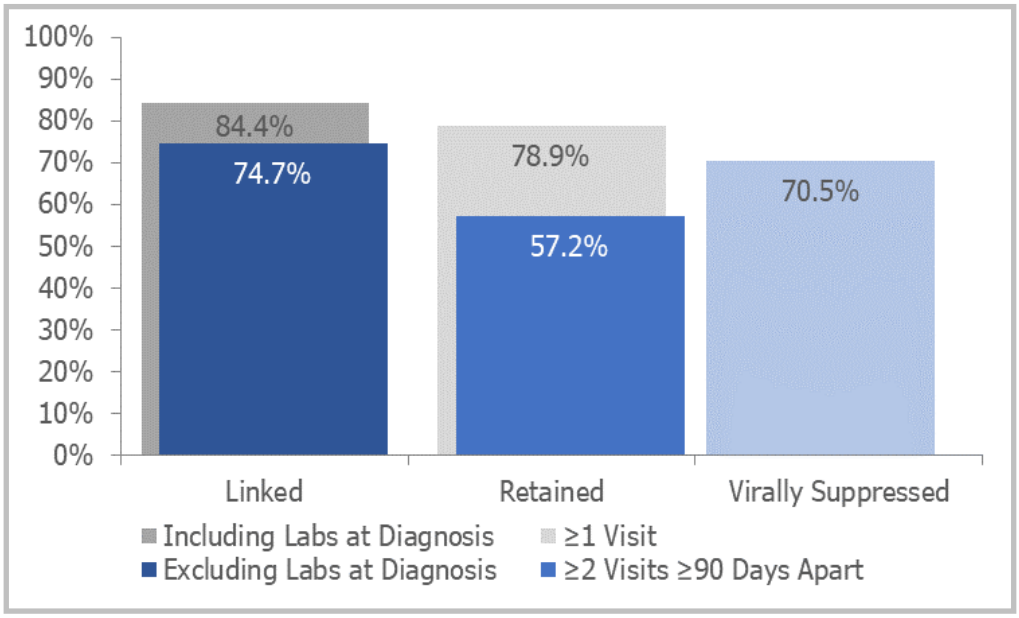
In the United States, the CDC estimated that 81.3% of persons diagnosed in 2019 were linked to care within one month. Additionally, the CDC estimated that among all PLHIV diagnosed by 2018 and alive at year-end 2019, 76.0% received any HIV care, 57.8% were retained in continuous care, and 65.5% were virally suppressed.[14]

In California, 83.0% of those diagnosed in 2019 were estimated to have linked to care within one month. By the end of 2019, among those living with diagnosed HIV in California, 75.0% were estimated to have received any HIV care in 2019, 56.0% were estimated to have been retained in continuous care, and 65.0% were estimated to have been virally suppressed at last test.[15]

This chapter examines the continuum of HIV care in Alameda County and select metrics for the Data to Care program. Care outcomes are described by demographics such as race/ethnicity, age, and sex at birth. The continuum measures look at data one year earlier than what is available in the New Diagnoses and People Living with HIV chapters to allow for more complete laboratory records to be included in the analyses.

The Overall Continuum of Care

Figure 4.1: The Continuum of HIV Care in Alameda County, 2017-2019



Notes: 1) Of 634 total diagnoses, 1 died within 30 days and were excluded from analysis.
2) Of 6,277 PLHIV at year-end 2018, 76 were known to have died and an additional 480 to have moved out of Alameda County in 2019.

In Alameda County, 74.7% of new diagnoses between 2017 and 2019 were linked to care within 30 days if HIV-related labs done on the date of diagnosis were excluded; 84.4% were linked to care if labs done on the date of diagnosis were included. Approximately 57.2% of PLHIV who resided in Alameda County for the entirety of 2019 had two or more visits 90 or more days apart and were considered retained in care. Viral suppression was estimated to be 70.5% that same year.

Linkage to Care

Here we present linkage to care estimates for Alameda County. It should be noted that receipt of a CD4 count or viral load test is not a definitive indicator of linkage to care. For example, a health care provider may order these tests concurrently with a confirmatory HIV test or before a patient even knows the diagnosis. Labs ordered after the date of diagnosis provide an alternative method for estimating linkage to care.

We present both estimates of linkage—one that includes labs done on the date of diagnosis and another that excludes them—providing a range of what might be considered linked to care.

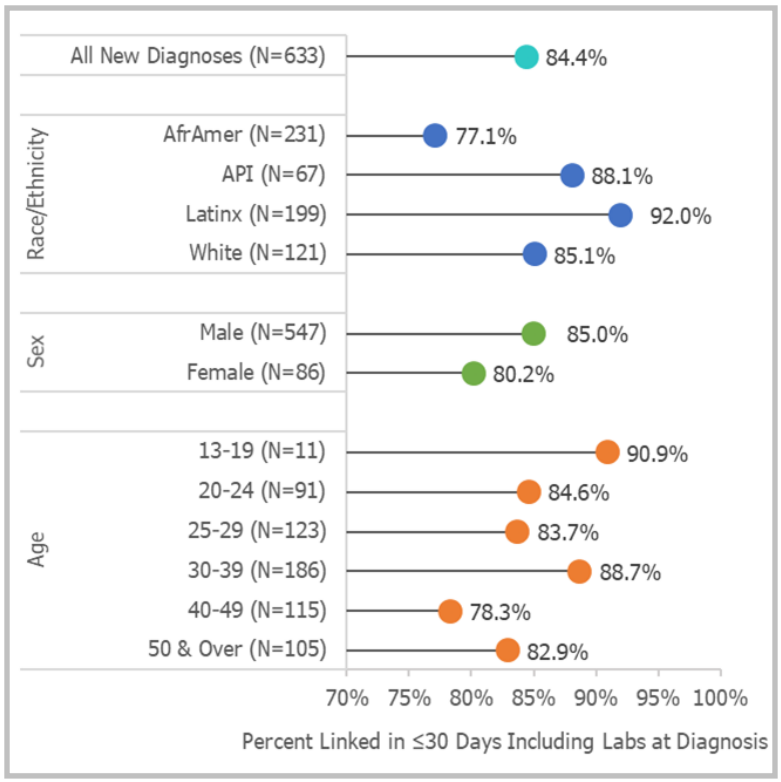
The median time from diagnosis to first CD4 or viral load among Alameda County residents diagnosed within 2017 to 2019 was four days. Excluding labs ordered on the date of diagnosis, the median time from diagnosis was 10 days.

Overall, 84.4% of those diagnosed with HIV in Alameda County from 2017 to 2019 were linked to HIV care within 30 days of their diagnosis. Excluding labs ordered on date of diagnosis, 74.7% of newly diagnosed cases were linked. Differences by sex were not statistically significant.

Differences in linkage to care by race/ethnicity were statistically significant.

Linkage ranged between 78.3% and 90.9% across age groups with 13 to 19 having the highest rate. Estimate for the youngest age group was less reliable due to a small number of cases.

Figure 4.2: Linkage to HIV Care Within 30 Days of Diagnosis by Demographics, Alameda County, 2017-2019



Notes: 1) "Sex" refers to sex assigned at birth.
2) Excludes persons who died within 30 days of diagnosis (N=1).

Retention in Care

In 2019, 78.9% of PLHIV* were in care, i.e., had one or more visits to an HIV care provider as indicated by a new lab result. The proportion of all PLHIV who had a single visit resulting in a lab was 17.7%. However, it is possible that some had additional visits in which no lab tests were done.

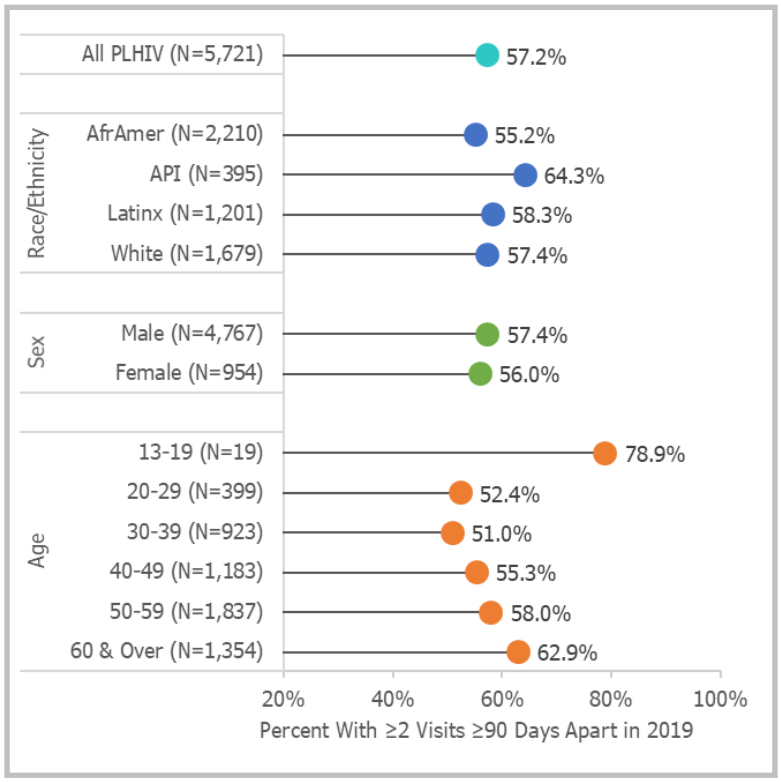
In 2019, 57.2% of PLHIV were retained in care, i.e., had two or more visits 90 or more days apart. Differences by sex were not statistically significant.

Rates of retention in HIV care were highest among API (64.3%) and Latinx (58.3%) PLHIV in 2019. Only 55.2% of African American PLHIV were retained in care. Differences by race/ethnicity were statistically significant.

PLHIV aged 30 to 39 at the end of 2019 had the lowest rates of retention in care; younger and successively older age groups had higher retention rates. Retention was highest among those aged 13 to 19 and 60 and over; however, the number of PLHIV aged 13 to 19 was small. The general trend of higher retention in older age groups was statistically significant.

*PLHIV that died or moved in 2018 were excluded from all analyses of retention in care.

Figure 4.3: Retention in HIV Care by Demographics, Alameda County, 2019



Note: "Sex" refers to sex assigned at birth.

Virologic Status

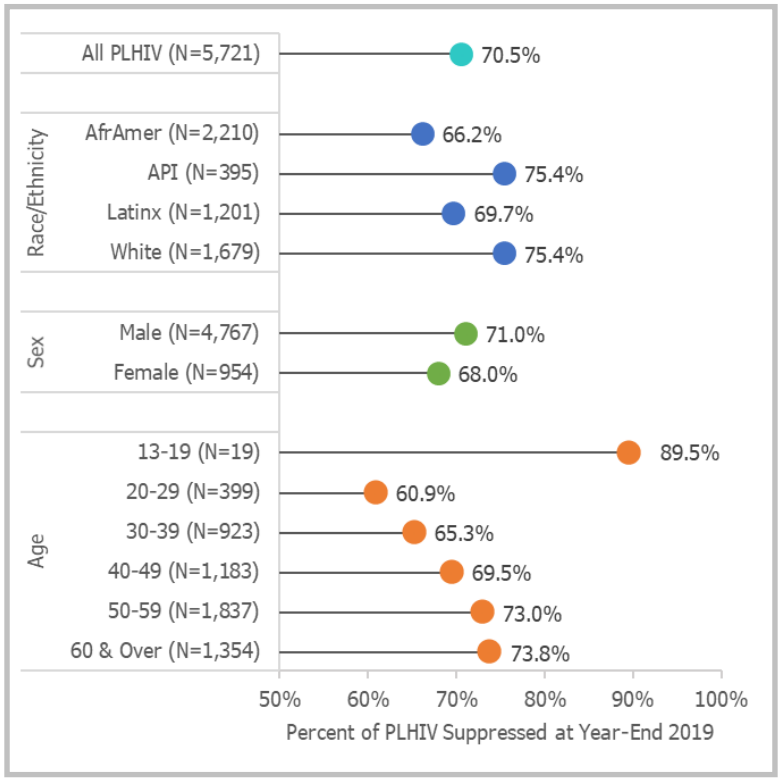
The final measure along the care continuum is virologic suppression, defined as a viral load under 200 copies/mL. For the purposes of these analyses, an undetectable viral load is defined as 75 copies/mL or less. PLHIV that died or moved in 2019 were excluded. Disparities in virologic suppression among PLHIV in care can suggest possible differences in ART use or access to care.

Approximately 70.5% of PLHIV were virally suppressed at their most recent test in 2019, with the majority being undetectable. Virologic status was statistically different between male and female PLHIV.

In 2019, 75.4% of API and white PLHIV were virally suppressed. Viral suppression was about 6 to 9% lower in all other racial/ethnic groups. The differences between racial/ethnic groups were significant. Similar disparities were seen among those retained in care (Table 4.13).

Viral suppression rates generally increased as age increased, ranging from 60.9% among those ages 20 to 29 to 73.8% among those ages 60 and over. A similar pattern was seen among those retained in care (Table 4.14).

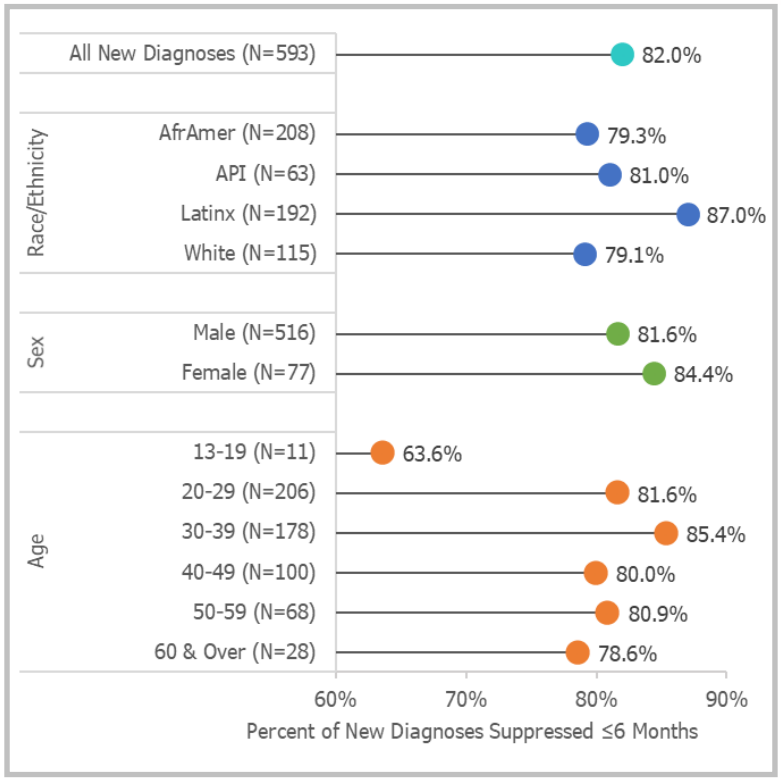
Figure 4.4: Virologic Status by Demographics, Alameda County, 2019



Note: "Sex" refers to sex assigned at birth.

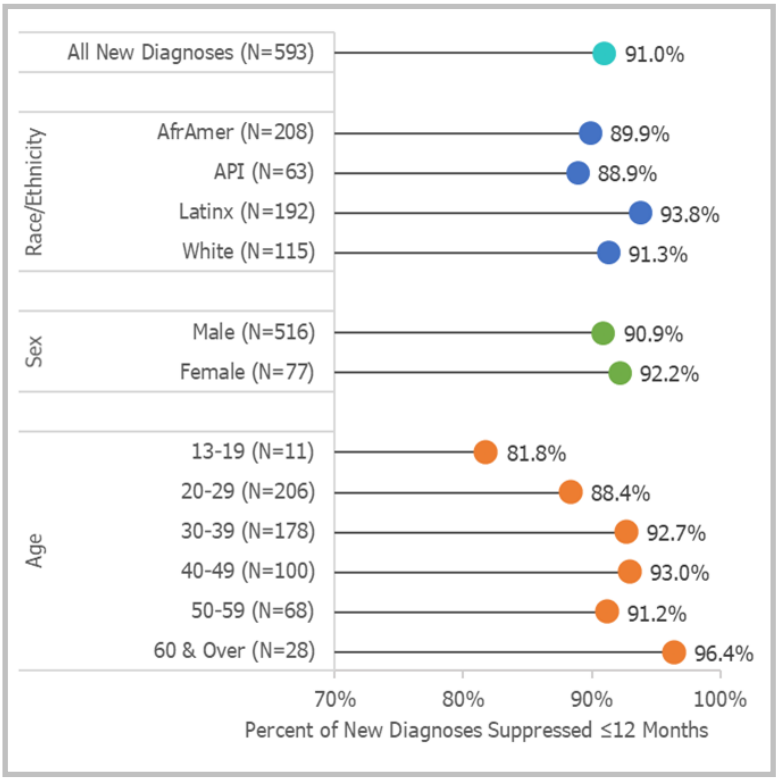
Viral suppression within 6 or 12 months of initial HIV diagnosis has become an accepted and relevant metric in describing the HIV Care Continuum. It can indicate the impact of rapid linkage and initiation of care as well as effective treatment for those newly diagnosed with HIV. For this metric, cases that did not receive a viral load test within 6 or 12 months of diagnosis were excluded from analysis. Virologic Status shown in Figure 4.4 describes all PLHIV in Alameda County in contrast to viral suppression within 6 or 12 months shown in the next page, which describes those newly diagnosed with HIV between 2017 and 2019.

Figure 4.5: Viral Suppression within 6 Months of Initial Diagnosis by Demographics, Alameda County, 2017-2019



Note: "Sex" refers to sex assigned at birth.

Figure 4.6: Viral Suppression within 12 Months of Initial Diagnosis by Demographics, Alameda County, 2017-2019



Note: "Sex" refers to sex assigned at birth.

Viral suppression within 6 months was highest among Latinx (87%), women (84.4%) and those age 30 to 39 at date of diagnosis (85.4%). These trends were similar among those suppressed within 12 months except for those aged 60 and over having the highest suppression among all ages (96.4%).

A Sankey diagram is useful for showing how PLHIV progressed through the care continuum and reached viral suppression (Figure 4.7). The width of each bar is proportional to the number of PLHIV represented by the identified outcome. Starting with all PLHIV at year-end 2018, most were still living in Alameda County at the end of 2019. A majority of those living in Alameda County for all of 2019 were either engaged or retained in care in 2019 (green) while some were considered out of care (orange). The diagram shows the proportion of PLHIV engaged or retained in care that were virally suppressed in 2019 (blue). Most PLHIV identified as virally unsuppressed were considered out of care, i.e., did not have a viral load or CD4 test in 2019. Only 18.4% of PLHIV engaged in care and 7.7% of those retained in care were unsuppressed.

Figure 4.7: Progression Through the Continuum of HIV Care Among PLHIV, Alameda County, 2019

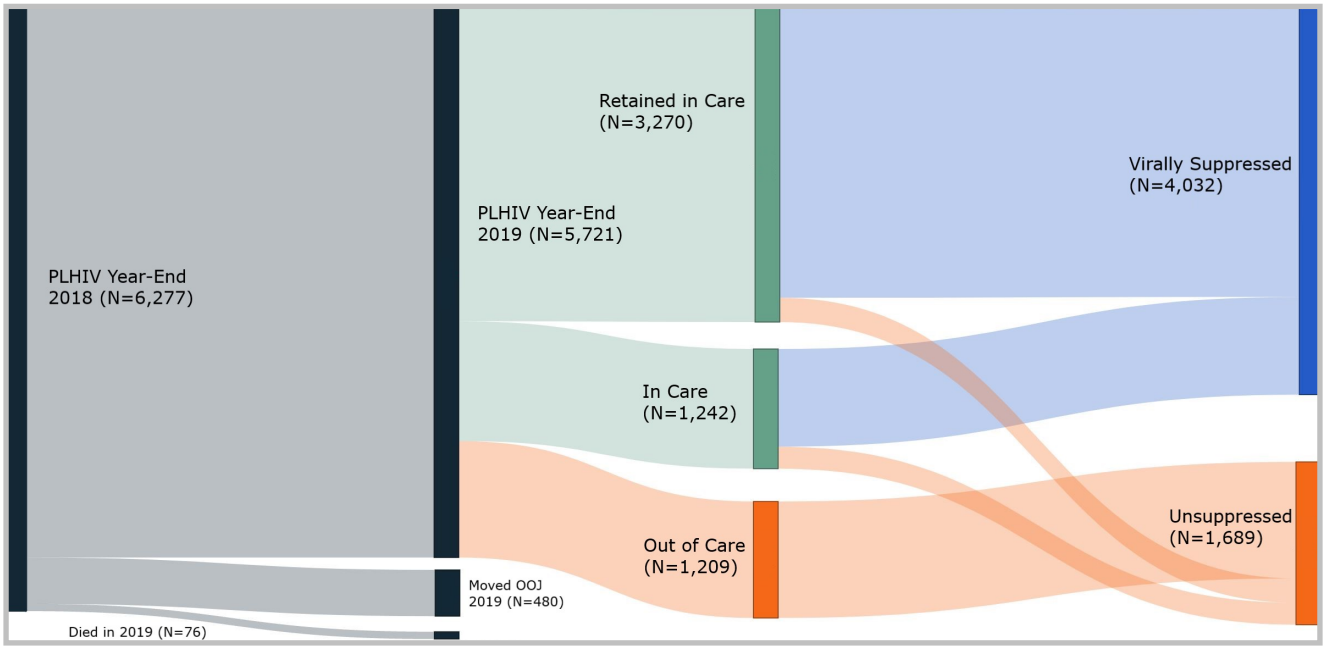


Table 4.1: Linkage to HIV Care Within 30 Days Among New Diagnoses by Sex and Age, Alameda County, 2017-2019

Sex[a]	Age at Diagnosis	New Diagnoses		Linked to Care ≤ 30 Days	
		Average Annual Count	Column Percent	Average Annual Count	Row Percent
All	All ages	211.2	100.0%	178.0	84.3%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	30.3	14.3%	25.7	84.8%
	25-29	41.0	19.4%	34.4	83.9%
	30-39	62.0	29.4%	55.0	88.7%
	40-49	38.4	18.2%	30.0	78.1%
	50 & older	35.3	16.7%	29.0	82.2%
Male	All ages	182.6	86.5%	155.0	84.9%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	26.0	12.3%	22.7	87.3%
	25-29	37.3	17.7%	31.7	85.0%
	30-39	56.7	26.8%	50.3	88.7%
	40-49	30.7	14.5%	24.0	78.2%
	50 & older	28.3	13.4%	23.0	81.3%
Female	All ages	28.6	13.5%	23.0	80.4%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	4.3	2.0%	3.0	69.8%
	25-29	3.7	1.8%	2.7	73.0%
	30-39	5.3	2.5%	4.7	88.7%
	40-49	7.7	3.6%	6.0	77.9%
	50 & older	7.0	3.3%	6.0	85.7%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes N=1 person who died within 30 days of diagnosis

[a]Refers to sex assigned at birth

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 4.2: Linkage to HIV Care Within 30 Days Among New Diagnoses by Sex and Race/ Ethnicity, Alameda County, 2017-2019

		New Diagnoses		Linked to Care ≤ 30 Days	
Sex[a]	Race/Ethnicity[b]	Average Annual Count	Column Percent	Average Annual Count	Row Percent
All	All races	211.4	100.0%	178.0	84.2%
	AfrAmer	77.0	36.4%	59.3	77.0%
	White	40.4	19.1%	34.4	85.1%
	Latinx	66.4	31.4%	61.0	91.9%
	API	22.6	10.7%	19.6	86.7%
	Other/Unk	5.0	2.4%	3.7	74.0%
Male	All races	182.7	86.4%	155.0	84.8%
	AfrAmer	61.7	29.2%	47.3	76.7%
	White	34.7	16.4%	29.7	85.6%
	Latinx	61.7	29.2%	56.7	91.9%
	API	20.3	9.6%	18.3	90.1%
	Other/Unk	4.3	2.0%	3.0	69.8%
Female	All races	28.7	13.6%	23.0	80.1%
	AfrAmer	15.3	7.2%	12.0	78.4%
	White	5.7	2.7%	4.7	82.5%
	Latinx	4.7	2.2%	4.3	91.5%
	API	*	*	*	*
	Other/Unk	*	*	*	*

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes N=1 person who died within 30 days of diagnosis

[a] Refers to sex assigned at birth

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 4.3: Linkage to HIV Care Within 30 Days Among New Diagnoses by Race/Ethnicity and Age, Alameda County, 2017-2019

		New Diagnoses		Linked to Care ≤ 30 Days	
Race/Ethnicity[a]	Age at Diagnosis	Average Annual Count	Column Percent	Average Annual Count	Row Percent
All races	All ages	211.4	100.0%	177.8	84.1%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	30.4	14.4%	25.6	84.2%
	25-29	41.0	19.4%	34.3	83.7%
	30-39	62.0	29.3%	55.0	88.7%
	40-49	38.4	18.2%	30.0	78.1%
	50 & older	35.3	16.7%	29.0	82.2%
AfrAmer	All ages	77.0	36.4%	59.4	77.1%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	11.0	5.2%	8.7	79.1%
	25-29	17.0	8.0%	14.0	82.4%
	30-39	18.7	8.8%	14.7	78.6%
	40-49	12.3	5.8%	8.7	70.7%
	50 & older	16.0	7.6%	11.7	73.1%
White	All ages	40.4	19.1%	34.2	84.7%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	3.7	1.8%	2.3	62.2%
	25-29	5.7	2.7%	4.3	75.4%
	30-39	11.3	5.3%	10.3	91.2%
	40-49	8.7	4.1%	7.0	80.5%
	50 & older	11.0	5.2%	10.3	93.6%
Latinx	All ages	66.3	31.4%	60.9	91.9%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	12.0	5.7%	11.3	94.2%
	25-29	13.3	6.3%	12.0	90.2%
	30-39	23.0	10.9%	21.0	91.3%
	40-49	12.7	6.0%	11.3	89.0%
	50 & older	4.3	2.0%	4.3	100.0%
API	All ages	22.7	10.7%	19.6	86.3%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	2.7	1.3%	2.3	85.2%
	25-29	3.7	1.8%	3.0	81.1%
	30-39	7.3	3.5%	7.3	100.0%
	40-49	3.7	1.8%	3.0	81.1%
	50 & older	4.0	1.9%	2.7	67.5%
Other/Unk	All ages	5.0	2.4%	3.7	74.0%
	5-12	*	*	*	*
	13-19	*	*	*	*
	20-24	*	*	*	*
	25-29	*	*	*	*
	30-39	*	*	*	*
	40-49	*	*	*	*
	50 & older	*	*	*	*

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes N=1 person who died within 30 days of diagnosis

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[*] Some cells suppressed to protect confidentiality

[**] Unstable estimates not shown

Table 4.4: Any Evidence of Care in 2019 Among PLHIV at Year-End 2018 by Race/ Ethnicity and Age, Alameda County

Race/Ethnicity[a]	Age	All PLHIV		Any Visit in 2019	
		Count	Column Percent	Count	Row Percent
All races	All ages	5721	100.0%	4512	78.9%
	0-12	6	0.1%	6	100.0%
	13-19	19	0.3%	18	94.7%
	20-29	399	7.0%	301	75.4%
	30-39	923	16.1%	709	76.8%
	40-49	1183	20.7%	920	77.8%
	50-59	1837	32.1%	1472	80.1%
	60 & older	1354	23.7%	1086	80.2%
AfrAmer	All ages	2210	38.6%	1711	77.4%
	0-12	5	0.1%	5	100.0%
	13-19	12	0.2%	12	100.0%
	20-29	186	3.3%	139	74.7%
	30-39	351	6.1%	262	74.6%
	40-49	400	7.0%	313	78.3%
	50-59	703	12.3%	558	79.4%
	60 & older	553	9.7%	422	76.3%
White	All ages	1679	29.3%	1345	80.1%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	53	0.9%	33	62.3%
	30-39	170	3.0%	125	73.5%
	40-49	287	5.0%	224	78.0%
	50-59	652	11.4%	534	81.9%
	60 & older	515	9.0%	428	83.1%
Latinx	All ages	1201	21.0%	933	77.7%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	107	1.9%	88	82.2%
	30-39	274	4.8%	215	78.5%
	40-49	323	5.6%	242	74.9%
	50-59	320	5.6%	245	76.6%
	60 & older	173	3.0%	139	80.3%
API	All ages	395	6.9%	321	81.3%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	35	0.6%	29	82.9%
	30-39	78	1.4%	61	78.2%
	40-49	118	2.1%	93	78.8%
	50-59	96	1.7%	81	84.4%
	60 & older	66	1.2%	55	83.3%
Other/Unk	All ages	236	4.1%	202	85.6%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	18	0.3%	12	66.7%
	30-39	50	0.9%	46	92.0%
	40-49	55	1.0%	48	87.3%
	50-59	66	1.2%	54	81.8%
	60 & older	47	0.8%	42	89.4%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[*] Some cells suppressed to protect confidentiality

Table 4.5: Any Evidence of Care in 2019 Among PLHIV at Year-End 2018 by Sex and Age, Alameda County

Sex[a]	Age	All PLHIV		Any Visit in 2019	
		Count	Column Percent	Count	Row Percent
All	All ages	5721	100.0%	4512	78.9%
	0-12	6	0.1%	6	100.0%
	13-19	19	0.3%	18	94.7%
	20-29	399	7.0%	301	75.4%
	30-39	923	16.1%	709	76.8%
	40-49	1183	20.7%	920	77.8%
	50-59	1837	32.1%	1472	80.1%
	60 & older	1354	23.7%	1086	80.2%
Male	All ages	4767	83.3%	3767	79.0%
	0-12	6	0.1%	6	100.0%
	13-19	10	0.2%	9	90.0%
	20-29	352	6.2%	266	75.6%
	30-39	805	14.1%	620	77.0%
	40-49	955	16.7%	740	77.5%
	50-59	1533	26.8%	1228	80.1%
	60 & older	1106	19.3%	898	81.2%
Female	All ages	954	16.7%	745	78.1%
	0-12	0	0.0%	0	0.0%
	13-19	9	0.2%	9	100.0%
	20-29	47	0.8%	35	74.5%
	30-39	118	2.1%	89	75.4%
	40-49	228	4.0%	180	78.9%
	50-59	304	5.3%	244	80.3%
	60 & older	248	4.3%	188	75.8%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth.

[*] Some cells suppressed to protect confidentiality

Table 4.6: Any Evidence of Care in 2019 Among PLHIV at Year-End 2018 by Sex and Race/Ethnicity, Alameda County

Sex[a]	Race/Ethnicity[b]	All PLHIV		Any Visit in 2019	
		Count	Column Percent	Count	Row Percent
All	All races	5721	100.0%	4512	78.9%
	AfrAmer	2210	38.6%	1711	77.4%
	White	1679	29.3%	1345	80.1%
	Latinx	1201	21.0%	933	77.7%
	API	395	6.9%	321	81.3%
	Other/Unk	236	4.1%	202	85.6%
Male	All races	4767	83.3%	3767	79.0%
	AfrAmer	1649	28.8%	1272	77.1%
	White	1527	26.7%	1229	80.5%
	Latinx	1053	18.4%	820	77.9%
	API	340	5.9%	276	81.2%
	Other/Unk	198	3.5%	170	85.9%
Female	All races	954	16.7%	745	78.1%
	AfrAmer	561	9.8%	439	78.3%
	White	152	2.7%	116	76.3%
	Latinx	148	2.6%	113	76.4%
	API	55	1.0%	45	81.8%
	Other/Unk	38	0.7%	32	84.2%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth.

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[**] Unstable estimates not shown.

Table 4.7: Retention in Continuous HIV Care in 2019 Among PLHIV at Year-End 2018 by Race/Ethnicity and Age, Alameda County

Race/Ethnicity[a]	Age	All PLHIV		Retained 2019	
		Count	Column Percent	Count	Row Percent
All races	All ages	5721	100.0%	3270	57.2%
	0-12	6	0.1%	4	66.7%
	13-19	19	0.3%	15	78.9%
	20-29	399	7.0%	209	52.4%
	30-39	923	16.1%	471	51.0%
	40-49	1183	20.7%	654	55.3%
	50-59	1837	32.1%	1066	58.0%
	60 & older	1354	23.7%	851	62.9%
AfrAmer	All ages	2210	38.6%	1221	55.2%
	0-12	5	0.1%	3	60.0%
	13-19	12	0.2%	10	83.3%
	20-29	186	3.3%	94	50.5%
	30-39	351	6.1%	179	51.0%
	40-49	400	7.0%	226	56.5%
	50-59	703	12.3%	394	56.0%
	60 & older	553	9.7%	315	57.0%
White	All ages	1679	29.3%	963	57.4%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	53	0.9%	23	43.4%
	30-39	170	3.0%	75	44.1%
	40-49	287	5.0%	142	49.5%
	50-59	652	11.4%	381	58.4%
	60 & older	515	9.0%	342	66.4%
Latinx	All ages	1201	21.0%	700	58.3%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	107	1.9%	60	56.1%
	30-39	274	4.8%	143	52.2%
	40-49	323	5.6%	184	57.0%
	50-59	320	5.6%	188	58.8%
	60 & older	173	3.0%	121	69.9%
API	All ages	395	6.9%	254	64.3%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	35	0.6%	24	68.6%
	30-39	78	1.4%	47	60.3%
	40-49	118	2.1%	71	60.2%
	50-59	96	1.7%	66	68.8%
	60 & older	66	1.2%	44	66.7%
Other/Unk	All ages	236	4.1%	132	55.9%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	18	0.3%	8	44.4%
	30-39	50	0.9%	27	54.0%
	40-49	55	1.0%	31	56.4%
	50-59	66	1.2%	37	56.1%
	60 & older	47	0.8%	29	61.7%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[*] Some cells suppressed to protect confidentiality

Table 4.8: Retention in Continuous HIV Care in 2019 Among PLHIV at Year-End 2018 by Sex and Age, Alameda County

		All PLHIV		Retained 2019	
Sex[a]	Age	Count	Column Percent	Count	Row Percent
All	All ages	5721	100.0%	3270	57.2%
	0-12	6	0.1%	4	66.7%
	13-19	19	0.3%	15	78.9%
	20-29	399	7.0%	209	52.4%
	30-39	923	16.1%	471	51.0%
	40-49	1183	20.7%	654	55.3%
	50-59	1837	32.1%	1066	58.0%
	60 & older	1354	23.7%	851	62.9%
Male	All ages	4767	83.3%	2736	57.4%
	0-12	6	0.1%	4	66.7%
	13-19	10	0.2%	7	70.0%
	20-29	352	6.2%	186	52.8%
	30-39	805	14.1%	412	51.2%
	40-49	955	16.7%	522	54.7%
	50-59	1533	26.8%	897	58.5%
	60 & older	1106	19.3%	708	64.0%
Female	All ages	954	16.7%	534	56.0%
	0-12	0	0.0%	0	0.0%
	13-19	9	0.2%	8	88.9%
	20-29	47	0.8%	23	48.9%
	30-39	118	2.1%	59	50.0%
	40-49	228	4.0%	132	57.9%
	50-59	304	5.3%	169	55.6%
	60 & older	248	4.3%	143	57.7%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth.

[*] Some cells suppressed to protect confidentiality

Table 4.9: Retention in Continuous HIV Care in 2019 Among PLHIV at Year-End 2018 by Sex and Race/Ethnicity, Alameda County

		All PLHIV		Retained 2019	
Sex[a]	Race/Ethnicity[b]	Count	Column Percent	Count	Row Percent
All	All races	5721	100.0%	3270	57.2%
	AfrAmer	2210	38.6%	1221	55.2%
	White	1679	29.3%	963	57.4%
	Latinx	1201	21.0%	700	58.3%
	API	395	6.9%	254	64.3%
	Other/Unk	236	4.1%	132	55.9%
Male	All races	4767	83.3%	2736	57.4%
	AfrAmer	1649	28.8%	917	55.6%
	White	1527	26.7%	881	57.7%
	Latinx	1053	18.4%	607	57.6%
	API	340	5.9%	218	64.1%
	Other/Unk	198	3.5%	113	57.1%
Female	All races	954	16.7%	534	56.0%
	AfrAmer	561	9.8%	304	54.2%
	White	152	2.7%	82	53.9%
	Latinx	148	2.6%	93	62.8%
	API	55	1.0%	36	65.5%
	Other/Unk	38	0.7%	19	50.0%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth.

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[**] Unstable estimates not shown.

Table 4.10: Viral Suppression in 2019 Among PLHIV at Year-End 2018 by Sex and Race/Ethnicity, Alameda County

		All PLHIV		Suppressed at Last Viral Load in 2019	
Sex[a]	Race/Ethnicity[b]	Count	Column Percent	Count	Row Percent
All	All races	5721	100.0%	4033	70.5%
	AfrAmer	2210	38.6%	1463	66.2%
	White	1679	29.3%	1265	75.3%
	Latinx	1201	21.0%	838	69.8%
	API	395	6.9%	298	75.4%
	Other/Unk	236	4.1%	169	71.6%
Male	All races	4767	83.3%	3384	71.0%
	AfrAmer	1649	28.8%	1082	65.6%
	White	1527	26.7%	1163	76.2%
	Latinx	1053	18.4%	737	70.0%
	API	340	5.9%	257	75.6%
	Other/Unk	198	3.5%	145	73.2%
Female	All races	954	16.7%	649	68.0%
	AfrAmer	561	9.8%	381	67.9%
	White	152	2.7%	102	67.1%
	Latinx	148	2.6%	101	68.2%
	API	55	1.0%	41	74.5%
	Other/Unk	38	0.7%	24	63.2%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth.

[b] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[**] Unstable estimates not shown.

Table 4.11: Viral Suppression in 2019 Among PLHIV at Year-End 2018 by Sex and Age, Alameda County

		All PLHIV		Suppressed at Last Viral Load in 2019	
Sex[a]	Age	Count	Column Percent	Count	Row Percent
All	All ages	5721	100.0%	4033	70.5%
	0-12	6	0.1%	6	100.0%
	13-19	19	0.3%	17	89.5%
	20-29	399	7.0%	244	61.2%
	30-39	923	16.1%	603	65.3%
	40-49	1183	20.7%	823	69.6%
	50-59	1837	32.1%	1341	73.0%
	60 & older	1354	23.7%	999	73.8%
Female	All ages	954	16.7%	649	68.0%
	0-12	0	0.0%	0	0.0%
	13-19	9	0.2%	9	100.0%
	20-29	47	0.8%	26	55.3%
	30-39	118	2.1%	72	61.0%
	40-49	228	4.0%	153	67.1%
	50-59	304	5.3%	218	71.7%
	60 & older	248	4.3%	171	69.0%
Male	All ages	4767	83.3%	3384	71.0%
	0-12	6	0.1%	6	100.0%
	13-19	10	0.2%	8	80.0%
	20-29	352	6.2%	218	61.9%
	30-39	805	14.1%	531	66.0%
	40-49	955	16.7%	670	70.2%
	50-59	1533	26.8%	1123	73.3%
	60 & older	1106	19.3%	828	74.9%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] Refers to sex assigned at birth

[*] Some cells suppressed to protect confidentiality

Table 4.12: Viral Suppression in 2019 Among PLHIV at Year-End 2018 by Race/ Ethnicity and Age, Alameda County

		All PLHIV		Suppressed at Last Viral Load in 2019	
Race/Ethnicity[a]	Age	Count	Column Percent	Count	Row Percent
All race	All ages	5721	100.0%	4033	70.5%
	0-12	6	0.1%	6	100.0%
	13-19	19	0.3%	17	89.5%
	20-29	399	7.0%	244	61.2%
	30-39	923	16.1%	603	65.3%
	40-49	1183	20.7%	823	69.6%
	50-59	1837	32.1%	1341	73.0%
	60 & older	1354	23.7%	999	73.8%
AfrAmer	All ages	2210	38.6%	1463	66.2%
	0-12	5	0.1%	5	100.0%
	13-19	12	0.2%	11	91.7%
	20-29	186	3.3%	111	59.7%
	30-39	351	6.1%	217	61.8%
	40-49	400	7.0%	268	67.0%
	50-59	703	12.3%	489	69.6%
	60 & older	553	9.7%	362	65.5%
White	All ages	1679	29.3%	1265	75.3%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	53	0.9%	30	56.6%
	30-39	170	3.0%	108	63.5%
	40-49	287	5.0%	208	72.5%
	50-59	652	11.4%	505	77.5%
	60 & older	515	9.0%	413	80.2%
Latinx	All ages	1201	21.0%	838	69.8%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	107	1.9%	74	69.2%
	30-39	274	4.8%	186	67.9%
	40-49	323	5.6%	218	67.5%
	50-59	320	5.6%	224	70.0%
	60 & older	173	3.0%	132	76.3%
API	All ages	395	6.9%	298	75.4%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	35	0.6%	21	60.0%
	30-39	78	1.4%	59	75.6%
	40-49	118	2.1%	89	75.4%
	50-59	96	1.7%	74	77.1%
	60 & older	66	1.2%	53	80.3%
Other/Unknown	All ages	236	4.1%	169	71.6%
	0-12	*	*	*	*
	13-19	*	*	*	*
	20-29	18	0.3%	8	44.4%
	30-39	50	0.9%	33	66.0%
	40-49	55	1.0%	40	72.7%
	50-59	66	1.2%	49	74.2%
	60 & older	47	0.8%	39	83.0%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480) in 2019.

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race.

[*] Some cells suppressed to protect confidentiality

Table 4.13: Viral Suppression in 2019 Among PLHIV at Year-End 2018 and In Care in 2019 by Race/Ethnicity, Alameda County

	PLHIV with Viral Load Test in 2019		Suppressed at Last Viral Load in 2019	
Race/Ethnicity[a]	Count	Column Percent	Count	Row Percent
All races	4512	100.0%	4033	89.4%
AfrAmer	1711	37.9%	1463	85.5%
White	1345	29.8%	1265	94.1%
Latinx	933	20.7%	838	89.8%
API	321	7.1%	298	92.8%
Other/Unk	202	4.5%	169	83.7%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480), or did not have any HIV labs reported (N=1221) in 2019

[a] 'Other/Unk' = American Indians and Alaskan Natives, multiple race, unknown race

[**] Unstable estimate not shown.

Table 4.14: Viral Suppression in 2019 Among PLHIV at Year-End 2018 and In Care in 2019 by Age, Alameda County

	PLHIV with Viral Load Test in 2019		Suppressed at Last Viral Load in 2019	
Age Group	Count	Column Percent	Count	Row Percent
All ages	4512	100.0%	4033	89.4%
0-12	6	0.1%	6	100.0%
13-19	18	0.4%	17	94.4%
20-29	301	6.7%	244	81.1%
30-39	709	15.7%	603	85.0%
40-49	920	20.4%	823	89.5%
50-59	1472	32.6%	1341	91.1%
60 & older	1086	24.1%	999	92.0%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480), or did not have any HIV labs reported (N=1221) in 2019

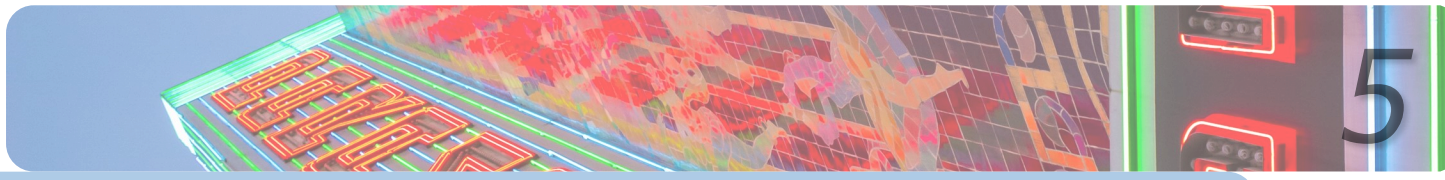
Table 4.15: Viral Suppression in 2019 Among PLHIV at Year-End 2018 and In Care in 2019 by Sex, Alameda County

	PLHIV with Viral Load Test in 2019		Suppressed at Last Viral Load in 2019	
Sex[a]	Count	Column Percent	Count	Row Percent
All	4512	100.0%	4033	89.4%
Male	3767	83.5%	3384	89.8%
Female	745	16.5%	649	87.1%

Source: Alameda County eHARS, 2021 Q2

NOTE: Excludes PLHIV at year-end 2018 who died (N=76) or moved out of the county (N=480), or did not have any HIV labs reported (N=1221) in 2019

[a] Refers to sex assigned at birth



Key Populations

- *Transgender*
- *People Who Inject Drugs*
- *Non-US-Born*
- *Gay, Bisexual, and Other Men Who Have Sex with Men*
- *Young People of Color*
- *Latinx*

Transgender

Transgender is an umbrella term used to describe a population whose gender identity differs from their sex at birth. Transgender people face high levels of discrimination, exclusion from employment, and social marginalization, resulting in increased rates of poverty, substance use, and barriers to healthcare. As a result of these intersecting factors that influence all stages of HIV diagnosis, treatment, and the care continuum, transgender people experience unique vulnerability to HIV.

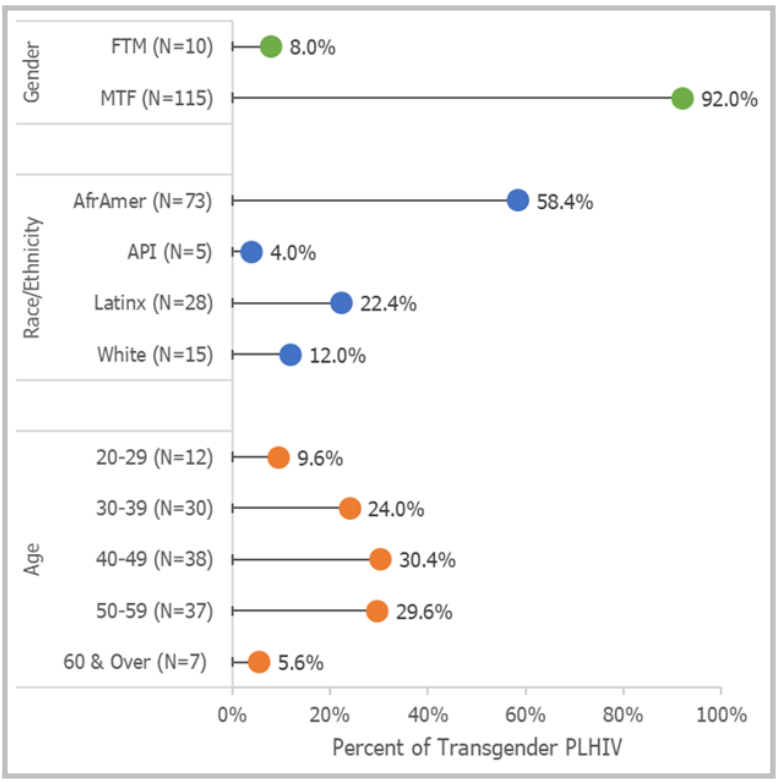
Epidemiologic data shows that the transgender community carries a disproportionately high HIV burden compared to other groups.[16] However, attempts to characterize the specifics of such burden is often hindered by the lack of accurate transgender data in healthcare.[17] Historically, systems for collecting and sharing medical data did not always have distinct fields to describe birth sex, current gender, or transgender status. In addition, risk of stigmatization and discrimination may prevent transgender people from seeking out healthcare or accurately disclosing their gender to providers. Transgender PLHIV is a critical population that deserves more visibility as they are likely to be underestimated in routine surveillance and experience a significant HIV burden.

A national systemic review in 2019 estimated 14.1% of trans women and 3.2% of trans men are living with HIV, which equated to a prevalence of 9.2% for transgender people overall, compared to the estimated HIV prevalence for US adults of less than 0.5%.[18] Based on testing reported to CDC, the percentage of transgender people who received a new HIV diagnosis was three times the national average in 2017.[19] Transgender people of color make up the majority of HIV diagnoses among all transgender people in the United States. In California, transgender PLHIV report lower rates of linkage, retention, and viral suppression compared to newly diagnosed PLHIV overall. Based on 2017 data, 75% of transgender PLHIV were linked to care within 12 months, 58% retained in care, and 59% achieved viral suppression[20] compared to 90% linked in 12 months, 74% retained, and 72% suppressed overall.[21]

In Alameda County, surveillance data showed 125 transgender PLHIV at year-end 2020; the true count is likely higher due to reasons outlined above. Over half were African American, 22.4% identified as Latinx,

12% white, and 4% API. Ninety-two percent identified as male-to-female and 8% identified as female-to-male. Among transgender cases diagnosed between 2017 to 2019, 100% were linked to care within 30 days, 83.3% were virally suppressed within six months, and 91.7% suppressed within 12 months.

Figure 5.1: Selected Characteristics of Transgender PLHIV, Alameda County, Year-End 2020



Note: Gender refers to current gender.

Figure 5.2: Continuum of Care Among Newly Diagnosed Transgender, Alameda County, 2017-2019

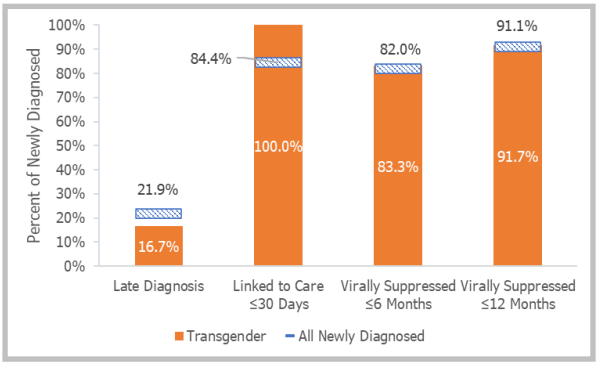
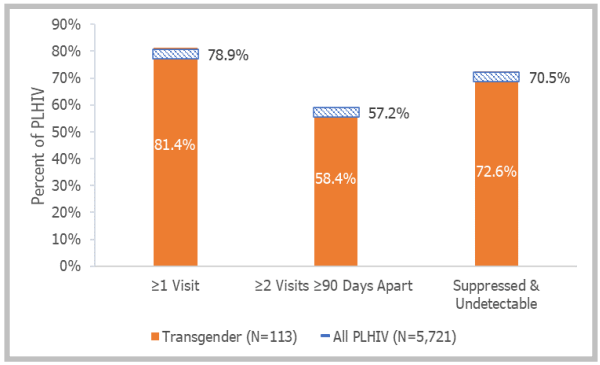


Figure 5.3: Retention and Virologic Status Among Transgender, Alameda County, Year-End 2019



Note: "Late diagnosis" spans those diagnosed from 2018 to 2020.

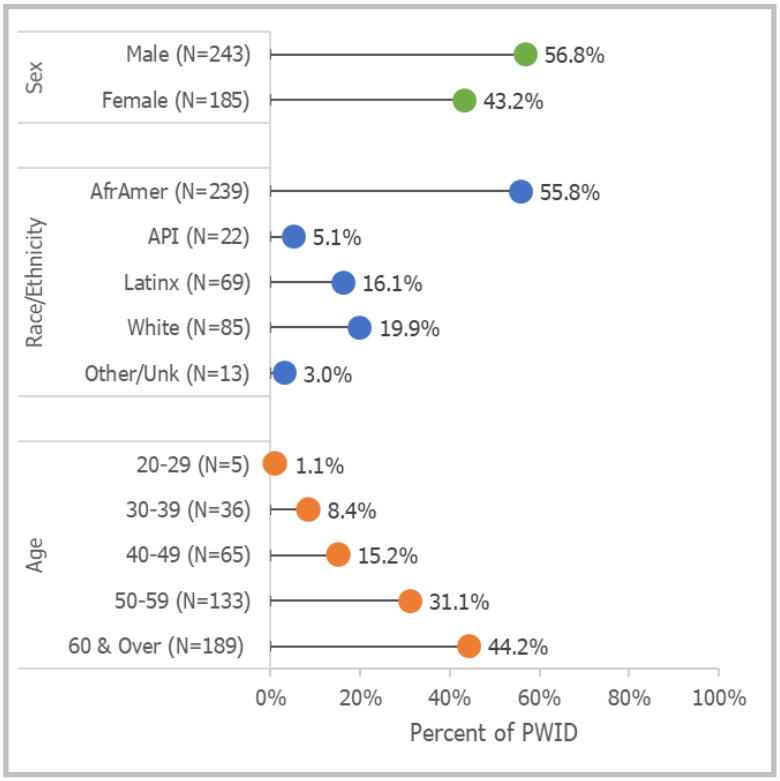
Continuum outcomes among newly diagnosed transgender cases were better compared to the overall newly diagnosed population. Retention and viral suppression outcomes among transgender PLHIV were also better compared to overall PLHIV: 81.4% of transgender PLHIV had evidence of care in 2019, 58.4% were retained in care, and 72.6% were virally suppressed. In comparison, among Alameda County PLHIV at year -end 2019, 78.9% had evidence of care, 57.2% were retained in care, and 70.5% were virally suppressed.

People Who Inject Drugs

People who inject drugs (PWID) experience a greater burden of HIV compared to other groups as they have a greater risk for acquiring HIV and limited access to treatment or prevention services. Risk for HIV is increased through the practices of sharing needles, syringes, and other drug use equipment, and higher likelihood to engage in unsafe sexual practices including condom-less sex, sex with multiple partners, and exchanging sex for drugs. All these practices can also result in elevated risk for acquiring and transmitting hepatitis B, hepatitis C, and other bloodborne infections. The common overlap between PWID and people who experience homelessness or incarceration brings into play social obstacles such as stigma and legal barriers that further hinder access to services for these marginalized groups. In addition, the PWID population face unique HIV prevention challenges including lack of syringe service programs (SSPs), the prescription opioid epidemic, stigma and discrimination, lack of access to substance use disorder treatment, and elevated risk for other infections.[22] For all these reasons, PWID is a key population for HIV prevention.

According to the CDC, there are more than 122,000 PWID living with HIV in 2018, of which 46% are Black, 27% are Latinx, and 21% are white.[23] PWID account for about 1 in 15 new HIV diagnoses in the US. Within California, PWID made up 5.9% of an estimated 153,000 PLHIV in year-end 2017. Although linkage rates do not differ significantly from the statewide average, viral suppression in six months among PWID is the lowest of all transmission categories.[24]

Figure 5.4: Selected Characteristics of PWID Living with HIV, Year-End 2020

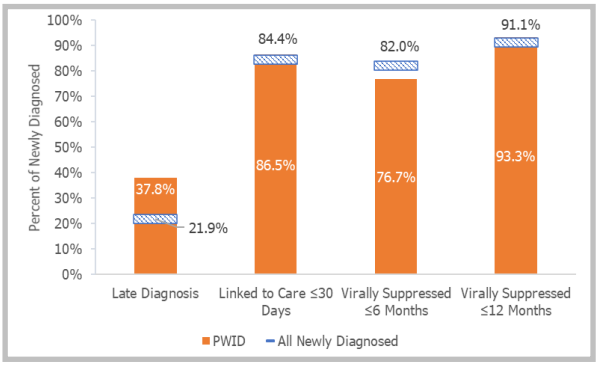


Note: "Sex" refers to birth sex.

Prominent characteristics of Alameda County's PWID population at year-end 2020* were: male (56.8%), African American (55.8%), followed by white (19.9%).

In the years 2017 to 2019, 86.5% of newly diagnosed PWID were linked to care within 30 days which was slightly higher than the county overall. In contrast, 76.7% were virally suppressed within six months, lower than the overall newly diagnosed population across the same period. However, viral suppression within 12 months was found to be higher among newly diagnosed PWID (93.3%) compared to the county average (91.1%).

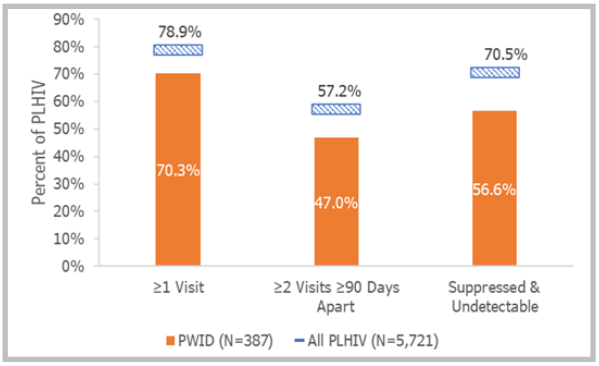
Figure 5.5: Continuum of Care Among Newly Diagnosed PWID, Alameda County, 2017-2019



Note: "Late diagnosis" spans those diagnosed from 2018 to 2020.

Among PLHIV who inject drugs and resided in Alameda County for the entirety of 2019, 70.3% had at least one visit that year. Forty-seven percent had two or more visits 90 or more days apart and were considered retained in care, and 56.6% were virally suppressed. All these outcomes were significantly poorer than the county PLHIV average in the same time period.

Figure 5.6: Retention and Virologic Status Among PWID, Alameda County, Year-End 2019



*Those who met the criteria of injection drug use as a risk factor for transmission at the time of HIV diagnosis were considered PWID. Transmission risk factors such as MSM, heterosexual contact, perinatal exposure, and injection drug use were assessed at the time of diagnosis. Analysis of PWID as a risk factor among PLHIV should be interpreted with caution as it may not represent current risk—which is not assessed in routine case surveillance and could potentially be a more reliable indicator of transmission risk. Consequently, those in the PWID category may not have consistently met or be currently meeting the definition of IDU as a risk factor, but this nuance is not distinguishable in the presented analyses.

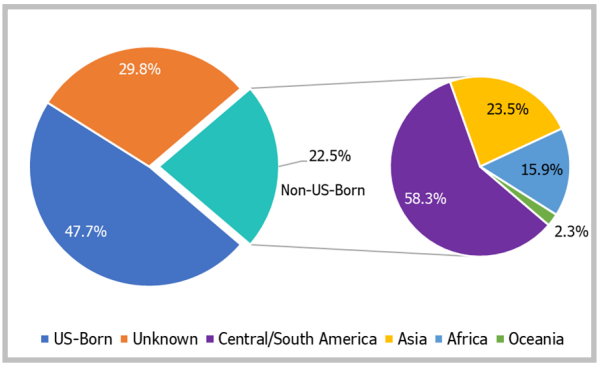
Non-US-Born

Non-US-born persons face a variety of challenges that put them at risk of developing HIV or facing barriers to receiving appropriate HIV care. The challenges experienced by non-US-born persons include lack of acculturation, discrimination, and language barriers. All these issues combined may negatively impact or obstruct their ability to access affordable and culturally competent health care, employment, education, and housing. Some studies show that non-US-born persons are more likely to hold lower wage jobs and are less likely to have health insurance through their employer. Further, 23% of documented immigrants were uninsured and 45% of undocumented immigrants were uninsured.[25]

According to the CDC, non-US-born persons made up 13% of the US population in 2010 while comprising 16% of all new HIV diagnoses in that same year.[26] In Alameda County, non-US-born persons comprised 32.5% of its population of 1.6 million people in 2019.[27] Among the 6,305 people living with HIV at year-end 2020 in Alameda County, 20.5% were non-US-born. Thus, non-US-born persons are a key population with regards to risk and burden of HIV. Data on nativity status can help in describing the need for culturally appropriate HIV services for non-US-born persons.

Among 587 new HIV diagnoses from 2018 to 2020 in Alameda County, almost a quarter (22.5%) were born in another country. US-born persons comprised 47.7% and persons with unknown country of birth comprised 29.8%. Of the 132 non-US-born new HIV diagnoses, 58.3% came from Central or South America, 23.5% came from Asia, followed by 15.9% from Africa and 2.3% from Oceania. The top country of birth was Mexico with 34.9%; followed by India with 5.3%; and Columbia, Guatemala, and Philippines at 4.6% of non-US-born new diagnoses.

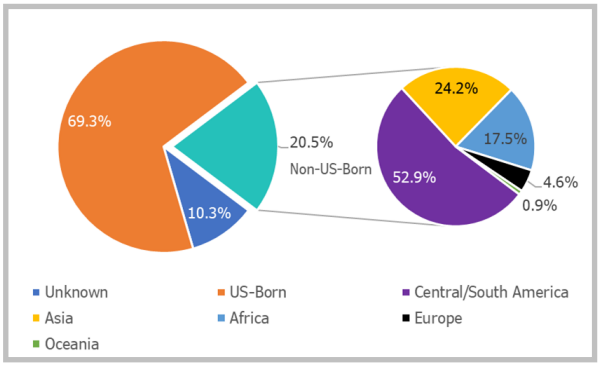
Figure 5.7 Nativity Status and Region of Origin Among Newly Diagnosed, Alameda County, 2018-2020



Note: N=587 newly diagnosed.

At the end of 2020 there were 6,305 PLHIV in Alameda County. Of these, 4,364 (69.3%) were US-born, 1,292 (20.5%) were non-US-born and 646 (10.3%) had unknown country of birth. Non-US-born PLHIV were primarily from Central or South America (52.9%), followed by Asia (24.2%), Africa (17.5%), Europe (4.6%) and Oceania (0.9%) regions. Among non-US-born PLHIV, Mexico (32.4%), the Philippines (6.6%) and Ethiopia (4.9%) were the top three countries of birth.

Figure 5.8: Nativity Status and Region of Origin Among PLHIV, Alameda County, Year-End 2020



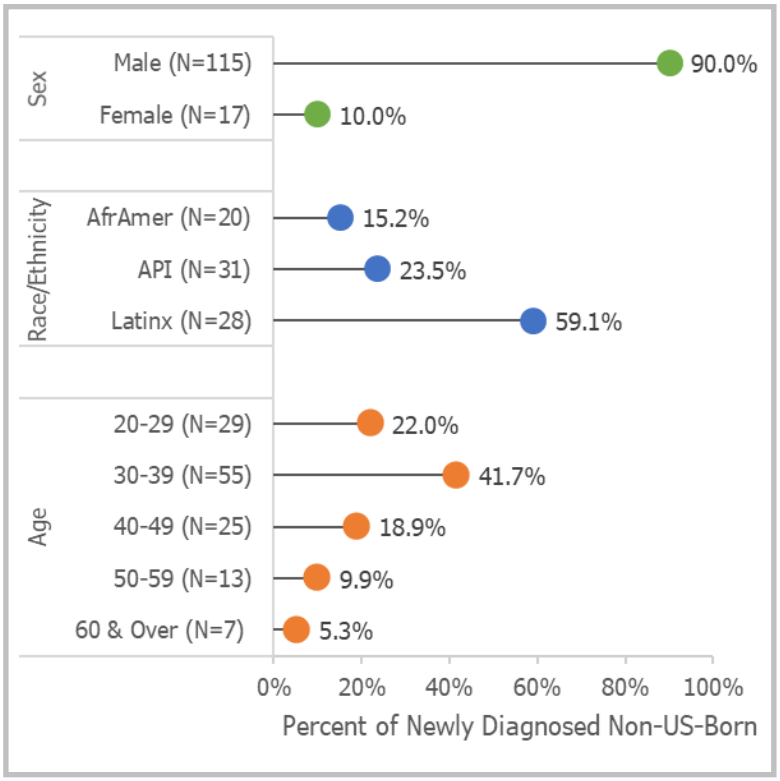
Note: N=6,305 PLHIV.

Latinx persons comprised 59.1% of all non-US-born persons newly diagnosed with HIV. The next largest racial/ethnic group was API (23.5%), followed by Blacks originating from Africa and other regions (15.2%). Non-US-born PLHIV had a similar racial/ethnic distribution—the largest group was Latinx (51.4%) followed by API (20.7%) and Blacks originating from Africa and other regions (18.7%).

Those aged 30 to 39 comprised 41.7% of newly diagnosed non-US-born persons followed by those aged 20 to 29 (22.0%) and those aged 40 to 49 (18.9%). Among non-US-born PLHIV persons aged 30 to 39 (38.7%) were the largest group, followed by those aged 20 to 29 (28.4%) and 40 to 49 (19.3%).

From 2018 to 2020, the most common mode of transmission for new HIV diagnoses among non-US-born males was MSM (78.2%). For new diagnoses among non-US-born females, presumed (47.0%) or reported heterosexual contact (35.2%) were the predominant modes of transmission (data not shown).

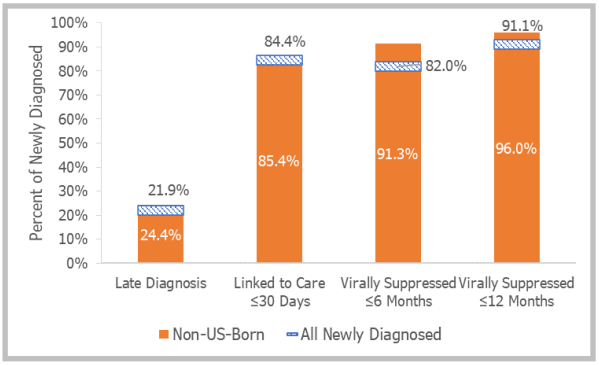
Figure 5.9: Selected Characteristics of Newly Diagnosed Non-US-Born, Alameda County, 2018-2020



Notes: 1) "Sex" refers to birth sex.
2) "AfrAmer" refers to Blacks originating from Africa and other regions for non-US-born.

From 2017 to 2019 24.4% of newly diagnosed non-US-born persons were diagnosed late, compared to 21.9% of all newly diagnosed persons in the county. During this period 85.4% of newly diagnosed non-US-born persons were linked to care within 30 days of diagnosis including labs done on the diagnosis date, which was similar to the linkage rate for all newly diagnosed persons in the county (84.4%). The 6- and 12- month viral suppression rate among newly diagnosed non-US-born persons was 91.3% and 96% respectively higher than that for all newly diagnosed persons (82% and 91.1% respectively).

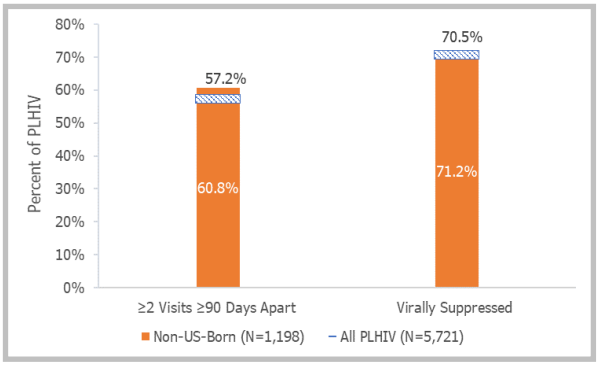
Figure 5.10: Continuum of Care Among Non-US-Born, Alameda County, 2017-2019



Note: "Late Diagnosis" spans those diagnosed between 2018 and 2020.

Among PLHIV, 60.8% of non-US-born persons were retained in care, a higher rate than that for the county (57.2%). With regards to viral suppression, 71.2% of non-US-born persons were virally suppressed, compared to 70.5% in the county.

Figure 5.11: Retention and Virologic Status for Non-US-Born PLHIV, Alameda County, Year-End 2019



Gay, Bisexual, and Other Men who have Sex with Men

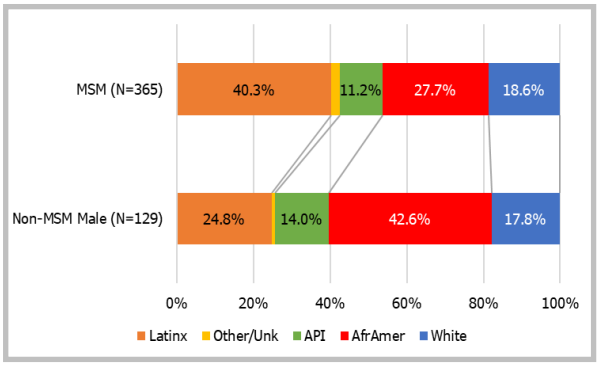
Local, state, and national data indicate that men who have sex with men are at an increased risk of acquiring HIV. A recent study has shown that overall incidence of HIV has decreased between 2008 and 2015 in all transmission risk groups except for MSM.[28] In 2019, 69% of new diagnoses in the United States were among MSM. In Alameda County from 2018 to 2020, 63.9% of newly diagnosed cases had a transmission risk category of MSM.

Among the 587 new diagnoses from 2018 to 2020, 365 had a risk category of MSM and a current gender identity of male (excluding trans men). Among those identified as MSM, 40.3% were Latinx and 27.7% were African American. This contrasts with other transmission risk categories among men which were 24.8% Latinx and 42.6% African American.

The age distribution among newly diagnosed MSM was much younger with 76.7% under the age of 40. In contrast among newly diagnosed males not identified as MSM only 48.1% were under the age of 40 at diagnosis.

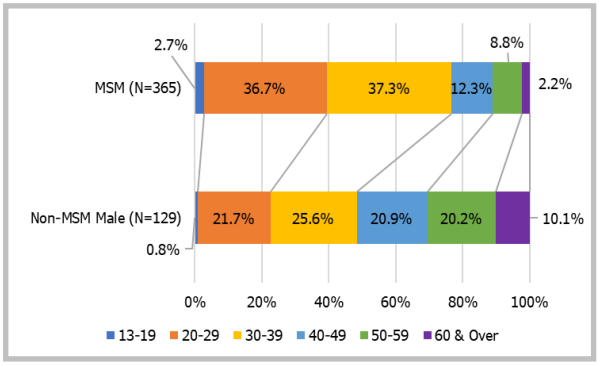
The rate of late diagnosis was higher among newly diagnosed non-MSM males (28.4%) than MSM males (19.7%).

Figure 5.12: Race/Ethnicity of MSM and Non-MSM Among New Diagnoses, Alameda County, 2018-2020



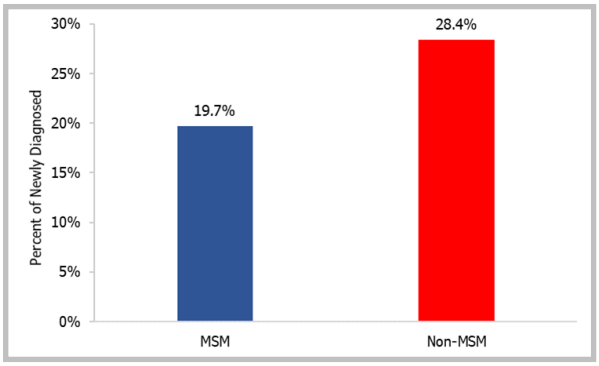
Note: Male as defined by current gender, excluding trans men.

Figure 5.13: Age at Diagnosis of MSM and Non-MSM Among New Diagnoses, Alameda County, 2018-2020



Note: Male as defined by current gender, excluding trans men.

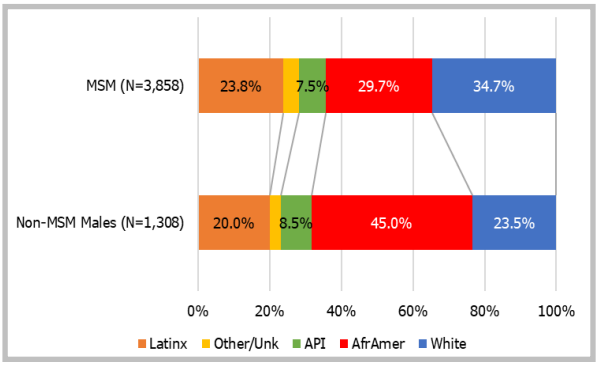
Figure 5.14: Late Diagnosis Rates of MSM and Non-MSM Among Newly Diagnosed, Alameda County, 2017-2019



Note: Male as defined by current gender, excluding trans men.

The racial/ethnic distribution among male PLHIV largely mirrored that for those newly diagnosed. However, while the proportion of newly diagnosed males who were white was approximately equal for MSM and non-MSM (18.6% and 17.8%, respectively), that proportion diverged among PLHIV—34.7% of MSM were white compared to 23.5% of non-MSM males. Among males living with HIV, a greater portion of MSM (27.3%) were under the age of 40 than non-MSM (17.3%).

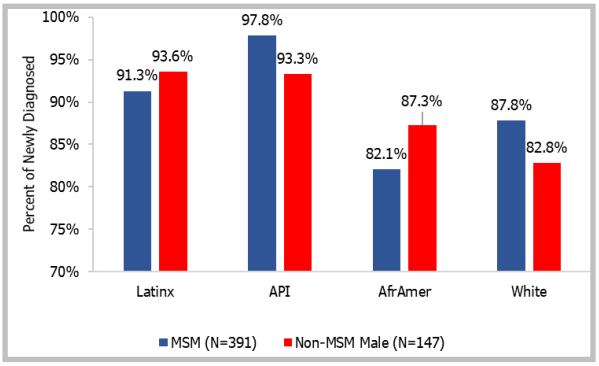
Figure 5.15: Race/Ethnicity of MSM and Non-MSM Among PLHIV, Alameda County, Year-End 2020



Notes: 1) Male as defined by current gender, excluding trans men.
2) "Other/Unk" includes American Indians, Alaskan Natives, multiracial, and unknown categories.

Linkage to care by MSM risk category in Alameda County varied across racial/ethnic groups. Latinx and African Americans MSM were less likely to be linked to care within 30 days of diagnosis than non-MSM Latinx and African American men. The reverse was true among white and API men.

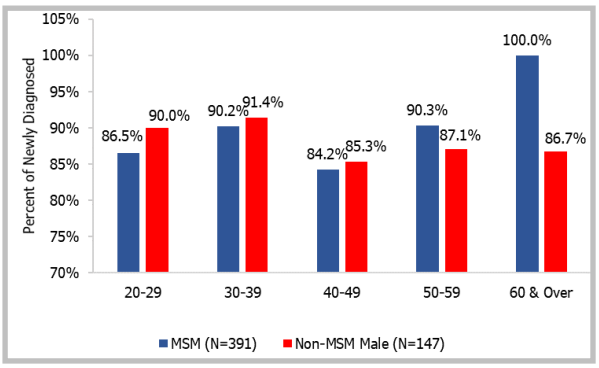
Figure 5.16: Race/Ethnicity and Linkage to Care in 30 Days of MSM and Non-MSM Among Newly Diagnosed, Alameda County, 2017-2019



Note: Male as defined by current gender, excluding trans men.

MSM were linked to care at higher rates than non-MSM males in older age groups while non-MSM were linked more in age groups between 20 and 49 years of age.

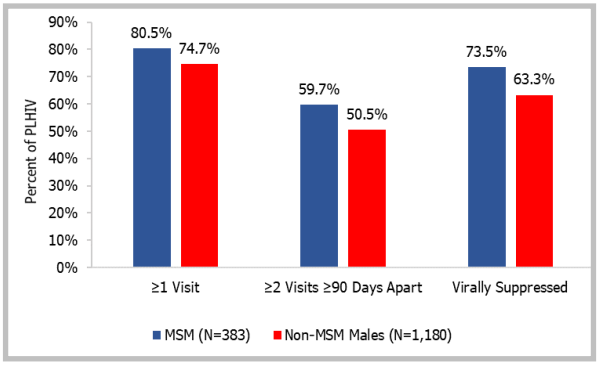
Figure 5.17: Age Group and Linkage to Care in 30 Days of MSM and Non-MSM Among Newly Diagnosed, Alameda County, 2017-2019



Note: Male as defined by current gender, excluding trans men.

Rates of being in care and retained in care were higher among MSM than non-MSM males in 2019. Viral suppression was higher among MSM (73.5%) than non-MSM males (63.3%).

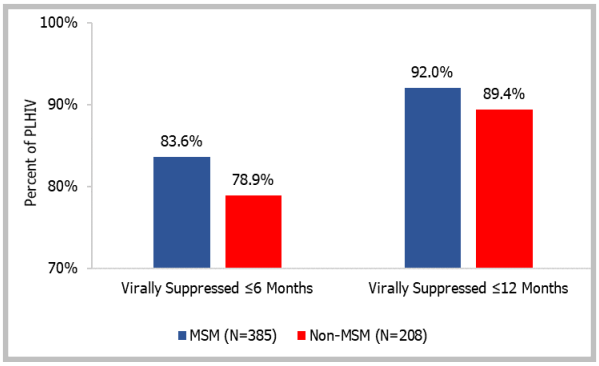
Figure 5.18: Retention and Viral Suppression of MSM and Non-MSM Among PLHIV, Alameda County, Year-End 2019



Note: Male as defined by current gender, excluding trans men.

Among newly diagnosed males, viral suppression within 6 months and 12 months were higher among MSM than non-MSM males.

Figure 5.19: Viral Suppression of MSM and Non-MSM Among Newly Diagnosed, Alameda County, 2017-2019



Note: Male as defined by current gender, excluding trans men.

Young People of Color

As discussed in Chapter 2, African Americans and Latinx experience higher HIV diagnosis rates than whites. Diagnosis rates are also higher among younger age groups such as those aged 20 to 29. In the United States adolescents (aged 13-19) and young adults (aged 20-24) made up 21% of new diagnoses in 2019. The highest rates among young adults were among African Americans and Latinx at 97.3 per 100,000 and 34.0 per 100,000, respectively. Between 2006 and 2019 in Alameda County, Latinx aged 20 to 29 experienced a statistically significant increase in diagnosis rate (4.3% increase annually, on average).

For this analysis "young" is defined as those age 13 to 29 years at the time of diagnosis when discussing those newly diagnosed or at a specific year-end when looking at PLHIV. The term "people of color (POC)" refers to individuals not identified as white or of unknown race/ethnicity.

From 2018 to 2020, the proportion of young people who were male and female was similar among whites and POC.

Late diagnoses were more common among young POC (13.7%) than among young whites (10.7%). This finding is consistent with higher rates of late diagnoses among the non-US born population, which is disproportionately comprised of POC.

Young POC were linked to care at higher rates than young whites. The rate of linkage to care within 30 days including labs on the date of diagnosis was 89.4% among young POC and 73.7% among young whites.

At year-end 2019, young POC had higher rates of being in care and retention in care than young white PLHIV. While 57.7% of young POC were retained in care only 42.4% of young white PLHIV were.

Figure 5.20: Late Diagnosis Among Young POC and Whites, Newly Diagnosed, Alameda County, 2017-2019

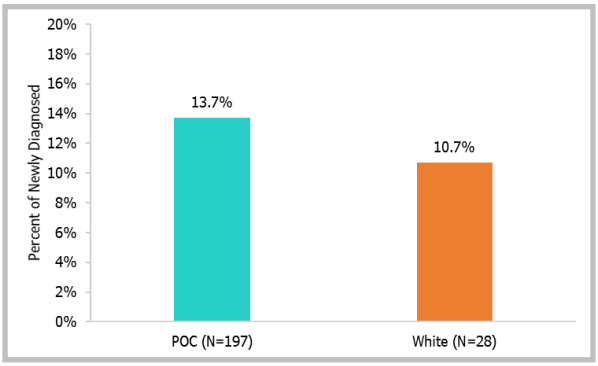


Figure 5.21: Linkage to Care in 30 Days Among Young POC and Whites, Newly Diagnosed, Alameda County 2017-2019

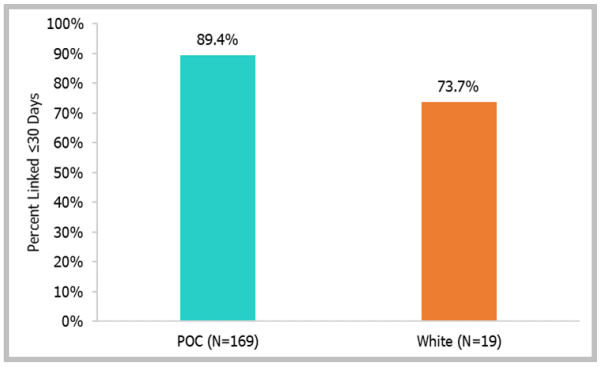
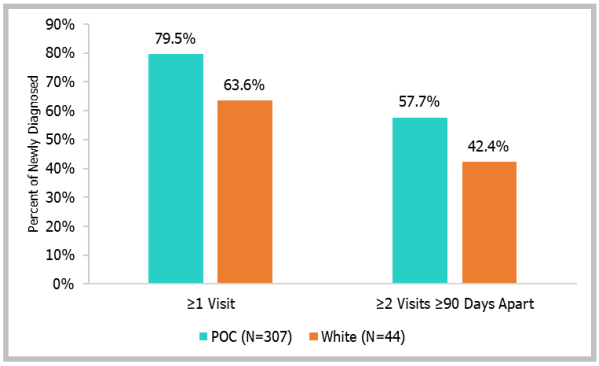


Figure 5.22: Retention in Care Among Young POC and Whites, PLHIV, Alameda County, Year-End 2019



Viral suppression within 6 months of diagnosis was higher among young POC compared to young whites. At 12 months, the gap in viral suppression rates between the two groups had only increased.

Figure 5.23: Viral Suppression Among Young POC and Whites, Alameda County, 2017-2019

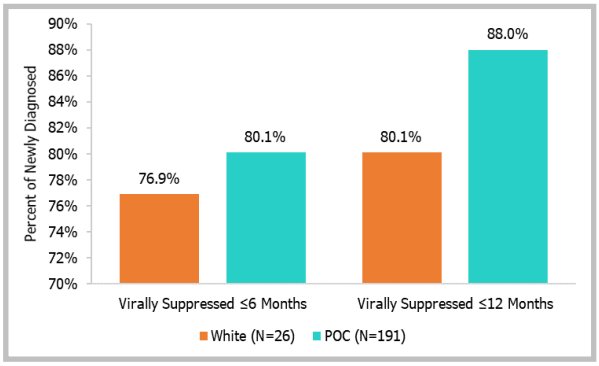
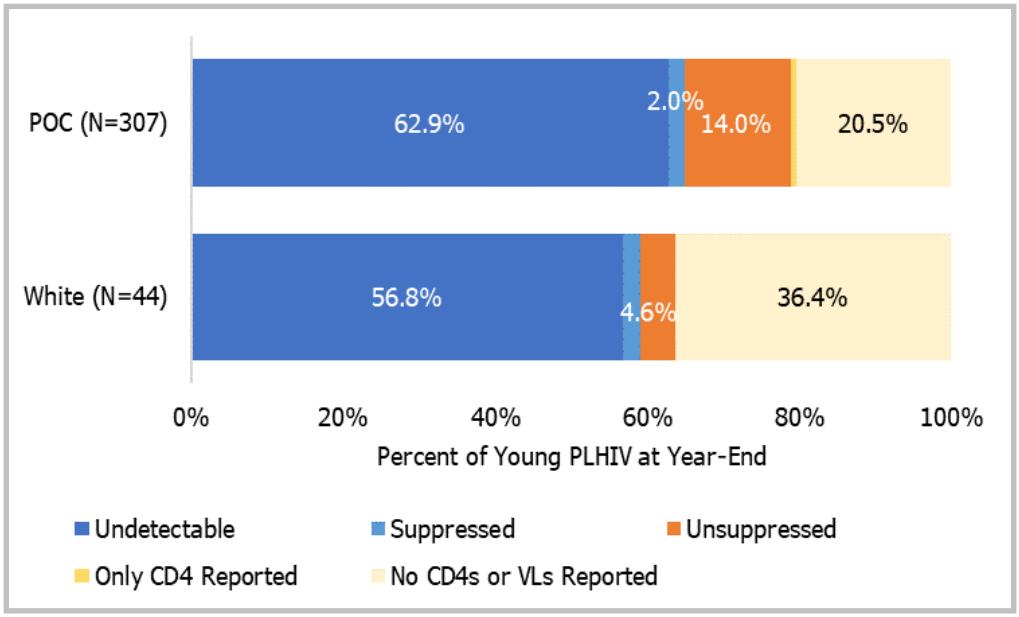


Figure 5.24: Viral Suppression Among Young POC and Whites, PLHIV, Alameda County, Year-End 2019



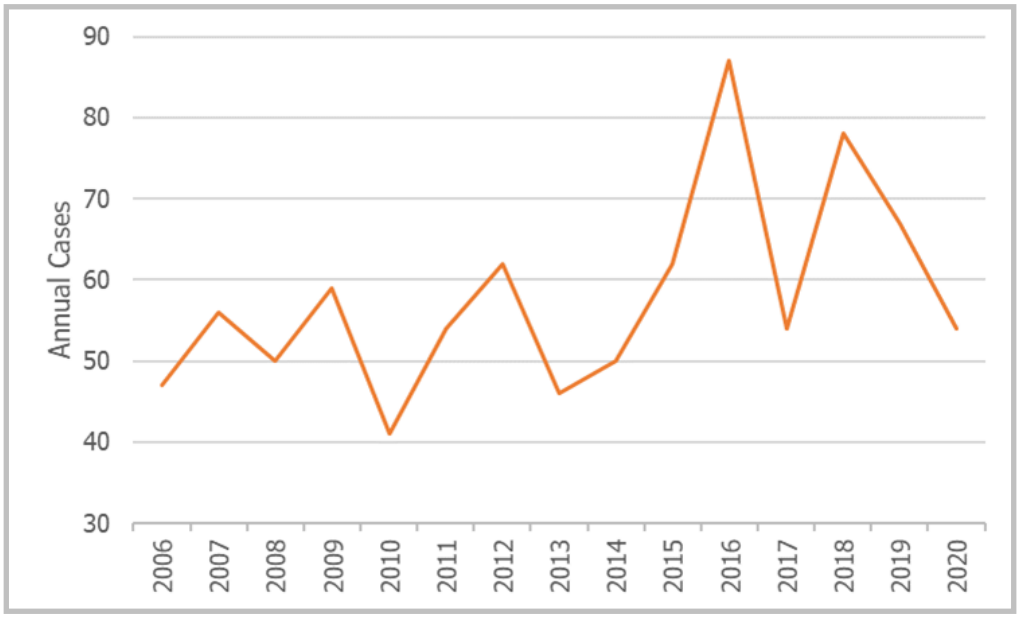
Overall viral suppression was higher among young POC with 64.9% virally suppressed and 59.1% of young white PLHIV suppressed. However, among the unsuppressed, 36.4% of young white PLHIV had no CD4 or viral load tests reported in 2019 compared to just 20.5% of young POC—a finding consistent with the higher retention rates among young POC.

Latinx

Latinx people face a variety of barriers that put them at elevated risk for acquiring HIV as well as getting appropriate, consistent treatment for HIV disease compared with other racial/ethnic groups. Overlapping historic social and cultural factors contribute to poorer health outcomes with regards to HIV care, including difficulties with acculturation, socioeconomic status, and language barriers with healthcare providers. Latinx with lower wage employment often do not have employer sponsored healthcare which delays early diagnosis, as well as consistent HIV care.[29]

U.S. census data from 2010 show that Latinx made up 18.5% of the U.S. population.[30] In 2016, Latinx made up one quarter of all new HIV diagnoses in the U.S.[31] Nation-wide, Latinx males accounted for nearly 30% of all new HIV infection cases in 2019.[32] In California, Latinx comprised approximately 39% of the overall population but made up 50% of new diagnoses.[33]

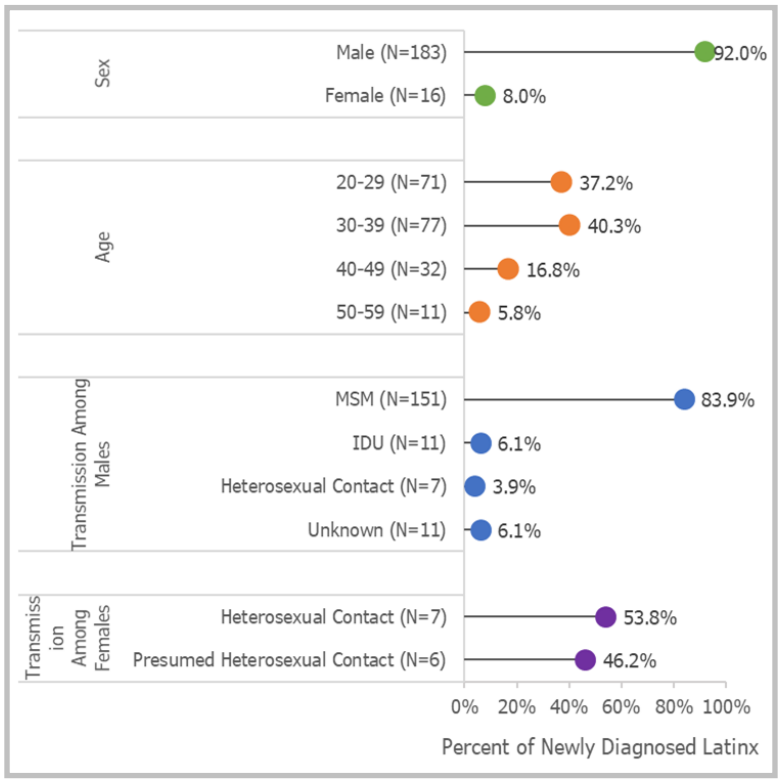
Figure 5.25: New Diagnoses Among Latinx, Alameda County, 2006-2020



Alameda County saw an increase in new HIV diagnoses among Latinx people over the past five years. Between 2006 and 2014, there was an annual average of 50 newly diagnosed Latinx persons but years 2015 to 2020 saw a spike that peaked at 78 cases in 2018. While 2020 showed 54 new cases, it was likely an undercount due to the significant impact of COVID-19 on HIV testing, diagnosis, and case reporting.

Latinx persons diagnosed between 2018 and 2020 were predominantly male (92.0%), in their twenties (37.2%) or thirties (40.3%), with predominant transmission risk reported as MSM (83.9%) — see Figure 5.26 on following page.

Figure 5.26: Selected Characteristics of Newly Diagnosed Latinx, Alameda County, 2018-2020



Note: "Sex" refers to sex at birth.

Linkage and viral suppression rates among newly diagnosed Latinx persons were higher than county-average: 92% of Latinx were linked to care within 30 days including labs at diagnosis, 87% were virally suppressed in less than six months, and 93.8% were virally suppressed within one year.

Engagement in care and viral suppression rates among Latinx PLHIV were found to be on par with county-average—58.2% of Latinx were engaged in care and 69.6% were virally suppressed at year-end 2019.

Figure 5.27: Continuum of Care Among Newly Diagnosed Latinx, Alameda County, 2017-2019

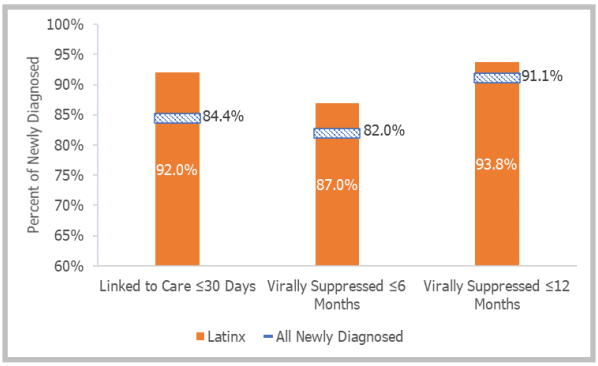
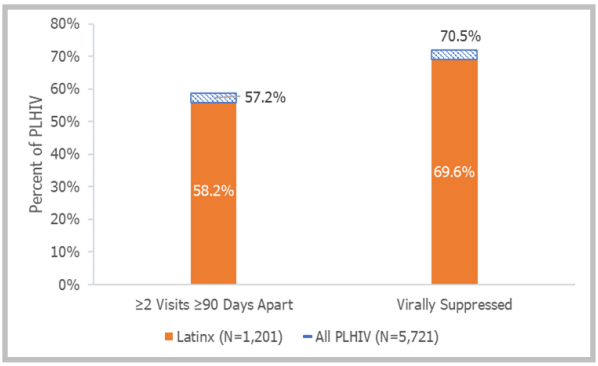
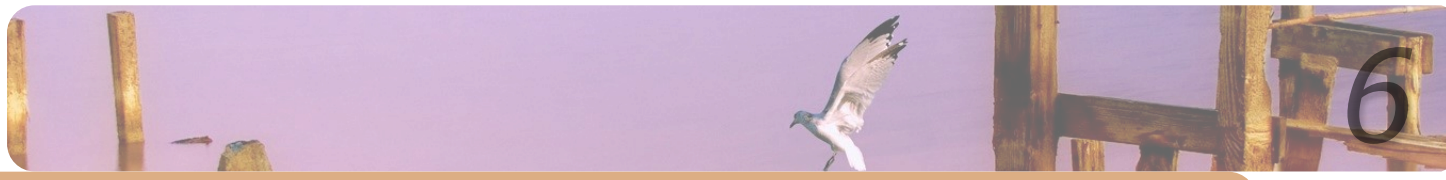


Figure 5.28: Retention and Virologic Status Among Latinx PLHIV, Alameda County, Year-End 2019





6

Social Determinants of Health and HIV

Social determinants of health (SDOH) refer to the complex and overlapping economic and social structures that contribute to health inequities and disparities. Five core dimensions that are assessed by SDOH are: the physical neighborhood and built environment, healthcare services, social and community context, education, and economic stability.[34] SDOH are the social and physical conditions in which people grow, work, learn, and age, as well as the effects that those conditions have on community and individual health outcomes.[35] These are factors largely outside the realm of individual characteristics related to behavioral risk factors. For example, low income neighborhoods that lack affordable, fresh produce or safe recreational areas such as parks and playgrounds are associated with less physical activity and poor nutrition which may contribute to increased risk of chronic health conditions like heart disease and diabetes.[36] SDOH are mostly responsible for health inequities—the unfair and avoidable differences in health status in a community.[37] Adverse social conditions can potentially increase the risks for a person acquiring HIV or progressing to stage 3 HIV disease (AIDS). Research has indicated persons who lived in census tracts in the US where 18% or more of the residents lived below the federal poverty level accounted for the highest HIV diagnosis rates, similarly where 18% or more of the residents had less than a high school diploma, where median household income was less than $42,000 a year, and where 15% or more of residents did not have high insurance coverage. Among these SDOH variables racial health disparities exist, for example research indicates Black/African American-white and Latinx-white absolute disparities were wider (or more disparate) in highest poverty areas than in lowest poverty areas with similar trends by income, education, and health insurance coverage.[35]

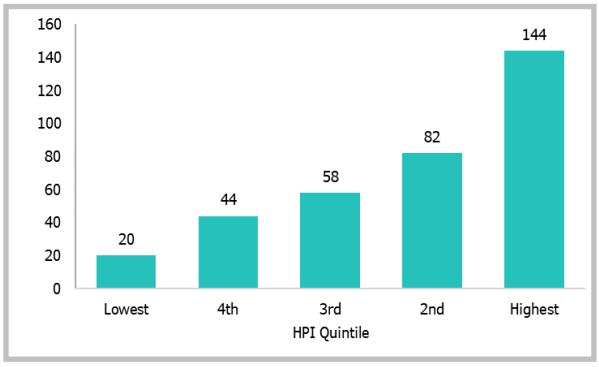
The California Healthy Places Index (HPI) is a composite score of California census tracts that account for social, economic, and environmental conditions that underly health behaviors and outcomes and predicts life expectancy. The HPI is comprised of 25 individual indicators that represent community conditions at the census tract level and are organized into 8 policy action areas of economy, education, healthcare access, housing, neighborhoods, clean environment, transportation, and social environment.[38]

HPI reflects geographic socioeconomic disadvantage where such conditions affect HIV health outcomes. For example, research has shown lack of stable, secure, adequate housing as a significant barrier to appropriate and consistent HIV medical care, access, and adherence to ART, sustained viral suppression, and risk of forward transmission.[39] Living in a community with access to affordable housing options, transportation, and safe neighborhood conditions can facilitate and promote behaviors that allow for the prevention and spread of HIV through adherence to ART and PrEP.

In this chapter we present analyses to examine HIV burden by overall HPI composite score. These analyses illustrate the association of HIV prevalence with HPI and can help guide policies to address the underlying needs of communities disproportionately impacted by HIV in Alameda County.

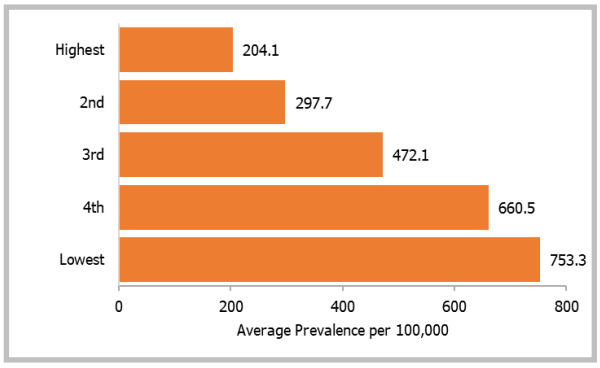
Alameda County contains 348 census tracts with HPI values assigned to them. For this analysis, census tracts were grouped into quintiles based on HPI percentiles. The "lowest" quintile had HPI percentiles of 20th or less while the "highest" quintile contains census tracts of the 80th percentile or higher. These percentiles are based on statewide HPI scores and not limited to the county. For that reason, the quintile groups do not contain equal numbers of census tracts. The distribution across quintiles in Alameda County can be seen in Figure 6.1. The lowest quintile group included 20 census tracts, the third quintile included 58, and the fifth or highest, included 144 census tracts in Alameda County.

Figure 6.1: Distribution of Alameda County Census Tracts by HPI Quintiles, 2020



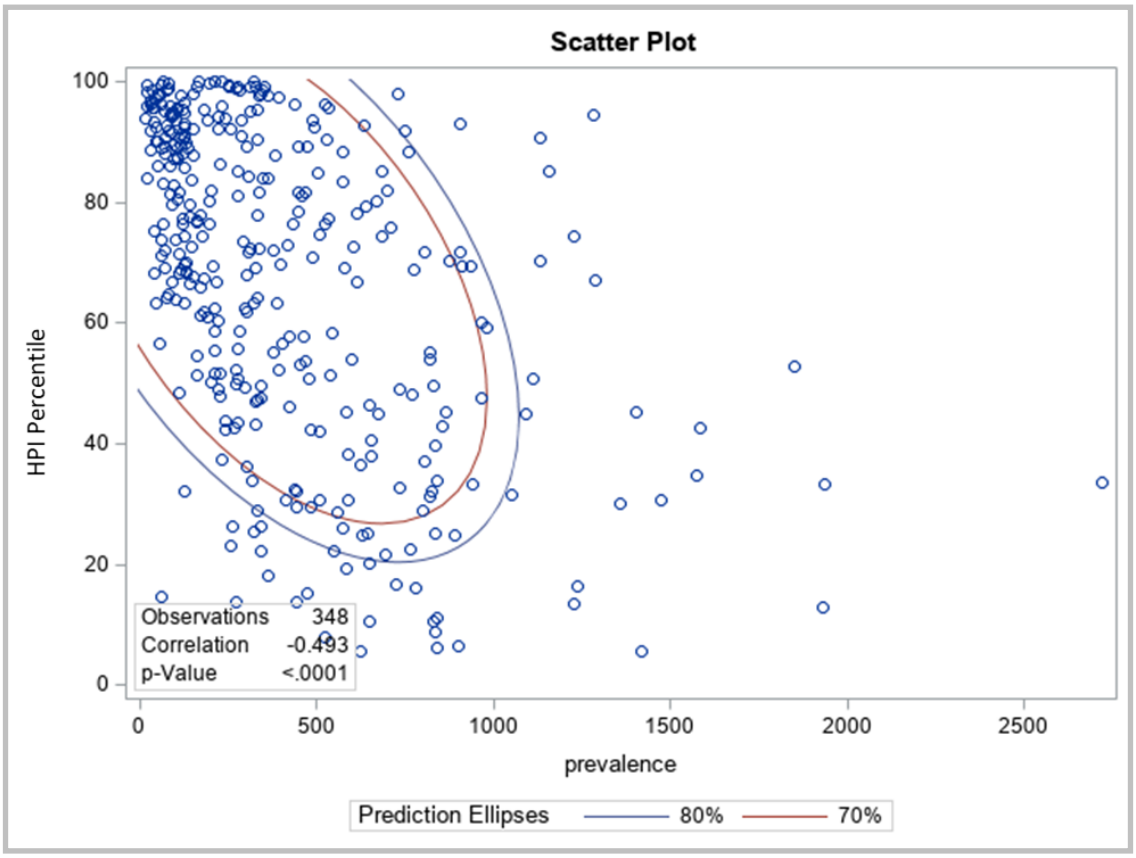
The average HIV prevalence by quintile group was calculated to identify patterns based on HPI quintile. Prevalence had a clear negative correlation with HPI score, with the highest quintile group experiencing the lowest prevalence and the lowest quintile group experiencing the highest prevalence. The same analysis examining median prevalence within each quintile group showed similar findings.

Figure 6.2: Mean Prevalence of HIV by HPI Quintile Group, Year-End 2020



The correlation between HPI percentile value and prevalence was also measured and is displayed in a scatter plot in Figure 6.3. The Pearson correlation coefficient was -0.49, which indicates a moderate negative correlation between HPI percentile and prevalence; this correlation was statistically significant.

Figure 6.3: Scatterplot of HPI Percentile and HIV Prevalence by Census Tract, Year-End 2020



HPI quintile groups were also analyzed for continuum of care measures. The highest quintile group had the highest retention rate at 62.5% while the 3rd and 4th quintile groups had the lowest retention rates at 56.7% and 57.1%, respectively. The correlation between retention rate and HPI percentile was not significant. Median viral suppression was highest in the highest quintile group (80.0%) and lowest in the lowest quintile group (66.5%). Viral suppression had a modest correlation with HPI percentile. The findings suggest that those in higher HPI quintiles generally experience more favorable outcomes along the continuum of care that those in lower quintiles.

Figure 6.4: Median Retention in Care Rate by HPI Quintile Group, Year-End 2020

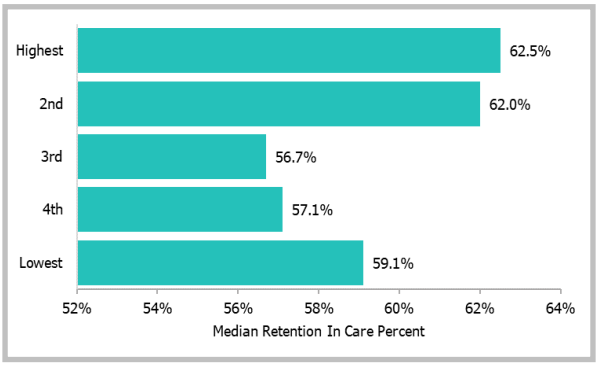
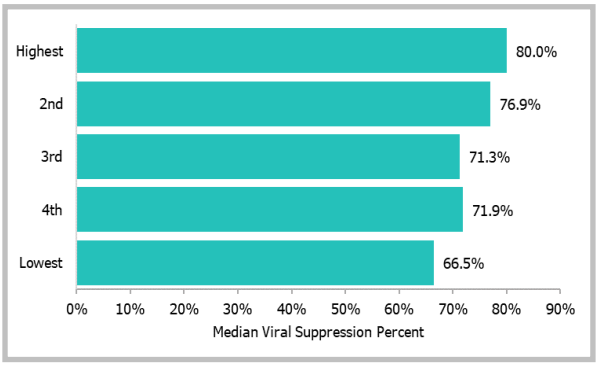


Figure 6.5: Median Viral Suppression Rate by HPI



Appendix A

Technical Notes

Data Sources

All counts and proportions in this report were calculated using data from the Enhanced HIV/AIDS Reporting System (eHARS). Numerators of rates were also obtained from eHARS; denominators were derived using data from the United States Census[40] (2010) and Environmental Systems Research Institute (2012 and later). Mid-year population estimates for intercensal years prior to 2012 as well as all year-end estimates were obtained through linear interpolation. To calculate prevalence of HIV among non-US-born and US-born individuals, estimates of the proportions of non-US-born and US-born in Alameda County were obtained from American Community Survey (ACS) and applied to the Community Assessment, Planning, and Evaluation (CAPE) mid-year population estimates of all people living in Alameda County. PLHIV at the end of 2020 were identified from eHARS. California Healthy Places Index data was obtained from the website.[38]

COVID-19 case data were extracted from the California Reportable Disease Information Exchange (CalREDIE) data distribution portal.

Statistical Analysis

Calculation of Confidence Intervals

All confidence intervals (CI) depicted in the report are at the 95% confidence level. CIs for proportions are calculated on the log odds ("logit") scale and then antilogit-transformed in order to preclude lower limits less than 0% and upper limits greater than 100%. Confidence limits for rates are calculated using a Poisson distribution for counts less than 100 and a binomial distribution for counts of 100 or greater.

Significance Testing and Statistical Modeling

The statistical significance of associations between categorical variables was tested by Pearson's chi square test or Fisher's exact test, as appropriate. Trend analyses were performed using Join Point[41] to model crude rates as a log-linear function of year separately for each stratum of the categorical variable(s); errors were assumed to have Poisson variance and to be independent. Grid search and the modified Bayesian Information Criterion were used to select the best fitting model from among those with zero to four join points at least 2 years apart between 2007 and 2019 (the second and second-to-last years examined).

Data Suppression Rules

0.0.1 Proportions

In accordance with draft guidelines released by the National Center for Health Statistics[42], proportions are considered to be statistically unreliable and are not presented if they meet either of the following criteria:

1. The absolute CI width exceeds 20%.
2. The absolute CI width does not exceed 20%, but the relative CI width (the absolute CI width divided by the lesser of the proportion and its complement) exceeds 120%.

Rates

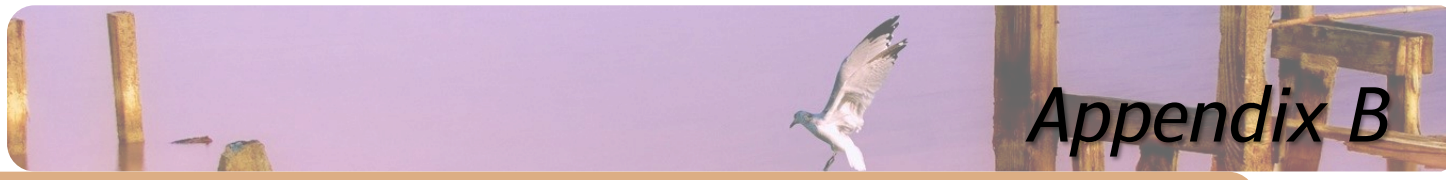
Rates for subpopulations with fewer than 12 cases are considered to be statistically unreliable and were not presented. In these instances, the relative standard error of the rate exceeds 30%.

Death Ascertainment

Alameda County HIV surveillance officials are notified by the local Office of Vital Registration whenever HIV is documented on a death certificate filed in Alameda County. Additionally, the California Office of AIDS periodically matches state HIV registry data to national death databases such as the National Death Index and the Social Security Administration's Death Master File. PLHIV who died outside of Alameda County and were ever associated with Alameda County or whose HIV was not documented on their death certificate are thus generally captured through this process with some delay.

HIV-COVID Coinfection

COVID-19 cases occurring between January 2020 and July 2021 were matched to PLHIV as of year-end 2020 using deterministic and probabilistic methods in Link-King[43], a software package for matching.



Appendix B

Reporting Requirements

The representativeness and accuracy of HIV surveillance data depend on the reliable, complete, and timely reporting of data by health care providers and laboratories in accordance with California law.

Health Care Providers

Title 17, Section 2643.5, "HIV Reporting by Health Care Providers," requires health care providers to report cases of HIV disease (at any stage) to the local health department in the jurisdiction of their practice:

a) Each health care provider that orders a laboratory test used to identify HIV, a component of HIV, or antibodies to or antigens of HIV shall submit to the laboratory performing the test a pre-printed laboratory requisition form which includes all documentation as specified in 42 CFR 493.1105 (57 FR 7162, Feb. 28, 1992, as amended at 58 FR 5229, Jan. 19, 1993) and adopted in Business and Professions Code, Section 1220.

b) The person authorized to order the laboratory test shall include the following when submitting information to the laboratory:
    1. Complete name of patient; and
    2. Patient date of birth (2-digit month, 2-digit day, 4-digit year); and
    3. Patient gender (male, female, transgender male-to-female, or transgender female-to-male); and
    4. Date biological specimen was collected; and
    5. Name, address, telephone number of the health care provider and the facility where services were rendered, if different.

c) Each health care provider shall, within seven calendar days of receipt from a laboratory of a patient's confirmed HIV test or determination by the health care provider of a patient's confirmed HIV test, report the confirmed HIV test to the local Health Officer for the jurisdiction where the health care provider facility is located. The report shall consist of a completed copy of the HIV/AIDS Case Report form.
    1. All reports containing personal information, including HIV/AIDS Case Reports, shall be sent to the local Health Officer or his or her designee by:
        A. courier service, US Postal Service Express or Registered mail, or other traceable mail; or
        B. person-to-person transfer with the local Health Officer or his or her designee.
    2. The health care provider shall not submit reports containing personal information to the local Health Officer or his or her designee by electronic facsimile transmission or by electronic mail or by non-traceable mail.

d) HIV reporting by name to the local Health Officer, via submission of the HIV/AIDS Case Report, shall not supplant the reporting requirements in Article 1 of this Subchapter when a patient's medical

condition progresses from HIV infection to an Acquired Immunodeficiency Syndrome (AIDS) diagnosis.

e) A health care provider who receives notification from an out-of-state laboratory of a confirmed HIV test for a California patient shall report the findings to the local Health Officer for the jurisdiction where the health care provider facility is located.

f) When a health care provider orders multiple HIV-related viral load tests for a patient or receives multiple laboratory reports of a confirmed HIV test, the health care provider shall be required to submit only one HIV/AIDS Case Report, per patient, to the local Health Officer.

g) Nothing in this Subchapter shall prohibit the local health department from assisting health care providers to report HIV cases.

h) Information reported pursuant to this Article is acquired in confidence and shall not be disclosed by the health care provider except as authorized by this Article, other state or federal law, or with the written consent of the individual to whom the information pertains or the legal representative of that individual.

Note: Authority cited: Sections 120125, 120130, 120140, 121022, 131080 and 131200, Health and Safety Code. Reference: Sections 1202.5, 1206, 1206.5, 1220, 1241, 1265 and 1281, Business and Professions Code; and Sections 1603.1, 101160, 120175, 120250, 120775, 120885-120895, 120917, 120975, 120980, 121015, 121022, 121025, 121035, 121085, 131051, 131052, 131056 and 131080, Health and Safety Code.

Laboratories

Title 17, Section 2643.10, "HIV Reporting by Laboratories," requires laboratories to report all HIV-related laboratory tests to the local health department in the jurisdiction of the ordering provider:

a) The laboratory director or authorized designee shall, within seven calendar days of determining a confirmed HIV test, report the confirmed HIV test to the Health Officer for the local health jurisdiction where the health care provider facility is located. The report shall include the
    1. Complete name of patient; and
    2. Patient date of birth (2-digit month, 2-digit day, 4-digit year); and
    3. Patient gender (male, female, transgender male-to-female, or transgender female-to-male); and
    4. Name, address, and telephone number of the health care provider and the facility that submitted the biological specimen to the laboratory, if different; and
    5. Name, address, and telephone number of the laboratory; and
    6. Laboratory report number as assigned by the laboratory; and
    7. Laboratory results of the test performed; and
    8. Date the biological specimen was tested in the laboratory; and
    9. Laboratory Clinical Laboratory Improvement Amendments (CLIA) number.

b)
    1. All reports containing personal information, including laboratory reports, shall be sent to the local Health Officer or his or her designee by:
        A. courier service, US Postal Service Express or Registered mail, or other traceable mail; or

B. person-to-person transfer with the local Health Officer or his or her designee.

2. The laboratory shall not submit reports containing personal information to the local Health Officer or his or her designee by electronic facsimile transmission or by electronic mail or by non-traceable mail.

c) A laboratory that receives incomplete patient data from a health care provider for a biological specimen with a confirmed HIV test, shall contact the submitting health care provider to obtain the information required pursuant to Section 2643.5(b)(1)-(5), prior to reporting the confirmed HIV test to the local Health Officer.

d) If a laboratory transfers a biological specimen to another laboratory for testing, the laboratory that first receives the biological specimen from the health care provider shall report confirmed HIV tests to the local Health Officer.

e) Laboratories shall not submit reports to the local health department for confirmed HIV tests for patients of an Alternative Testing Site or other anonymous HIV testing program, a blood bank, a plasma center, or for participants of a blinded and/or unlinked seroprevalence study.

f) When a California laboratory receives a biological specimen for testing from an out-of-state laboratory or health care provider, the California director of the laboratory shall ensure that a confirmed HIV test is reported to the state health department in the state where the biological specimen originated.

g) When a California laboratory receives a report from an out of state laboratory that indicates evidence of a confirmed HIV test for a California patient, the California laboratory shall notify the local Health Officer and health care provider in the same manner as if the findings had been made by the California laboratory.

h) Information reported pursuant to this Article is acquired in confidence and shall not be disclosed by the laboratory except as authorized by this Article, other state or federal law, or with the written consent of the individual to whom the information pertains or the legal representative of the individual.

Note: Authority cited: Section 1224, Business and Professions Code; and Sections 120125, 120130, 120140, 121022, 131080 and 131200, Health and Safety Code. Reference: Sections 1206, 1206.5, 1209, 1220, 1241, 1265, 1281 and 1288, Business and Professions Code; and Sections 101150, 120175, 120775, 120885-120895, 120975, 120980, 121022, 121025, 121035, 131051, 131052, 131056 and 131080, Health and Safety Code.

Appendix C

Surveillance in Alameda County

California Code of Regulations (CCR) Title 17, Section 2643.5 requires all health care providers (HCP) to report all cases of HIV disease they encounter in their clinical practice to the county/local health jurisdiction in which the encounter occurs. Additionally, CCR Title 17, Section 2643.10 requires all commercial laboratories to report all HIV-related laboratory tests they conduct to the local health jurisdiction of the HCP who ordered the test, providing an additional means by which local health departments may learn of a case of HIV disease.

In November 2015, California adopted the Electronic Laboratory Reporting (ELR) system for laboratories performing HIV testing. HIV test results delivered through ELR meet the statutory and regulatory reporting requirements for HIV test results. HIV-related laboratory results are submitted to the California Department of Public Health (CDPH) and routed to Alameda County for investigation. Establishment of ELR resulted in major changes in the local processing and management of laboratory results for HIV surveillance. Figure A.1 on page 74 illustrates the steps involved in processing lab results, including ELR, for HIV surveillance in Alameda County. As shown in the figure, reported labs are checked against a local database to identify cases not previously reported. Potential new cases are investigated by trained field staff, who visit the office of the HCP that ordered the laboratory test(s) or submitted the lab report and complete a case report using information abstracted from the patient's medical record and obtained from the HCP. For adult cases, standardized case report forms are completed and submitted in the California Reportable Disease Information Exchange (CalREDIE)—the secure CDPH system for electronic disease reporting and surveillance. Hard copies of the Adult Case Report Form have largely been replaced by entry into CalREDIE, but are sometimes used by HCPs to notify the local health jurisdiction. A copy of the Adult Case Report form can be found here: https://www.sccgov.org/sites/phd-p/programs/hiv-prev/Documents/HIV%20Forms/adults-aids-case-form.pdf.[44] Hard copies of death certificates and pediatric HIV cases documented on a paper case report form found here: https://www.sccgov.org/sites/phd-p/programs/hiv-prev/Documents/HIV%20Forms/HIV_Pediatric_Report_Form_DHS_8641_P.pdf[45], are mailed to the CDPH Office of AIDS. All case reports submitted to CDPH are routinely de-identified and transmitted to CDC. When cases reported by different states appear to be the same person, CDC notifies the appropriate states to contact each other directly and determine whether the cases are duplicates.

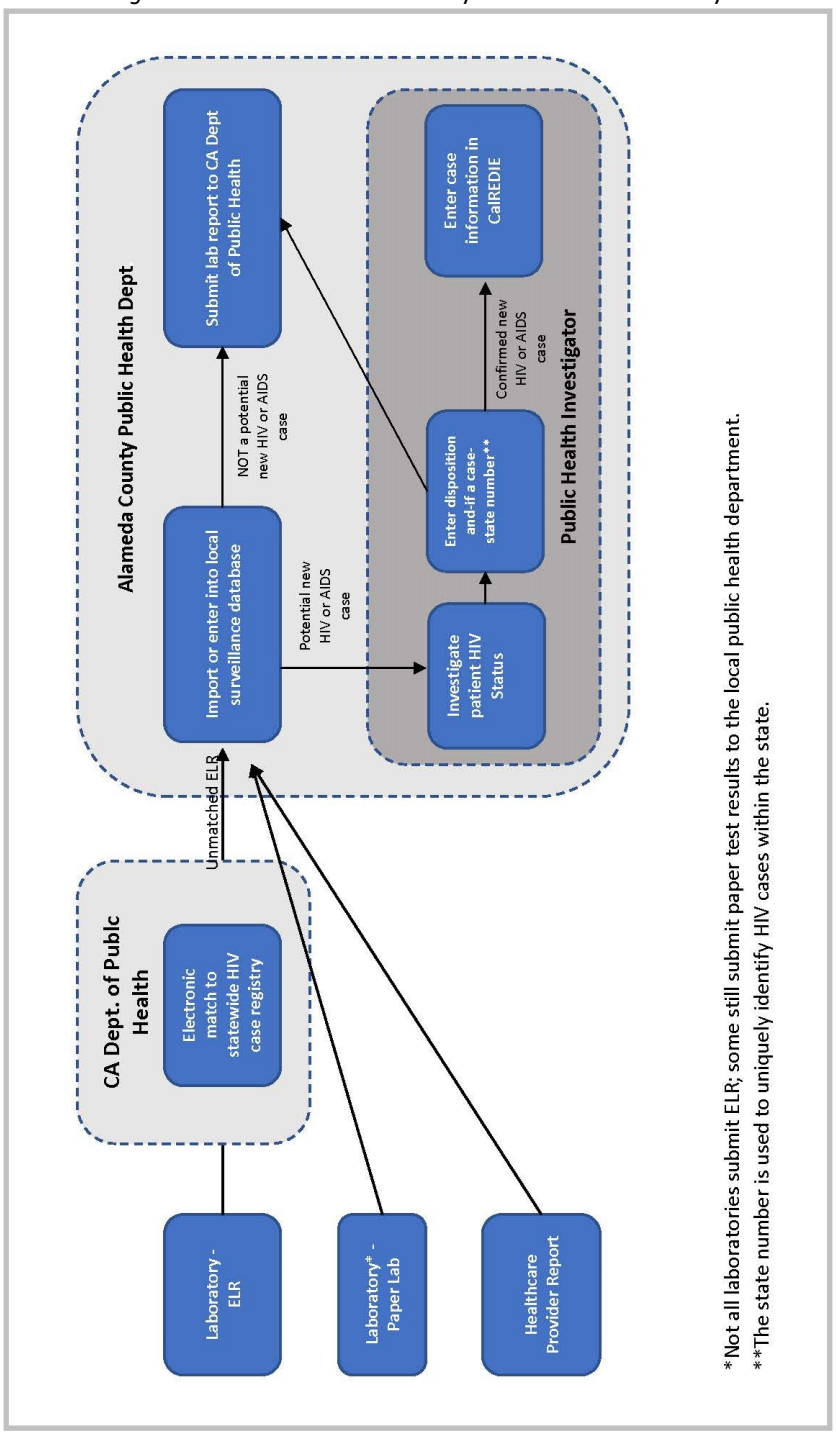
Security and Confidentiality of Data

In accordance with the county's data use and disclosure agreement with CDPH, all data collected in the course of conducting HIV surveillance are used solely for public health purposes. Additionally, administrative, technical, and physical safeguards are in place to ensure the security and confidentiality of these data. All paper records are stored in locked file cabinets in an office with restricted access. Electronic

data transmissions are encrypted and occur over a secure file transfer network. All electronic data are stored in a restricted access directory on a protected server.

HIV Surveillance Workflow

Figure A.1: The HIV Surveillance System in Alameda County

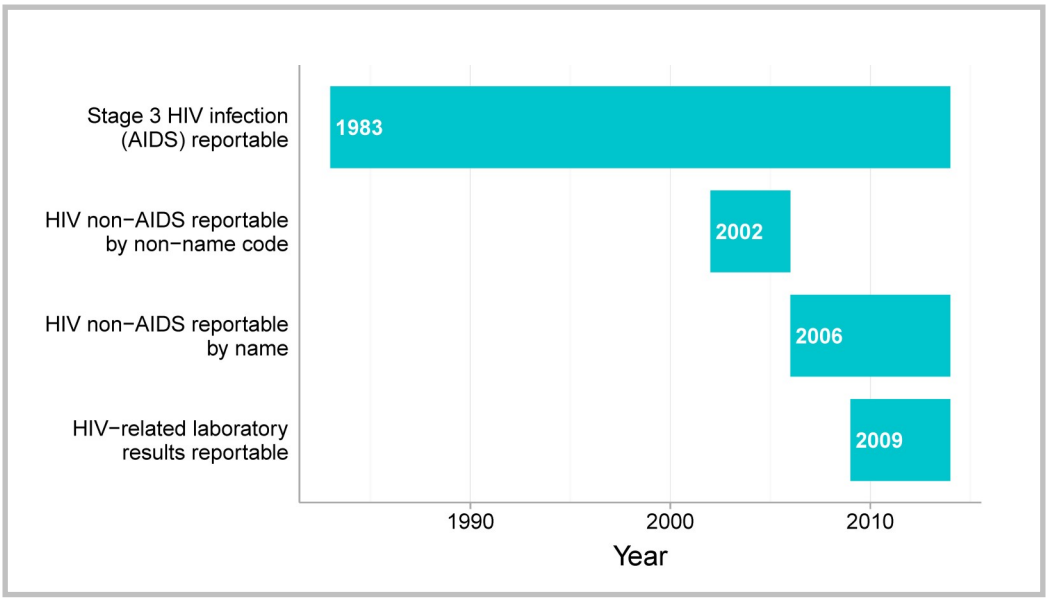


Limitations of Surveillance Data and of County Analysis

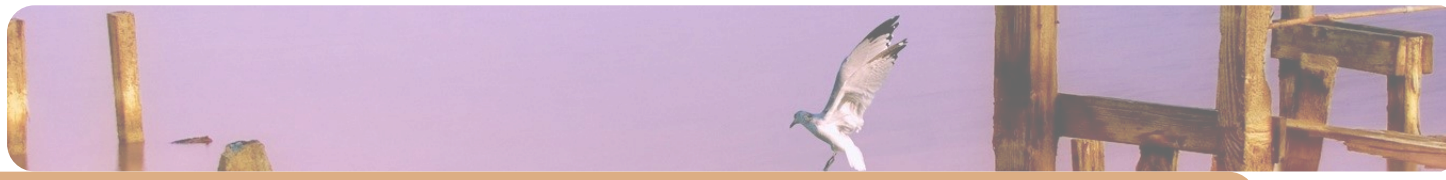
A major strength of HIV surveillance data is that it captures and reflects the entire population of HIV diagnosed individuals. HIV surveillance data are not without their limitations however, which limit the analyses that can be done. These limitations include, but are not limited to:

- **Data quality:** Public health investigators extract required information from medical records for HIV reporting. Some information, such as risk factors or identification as transgender may not have been available in the medical record, elicited from the patient by the HCP, or adequately described. STDs are recognized to be widely under-reported, which may affect the figures reported here.
- **Data quantity:** In small subpopulations, the number of new diagnoses or PLHIV was not large enough to allow certain analyses. Statistical analyses based on small numbers may result in unstable estimates which can be misleading.
- **Timeliness of reporting:** Surveillance data are the product of a long process triggered by a visit to a HCP by an HIV-infected individual and culminating in the entry of case data into the statewide HIV surveillance database at the California Department of Public Health. Intermediate steps include, but are not limited to, laboratory testing, submission of case reports and lab results to the local health department, and investigation of each report. Data preparation, analysis and interpretation take additional time. For these reasons, there can be a 6 to 12-month delay in estimating numbers of diagnoses or PLHIV and in estimating any measures dependent on laboratory test results.
- **History of reporting laws:** The laws mandating the reporting of HIV-related laboratory test results and of cases of HIV disease at its different stages have changed over time, and this impacts our ability to characterize the epidemic at different points in the past. Although AIDS has been reportable since 1983, HIV disease at its earlier stages was not reportable until mid-2002 and even then only by a non-name code. More reliable, name-based data on HIV non-AIDS cases became mandated in 2006, and HIV-related labs became reportable in California in 2009. Consequently, most of analyses are limited to 2006 and later, and analyses relying on laboratory reporting are limited to 2010 and later.

Figure A.2: Timeline of Mandated HIV Reporting in California



- **Diagnosis date assigned to non-US-born cases:** A small number of non-US-born PLHIV may have been initially diagnosed with HIV in another country before arriving in the US, but due to the absence of verified information on date of initial diagnosis, their diagnosis date in the surveillance data reflects the earliest date of HIV diagnosis in the US. As a consequence new diagnoses and late diagnoses may be overestimated in our data.
- **Social Determinants of Health:** Analyses of social determinants of health primarily used census tract level data provided by the Public Health Alliance of Southern California and not individual level data. As is the case with ecological methods, a person's assigned category regarding household poverty, educational attainment, or other variables related to geographic location of residence may not accurately reflect their individual situation.



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