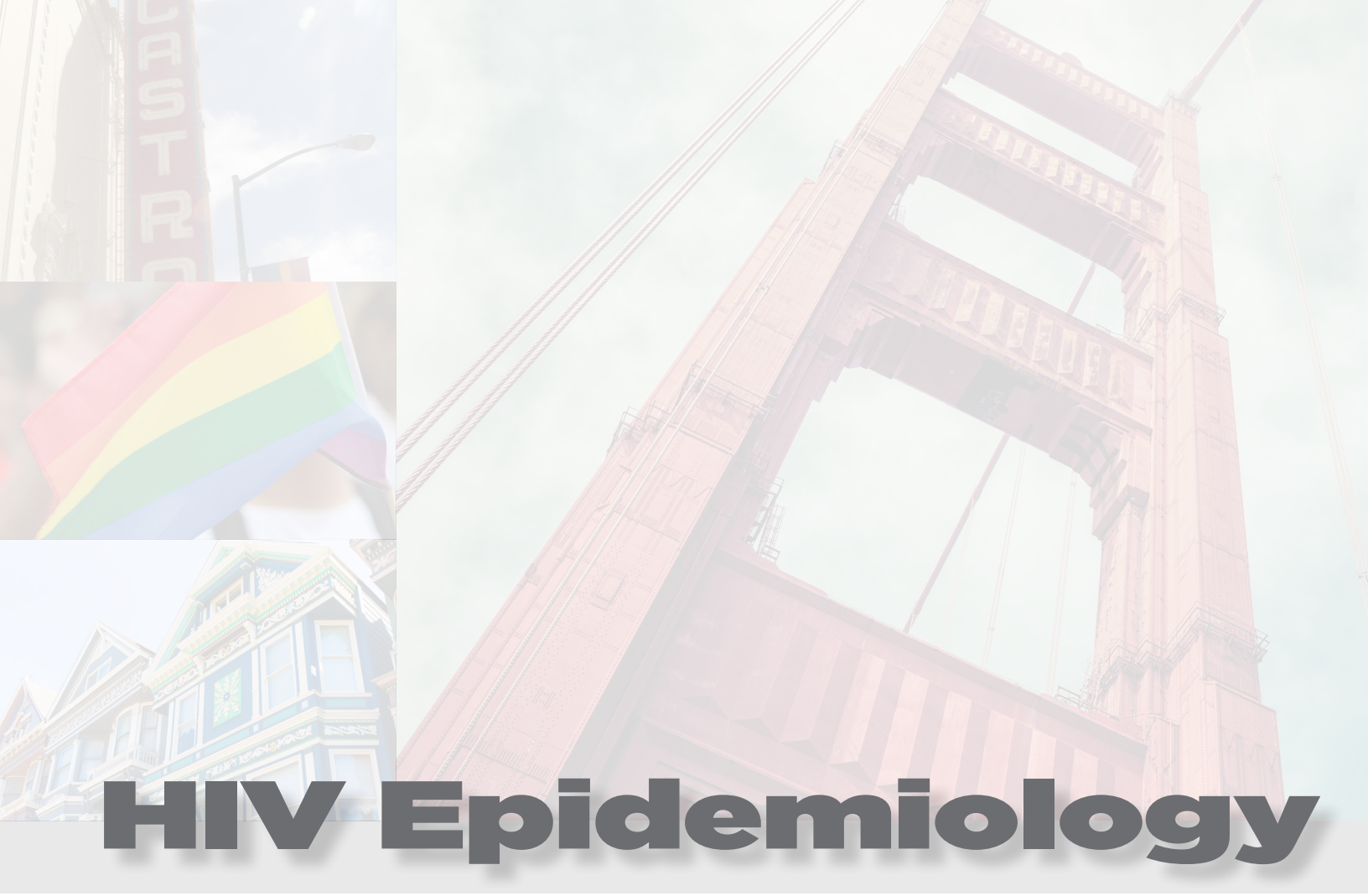
HIV Epidemiology

Annual Report

2015

San Francisco
Department of Public Health
Population Health Division



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Contents

List of Figures and Tables

1. Overview of HIV in San Francisco

2. Trends in HIV Diagnoses

3. Spectrum of Engagement in HIV Prevention and Care

16. Geographic Distribution of HIV

Abbreviations

ART	Antiretroviral therapy
CDC	Centers for Disease Control and Prevention
HSF	Healthy San Francisco
MMP	Medical Monitoring Project
MSM	Men who have sex with men
MSM-PWID	Men who have sex with men and who also inject drugs
NHBS	National HIV Behavioral Surveillance
OOJ	Out-of-jurisdiction
PLWH	Persons living with HIV
PrEP	Pre-exposure prophylaxis
PWID	People who inject drugs
SFDPH	San Francisco Department of Public Health
STD	Sexually transmitted diseases

Introduction

The year 2016 marks a time of increased optimism in HIV treatment and prevention. Worldwide, people are beginning to envision a possible end to AIDS. The San Francisco community has set a high bar by pledging to be the first city in the United States to achieve "Getting to Zero: zero new HIV infections; zero HIV deaths; and zero HIV stigma."

In 2015, we reported on the progress towards the goal of a 90% reduction in new HIV infections and deaths in San Francisco by 2020 and we continue to update that progress with this report. Trends in reducing new HIV infections, increasing linkage to care, and increasing the number of people living with HIV who have HIV viral suppression have continued. In addition, we have refined some of the HIV indicators and added new ones so that we can report on progress with more detail and precision (in section 3). For example, we now report on the timeliness of linkage to care following diagnosis using both a one-month and three-month time frame, the number of days from HIV diagnosis to initiation of therapy, and the CD4 count at treatment initiation in addition to the CD4 count at HIV diagnosis. To obtain an understanding of timing of HIV diagnosis in relation to HIV infection, we included data on persons diagnosed early in the course of HIV infection (stage 0) as well as trends in persons with late HIV diagnosis (section 1). Additional data regarding causes of death among persons with HIV are also included in this report (section 5). We assessed gender disparities in leading causes of death and looked more closely at the increase in deaths related to drug overdoses by adding an analysis comparing trends in drug-related deaths among people living with HIV to people without HIV in San Francisco.

While we remain optimistic about the progress, we are reminded by the theme of the 2016 International AIDS Conference in Durban South Africa "Access Equity Rights Now" and note that significant obstacles that impede effective HIV treatment and prevention continue in some populations. Unfortunately, in San Francisco we still see inequalities in access to care and health outcomes. This report highlights several disparities in engagement in HIV care and serves as a reminder that more work needs to be done to address the social determinants of heath that adversely impact health outcomes among persons living with HIV in San Francisco.

Our report is constantly evolving in response to the rapidly changing landscape of HIV and to questions and requests from our community partners. Our aim is to be responsive, informative, and as comprehensive as possible. We encourage feedback and requests for additional information or analyses that would be helpful to your work and interests.

1 Overview of HIV in San Francisco

Since the epidemic began, HIV/AIDS surveillance in San Francisco has been conducted through active and passive methods and routinely evaluated. As of December 31, 2015, there were 15,995 San Francisco residents diagnosed and living with HIV (Table 1.1). These persons comprised 13% of California's living HIV cases and 2% of persons living with HIV (PLWH) reported nationally. Compared to cases reported in California and the United States, San Francisco living HIV cases were more likely to be male and white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM-PWID).

Compared to persons newly diagnosed with HIV nationally, newly diagnosed people with HIV in San Francisco were more likely to be male, white, and MSM. Compared to all San Franciscans living with HIV, newly diagnosed persons in San Francisco had similar proportions by gender distribution, a greater proportion of African Americans, Latinos, and Asian/Pacific Islanders than other racial/ethnic groups, and a smaller proportion of MSM-PWID than other transmission risk groups. The number of newly diagnosed people with HIV may be revised upward in future reports due to delays in reporting.

Table 1.1 Characteristics of persons living with HIV and persons newly diagnosed with HIV infection in San Francisco, California and the United States

	Living HIV Cases			Newly Diagnosed HIV Cases	
	San Francisco[1] (N = 15,995) %	California[2] (N = 119,878) %	United States[3] (N = 949,331) %	San Francisco[1], 2015 (N = 255) %	United States[3], 2014 (N = 40,493) %
Gender					
Male	92%	87%	76%	88%	81%
Female	6%	12%	24%	9%	19%
Transgender[4]	2%	1%	--	2%	--
Race/Ethnicity					
White	60%	43%	31%	42%	27%
African American	12%	18%	42%	17%	43%
Latino	19%	33%	22%	26%	24%
Asian/Pacific Islander	6%	4%	1%	12%	2%
Native American	<1%	<1%	<1%	<1%	1%
Other/Unknown	2%	2%	3%	3%	2%
Transmission Category					
MSM	74%	66%	43%	72%	54%
PWID	6%	7%	13%	7%	3%
MSM-PWID	15%	8%	5%	10%	2%
Heterosexual	3%	9%	19%	6%	14%
Other/Unidentified	2%	10%	20%	6%	27%

1 San Francisco data are reported through April 6, 2016 for cases diagnosed through December 31, 2015.

2 California data are reported through December 2014, for cases living as of December 31, 2013.

3 U.S. data are reported through July 31, 2015 and reflect cases diagnosed through December 31, 2014. U.S. data reflect unadjusted numbers for 50 states and 6 dependent areas and may be found in the CDC HIV Surveillance Report, 2014; vol. 26. http://www.cdc.gov/hiv/library/reports/surveillance/. Published November 2015.

4 Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

The number of San Francisco residents diagnosed with advanced HIV infection (stage 3 or AIDS) reached a peak of 2,329 in 1992 and has declined in all subsequent years (Figure 1.1). Beginning in 1995, the number of deaths among people living with stage 3 diagnosis has decreased dramatically due to effective combination antiretroviral therapies (ART). From 1999 the number of new stage 3 diagnoses and the number of deaths have continued to decline but at a slower rate than from 1995 to 1998. Beginning in 2013, the number of deaths among people with stage 3 diagnosis has exceeded the number of new stage 3 diagnoses which may reflect the impact of pre-exposure prophylaxis, behavioral interventions to prevent HIV transmission, and use of ART that both reduces the risk of HIV transmission and disease progression among those infected. The result of declining deaths is the continued increase in the number of San Franciscans living with stage 3 HIV infection rose from 1980 through 2012 and then modestly declined. By the end of 2015, there were 9,454 San Francisco residents living with stage 3 HIV infection.

The number of deaths in 2014 and 2015 may be incomplete because of the lag time for obtaining death data from state and national death registry matches. In addition, the case definition for HIV infection stage 3 was updated in 2014, and persons who have a lower CD4 T-lymphocyte percentage (<14%) but whose CD4 count >200 cells/μL are no longer considered as stage 3 cases (see Technical Notes "Stage of Disease at Diagnosis of HIV Infection"). This change in definition may have reduced the number of people diagnosed with stage 3 in 2014 and 2015.

Figure 1.1 HIV infection stage 3 (AIDS) cases, deaths, and prevalence, 1980-2015, San Francisco

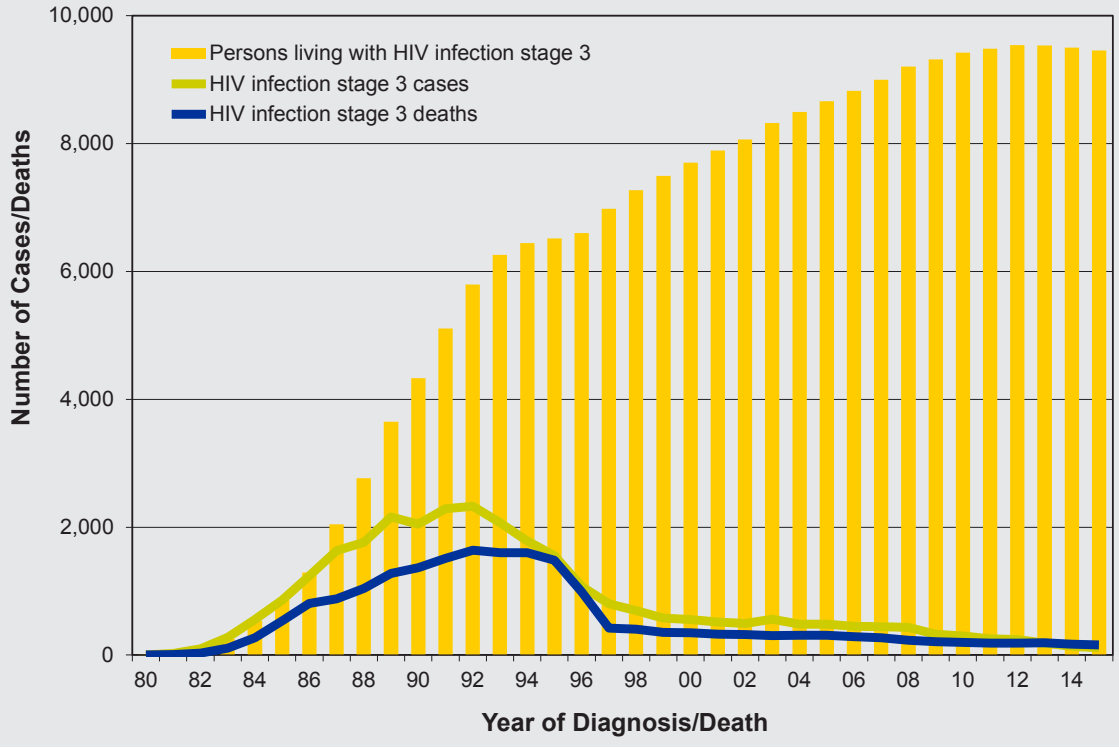
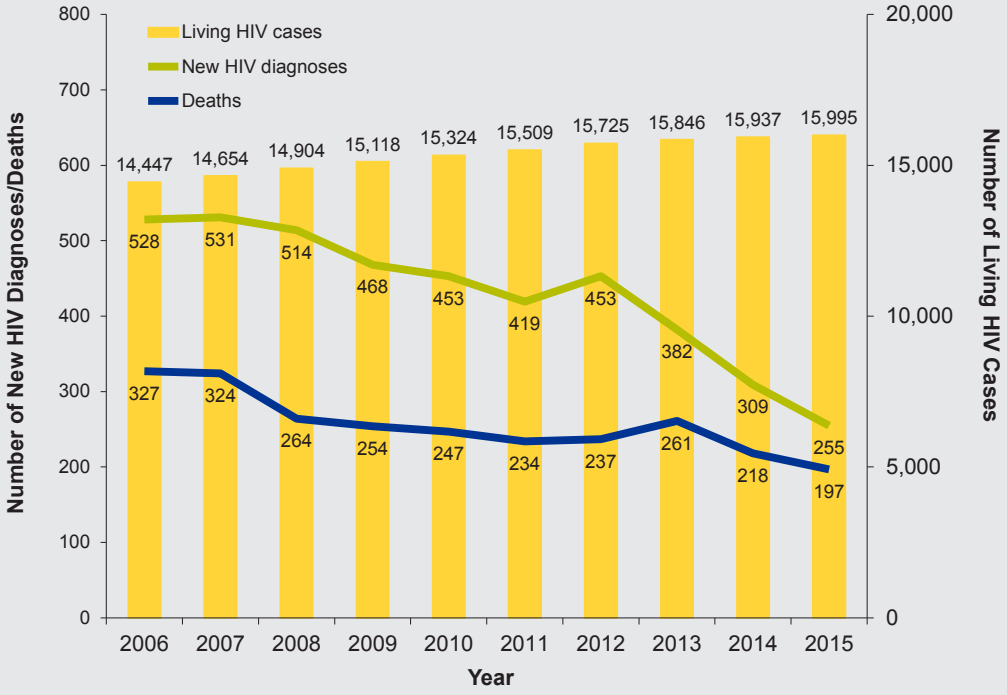


Figure 1.2 illustrates the number of persons newly diagnosed with HIV (green line), number of deaths each year (blue line), and number of PLWH (yellow bars) between 2006 and 2015. Reporting of HIV cases (except for HIV infection stage 3 cases) prior to 2006 is incomplete because name-based HIV case reporting was not in place until 2006. The number of new HIV diagnoses shown by year includes persons who were newly diagnosed with HIV in that year, persons initially diagnosed with HIV infection stage 3 (AIDS), and persons initially diagnosed with HIV (stages 0, 1, 2, or without staging information reported) and developed stage 3 in a later year.

The number of new HIV diagnoses declined from 528 in 2006 to 255 in 2015. The number of deaths declined from 327 in 2006 to 197 in 2015, however death estimates for 2014 and 2015 may be underestimated due to reporting delays in deaths from state and national death registries. Also for recent years, the number of cases diagnosed may be underestimated due to reporting delays.

The number of PLWH includes persons who were diagnosed with HIV during or prior to the year shown and not known to have died by the end of that year. The number of PLWH increased from 14,447 in 2006 to 15,995 in 2015. The increasing number of PLWH is a result of a steady addition of newly diagnosed cases over time coupled with a decline in deaths among PLWH in each year. These data only include people who have been diagnosed with HIV (all disease stages) and reported to the health department. People who are unaware of their HIV infection and persons diagnosed with an anonymous HIV test are not included unless they also tested confidentially or entered care in San Francisco. Therefore these figures may underestimate the true prevalence and incidence of HIV infection in San Francisco.

Figure 1.2 New HIV diagnoses[1], deaths, and prevalence, 2006-2015, San Francisco



1 See Technical Notes "Date of Initial HIV Diagnosis."

Table 1.2 shows the characteristics of persons newly diagnosed with HIV between 2006 and 2015. The majority were male, white, age 30-49 years, and MSM. Trends in race/ethnicity distributions show small increases in proportions of Latinos and Asian/Pacific Islanders and declines in proportions of whites since 2012. There was an increase in the proportion of African Americans diagnosed with HIV in 2015. The proportion of new diagnoses among persons aged 25-29 years also increased in recent years, beginning in 2013. In 2015, the proportion of female diagnoses increased to 9% from 4% in the previous year. No children (<13 years) were diagnosed with HIV during these years.

Table 1.2 Trends in persons newly diagnosed with HIV infection by demographic and risk characteristics, 2006-2015, San Francisco

	Year of Initial HIV Diagnosis[1]									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Number	528	531	514	468	453	419	453	382	309	255
Gender										
Male	91%	86%	89%	89%	89%	87%	94%	92%	94%	88%
Female	7%	9%	7%	6%	8%	10%	5%	6%	4%	9%
Transfemale[2]	2%	5%	3%	5%	3%	4%	1%	3%	2%	2%
Race/Ethnicity										
White	55%	51%	49%	49%	49%	53%	50%	46%	43%	42%
African American	14%	15%	15%	14%	14%	16%	10%	13%	11%	17%
Latino	21%	20%	23%	24%	24%	20%	24%	25%	27%	26%
Asian/Pacific Islander	6%	9%	8%	8%	8%	8%	12%	12%	14%	12%
Native American	1%	<1%	<1%	<1%	<1%	<1%	1%	1%	<1%	<1%
Multi-race	3%	5%	4%	4%	4%	4%	3%	3%	5%	2%
Unknown	0%	0%	0%	<1%	<1%	<1%	<1%	1%	0%	<1%
Age at HIV Diagnosis (years)										
13 - 17	0%	<1%	1%	<1%	1%	<1%	0%	0%	1%	1%
18 - 24	12%	10%	11%	12%	12%	11%	13%	14%	12%	13%
25 - 29	11%	19%	15%	14%	14%	16%	16%	20%	17%	23%
30 - 39	34%	35%	35%	30%	31%	27%	31%	29%	30%	30%
40 - 49	28%	24%	29%	26%	28%	31%	29%	25%	24%	22%
50+	14%	11%	9%	17%	14%	16%	12%	13%	17%	11%
Transmission Category										
MSM	69%	65%	72%	69%	64%	72%	78%	77%	74%	72%
PWID	7%	8%	6%	5%	8%	7%	4%	5%	7%	7%
MSM-PWID	17%	17%	13%	17%	15%	13%	10%	11%	12%	10%
Heterosexual	5%	8%	6%	5%	8%	6%	6%	4%	3%	6%
Other/Unidentified	2%	3%	3%	4%	4%	3%	3%	2%	4%	6%

1 Data include persons diagnosed with HIV infection in any stage and reported as of April 6, 2016. Percentages may not add to 100% due to rounding. See Technical Notes "Date of Initial HIV Diagnosis."

2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

The number of PLWH continues to increase due to the influx of new HIV infections combined with longer life after diagnosis. Persons were counted as living in a year if their HIV diagnosis date was in or before that year and they were known to be alive at the end of the year. Demographic and risk characteristics of PLWH remained mostly stable between 2012 and 2015; cases were predominately white, aged 50 years and older, and MSM (including MSM-PWID) (Table 1.3). This table exhibits the aging of PLWH: the proportion of persons aged 50 years and older increased from 52% to 60% between 2012 and 2015, while the proportions of persons aged 40-49 years decreased.

Table 1.3 Trends in persons living with HIV by demographic and risk characteristics, 2012-2015[1], San Francisco

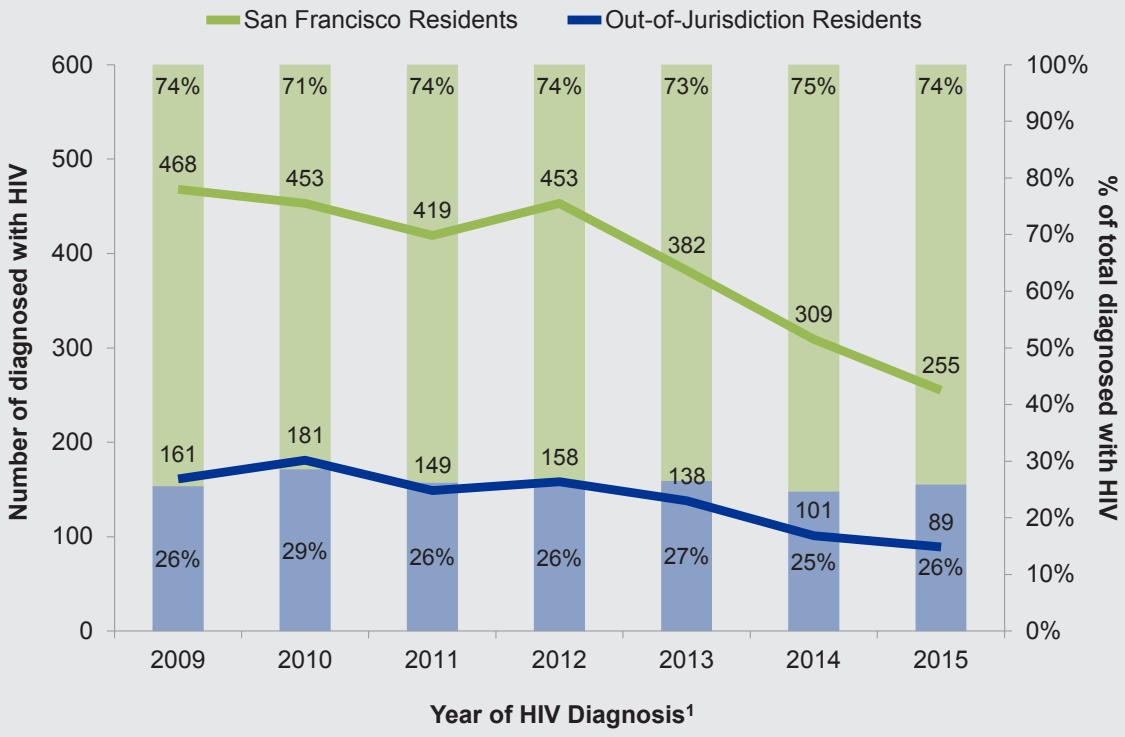
	2012		2013		2014		2015	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	14,433	(92)	14,561	(92)	14,665	(92)	14,715	(92)
Female	914	(6)	907	(6)	899	(6)	902	(6)
Transfemale[2]	378	(2)	378	(2)	373	(2)	378	(2)
Race/Ethnicity								
White	9,588	(61)	9,613	(61)	9,626	(60)	9,622	(60)
African American	2,010	(13)	2,009	(13)	1,992	(12)	1,997	(12)
Latino	2,824	(18)	2,883	(18)	2,933	(18)	2,976	(19)
Asian/Pacific Islander	829	(5)	870	(5)	909	(6)	932	(6)
Native American	73	(<1)	73	(<1)	74	(<1)	75	(<1)
Multi-race	395	(3)	390	(2)	395	(2)	384	(2)
Unknown	6	(<1)	8	(<1)	8	(<1)	9	(<1)
Age in Years (at end of each year)								
0 - 12	3	(<1)	3	(<1)	3	(<1)	3	(<1)
13 - 17	9	(<1)	4	(<1)	3	(<1)	5	(<1)
18 - 24	156	(1)	151	(1)	130	(1)	127	(1)
25 - 29	473	(3)	475	(3)	456	(3)	425	(3)
30 - 39	1,937	(12)	1,889	(12)	1,861	(12)	1,809	(11)
40 - 49	5,131	(33)	4,762	(30)	4,351	(27)	3,961	(25)
50 - 59	5,325	(34)	5,559	(35)	5,769	(36)	5,887	(37)
60 - 69	2,284	(15)	2,538	(16)	2,792	(18)	3,092	(19)
70+	407	(3)	465	(3)	572	(4)	686	(4)
Transmission Category								
MSM	11,505	(73)	11,651	(74)	11,756	(74)	11,832	(74)
PWID	989	(6)	961	(6)	945	(6)	925	(6)
MSM-PWID	2,439	(16)	2,427	(15)	2,416	(15)	2,395	(15)
Heterosexual	520	(3)	531	(3)	532	(3)	542	(3)
Transfusion/Hemophilia	25	(<1)	25	(<1)	25	(<1)	25	(<1)
Other/Unidentified	247	(2)	251	(2)	263	(2)	276	(2)
Total	**15,725**		**15,846**		**15,937**		**15,995**	

1 Persons living with HIV at the end of each year.

2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

In addition to reporting HIV cases who were residents of San Francisco at time of diagnosis, the San Francisco Department of Public Health (SFDPH) reports cases who resided outside San Francisco but were diagnosed by a provider or facility within San Francisco (out-of-jurisdiction residents). Figure 1.3 compares the annual case counts and trends of San Francisco residents and OOJ residents at diagnosis from 2009 to 2015. Case counts for recent years may be revised upward due to reporting delays. These data show that among all new cases reported to the SFDPH, approximately 25% resided outside of San Francisco at the time of diagnosis and this has been relatively stable overtime.

Figure 1.3 New San Francisco HIV cases and new out-of-jurisdiction HIV cases diagnosed in San Francisco, 2009-2015, San Francisco



1 See Technical Notes "Date of Initial HIV Diagnosis."

The overall number of PLWH in San Francisco is affected by 1) out-migration: San Francisco residents at the time of diagnosis who later moved out of San Francisco, and 2) in-migration: OOJ residents at the time of diagnosis who received care in San Francisco. As of December 31, 2015, 15,995 San Francisco residents at diagnosis were still alive. Thirty-two percent (N=5,158) of those residents were known to have moved out of San Francisco, and 10,837 San Francisco residents at diagnosis were still living in the city. Additionally, more than 4,000 OOJ residents received care in San Francisco during 2015 (Table 1.4).

After excluding persons that had moved out of San Francisco, the demographic and risk distribution of PLWH still in San Francisco was very similar to all living San Francisco residents. A greater proportion of OOJ residents receiving care in San Francisco were under 40 years and a smaller proportion were over age 50 compared to San Francisco residents. OOJ residents had a higher proportion of MSM and a lower proportion of MSM-PWID compared to San Francisco residents.

Table 1.4 Characteristics of persons living with HIV as of December 2015 by residence status, San Francisco

	All living SF residents at diagnosis		SF residents at diagnosis, still in SF[1]		OOJ residents at diagnosis, care in SF[2]	
	Number	(%)	Number	(%)	Number	(%)
Gender						
Male	14,715	(92)	9,881	(91)	3,817	(93)
Female	902	(6)	671	(6)	227	(6)
Transfemale[3]	378	(2)	285	(3)	79	(2)
Race/Ethnicity						
White	9,622	(60)	6,255	(58)	2,330	(57)
African American	1,997	(12)	1,377	(13)	627	(15)
Latino	2,976	(19)	2,180	(20)	769	(19)
Asian/Pacific Islander	932	(6)	714	(7)	228	(6)
Native American	75	(<1)	52	(<1)	16	(<1)
Other/Unknown	393	(2)	259	(2)	153	(4)
Age in Years (at end of each year)						
0 - 12	3	(<1)	<5	(<1)	5	(<1)
13 - 17	5	(<1)	<5	(<1)	5	(<1)
18 - 24	127	(1)	89	(1)	73	(2)
25 - 29	425	(3)	320	(3)	218	(5)
30 - 39	1,809	(11)	1,237	(11)	708	(17)
40 - 49	3,961	(25)	2,695	(25)	1,035	(25)
50 - 59	5,887	(37)	3,884	(36)	1,444	(35)
60 - 69	3,092	(19)	2,107	(19)	533	(13)
70+	686	(4)	499	(5)	102	(2)
Transmission Category						
MSM	11,832	(74)	7,868	(73)	3,187	(77)
PWID	925	(6)	676	(6)	195	(5)
MSM-PWID	2,395	(15)	1,675	(15)	414	(10)
Heterosexual	542	(3)	400	(4)	168	(4)
Transfusion/Hemophilia	25	(<1)	12	(<1)	11	(<1)
Other/Unidentified	276	(2)	206	(2)	148	(4)
Total	**15,995**		**10,837**		**4,123**	

1 PLWH who were San Francisco residents at diagnosis and not known to have moved out of San Francisco.
2 PLWH who were OOJ residents at diagnosis and received care in San Francisco in 2015.
3 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Among living male PLWH diagnosed in San Francisco, white MSM comprised the largest group (51%). White and African American male HIV cases had similar age distributions at the end of 2015, while Latino, Asian/Pacific Islander, and Native American males were younger than whites and African Americans (Table 1.5).

Among living female PLWH diagnosed in San Francisco, whites and African Americans made up the majority. Injection drug use was the predominant transmission category for white and African American women while heterosexual sex was the predominant transmission category for Latinas, Asian/Pacific Islander, and Native American women. African American females were older than other female racial/ethnic groups with 64% age 50 years or older compared to whites (56%), Latinas (50%), and Asian/Pacific Islanders and Native Americans (43%).

Table 1.5 Characteristics of persons living with HIV as of December 2015, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number[1]
Male									
Transmission Category									
MSM	7,557	(81)	884	(58)	2,181	(82)	763	(85)	11,626
PWID	187	(2)	214	(14)	61	(2)	20	(2)	495
MSM-PWID	1435	(15)	307	(20)	321	(12)	80	(9)	2,229
Heterosexual	30	(<1)	67	(4)	52	(2)	13	(1)	166
Transfusion/Hemophilia	6	(<1)	3	(<1)	2	(<1)	3	(<1)	14
Other/Unidentified	67	(1)	42	(3)	49	(2)	19	(2)	185
Age in Years (at end of 2015)									
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)	1
13 - 17	0	(0)	2	(<1)	1	(<1)	0	(0)	3
18 - 24	26	(<1)	24	(2)	31	(1)	22	(2)	107
25 - 29	133	(1)	53	(3)	134	(5)	45	(5)	376
30 - 39	728	(8)	140	(9)	481	(18)	182	(20)	1597
40 - 49	2,070	(22)	326	(21)	806	(30)	301	(34)	3,621
50 - 59	3,674	(40)	554	(37)	867	(33)	243	(27)	5,446
60 - 64	1,342	(14)	247	(16)	189	(7)	53	(6)	1,857
65+	1,309	(14)	171	(11)	157	(6)	52	(6)	1,707
Male Subtotal	**9,282**		**1,517**		**2,666**		**898**		**14,715**
Female									
Transmission Category									
PWID	155	(58)	186	(53)	59	(31)	15	(22)	430
Heterosexual	85	(32)	139	(39)	97	(52)	44	(64)	370
Transfusion/Hemophilia	5	(2)	2	(1)	2	(1)	2	(3)	11
Other/Unidentified	20	(8)	26	(7)	30	(16)	8	(12)	91
Age in Years (at end of 2015)									
0 - 12	0	(0)	1	(<1)	1	(1)	0	(0)	2
13 - 17	0	(0)	1	(<1)	1	(1)	0	(0)	2
18 - 24	2	(1)	4	(1)	8	(4)	1	(1)	18
25 - 29	7	(3)	8	(2)	7	(4)	2	(3)	24
30 - 39	37	(14)	33	(9)	38	(20)	13	(19)	130
40 - 49	72	(27)	80	(23)	40	(21)	23	(33)	221
50 - 59	103	(39)	144	(41)	52	(28)	21	(30)	328
60 - 64	21	(8)	46	(13)	21	(11)	6	(9)	95
65+	23	(9)	36	(10)	20	(11)	3	(4)	82
Female Subtotal	**265**		**353**		**188**		**69**		**902**
Transfemale[2]	**75**		**127**		**122**		**40**		**378**
Total	**9,622**		**1,997**		**2,976**		**1,007**		**15,995**

1 Includes persons with multiple race or whose racial/ethnic information is not available.

2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population. See Technical Notes "Transgender Status."

Persons diagnosed with stage 0 HIV infection

In 2014, the United States Centers for Disease Control and Prevention revised the surveillance case definition and staging to include stage 0, and harmonized the staging criteria for adults and adolescents with those for children (See Technical Notes "Stage of Disease at Diagnosis of HIV Infection"). Stage 0 infection is designed to capture early HIV infection. Early HIV infection includes acute HIV infection (generally infection of two weeks or less) and infections of 180 days or less. The criteria for stage 0 infection can be established by a testing history of a confirmed HIV positive test that occurs 180 days or less after a negative or indeterminate test for HIV infection or a laboratory documentation of a positive p24 antigen or HIV nucleic acid test before or after a negative or indeterminate HIV antibody test or a positive nucleic acid test and a negative HIV antibody test. Persons classified as having stage 0 infection must not meet the criteria for stage 3 disease (AIDS).

For persons diagnosed with HIV in 2014 who were residents of San Francisco, we measured the number of and the demographic and transmission risk characteristics of stage 0 HIV diagnoses and compared these with persons diagnosed at stages 1 through 3 or with unknown stage at diagnosis. For this analysis, the HIV diagnosis date is based on a confirmed laboratory HIV test in 2014 regardless of whether the patient had an earlier self-report of HIV positive date. Of the 334 cases diagnosed in 2014, 56 (17%) were diagnosed at stage 0, 212 (63%) were stage 1-3, and 66 (20%) cases could not be staged due to not having a CD4 T-lymphocyte count within 30 days of diagnosis reported. Stage 0 cases may be underestimated due to under-reporting of negative and indeterminate HIV laboratory test results.

The majority of stage 0 cases were male, 30 years and older at diagnosis, and MSM non-PWID (Table 1.6). Whites made up half of stage 0 cases, followed by Latinos who made up a quarter of stage 0 cases. Compared to cases diagnosed with stages 1-3, or cases for whom the stage was unknown, stage 0 cases had a larger proportion who were transfemale, MSM, and white. A higher proportion of stage 0 cases were less than 30 years or aged 40-49 years at time of diagnosis than cases diagnosed at stages 1-3 or with an unknown stage.

Table 1.6 Characteristics of persons diagnosed with stage 0 HIV infection in 2014, San Francisco

	Stage 0 at diagnosis in 2014		Stage 1-3 or unknown stage at diagnosis in 2014	
	Number	(%)	Number	(%)
Total Number	**56**	**(100)**	**278**	**(100)**
Gender				
Male	50	(89)	263	(95)
Female	3	(5)	11	(4)
Transfemale	3	(5)	4	(1)
Race/Ethnicity				
White	28	(50)	115	(41)
African American	4	(7)	32	(12)
Latino	14	(25)	82	(29)
Asian/Pacific Islander	6	(11)	36	(13)
Other/Unknown	4	(7)	13	(5)
Age at HIV diagnosis (years)				
13-17	1	(2)	1	(<1)
18-24	7	(13)	28	(10)
25-29	10	(18)	44	(16)
30-39	18	(32)	83	(30)
40-49	18	(32)	63	(23)
50+	2	(4)	59	(21)
Transmission Category				
MSM	47	(84)	206	(74)
PWID	3	(5)	16	(6)
MSM-PWID	5	(9)	32	(12)
Heterosexual	1	(2)	10	(4)
Other/Unidentified	0	(0)	14	(5)

Persons diagnosed with late stage HIV infection

Late HIV diagnosis was defined as having a stage 3 (AIDS) diagnosis within three months of HIV diagnosis. The date of HIV diagnosis used to assess late HIV diagnosis is based on a confirmed laboratory HIV test and does not take into account patient self-report of HIV infection. The proportion of persons newly diagnosed with HIV whose diagnosis occurred late in the stage of HIV disease decreased from 21% in 2012 to 16% in 2014 (Table 1.7 on page 11).

Declines occurred in all genders with the greatest declines occurring in women where the proportion of late diagnoses declined from 36% of new diagnoses in 2012 to seven percent in 2014 and in transwomen where the proportion of late diagnoses declined from 40% in 2012 to zero cases in 2014. Although late diagnoses declined among whites, there were increases in late diagnoses among African Americans (from 17% in 2012 to 19% in 2013 and to 22% in 2014). Late diagnoses among Latinos decreased from 2012 to 2013 but increased from 2013 to 2014 although the proportion of cases that were diagnosed late was lower in 2014 than in 2012. Late diagnoses among Asian/Pacific Islanders increased from 2012 to 2013 but decreased in 2014 to levels lower than those observed in 2012. Among persons with other or unknown race/ethnicity, the proportion of cases that were late diagnoses declined from 22% in 2012 to six percent in 2013 but then increased to 24% in 2014. Declines in late diagnoses occurred in all age groups except among persons aged 30-39 years in whom late diagnosis remained relatively stable. Among PWID (including MSM-PWID), the proportion of late diagnoses increased from 2012 to 2013 but then declined in 2014. Declines in late diagnoses were observed among persons in all transmission risk categories and among persons who were housed or homeless at the time of diagnosis.

In 2014, the proportion of new diagnoses that occurred late was higher among men than other genders, non-whites, persons aged 30 years or older at the time of diagnosis, persons whose transmission risk was heterosexual contact or whose transmission risk was unknown and among persons who were housed at diagnosis.

The declines in late diagnoses represent an improvement in efforts to diagnose persons earlier in the course of disease which can improve health outcomes and reduce forward transmission. The racial and transmission risk disparities highlight populations in need of improved efforts to identify early disease.

Table 1.7 Late diagnoses among persons newly diagnosed with HIV in 2012-2014 by demographic and risk characteristics, San Francisco

Characteristics	Year								
	2012			2013			2014		
	New diagnoses[1]	Late diagnoses[2]		New diagnoses[1]	Late diagnoses[2]		New diagnoses[1]	Late diagnoses[2]	
	Number	Number	%[3]	Number	Number	%[3]	Number	Number	%[3]
Total	**461**	**95**	**21%**	**400**	**72**	**18%**	**334**	**55**	**16%**
Gender									
Male	431	84	19%	363	65	18%	313	54	17%
Female	25	9	36%	27	6	22%	14	1	7%
Transfemale	5	2	40%	10	1	10%	7	0	0%
Race/Ethnicity									
White	233	47	20%	180	31	17%	143	18	13%
African American	47	8	17%	52	10	19%	36	8	22%
Latino	116	23	20%	100	14	14%	96	15	16%
Asian/Pacific Islander	47	13	28%	52	16	31%	42	10	24%
Other/Unknown	18	4	22%	16	1	6%	17	4	24%
Age at Diagnosis									
13-24	57	6	11%	51	5	10%	37	2	5%
25-29	68	10	15%	79	9	11%	54	5	9%
30-39	144	27	19%	116	19	16%	101	19	19%
40-49	135	35	26%	100	24	24%	81	15	19%
50+	57	17	30%	54	15	28%	61	14	23%
Transmission Category									
MSM	360	70	19%	302	49	16%	253	42	17%
PWID	17	4	24%	24	6	25%	19	3	16%
MSM-PWID	43	4	9%	43	7	16%	37	2	5%
Heterosexual	29	14	48%	21	8	38%	11	5	45%
Other/Unidentified	12	3	25%	10	2	20%	14	3	21%
Housing Status									
Housed	420	87	21%	370	68	18%	298	52	17%
Homeless	41	8	20%	30	4	13%	36	3	8%

1 Includes persons diagnosed in the year based on a confirmed HIV test and does not take into account patient self-report of HIV infection.
2 Persons developed AIDS within 3 months of diagnosis.
3 Percent of new diagnoses.

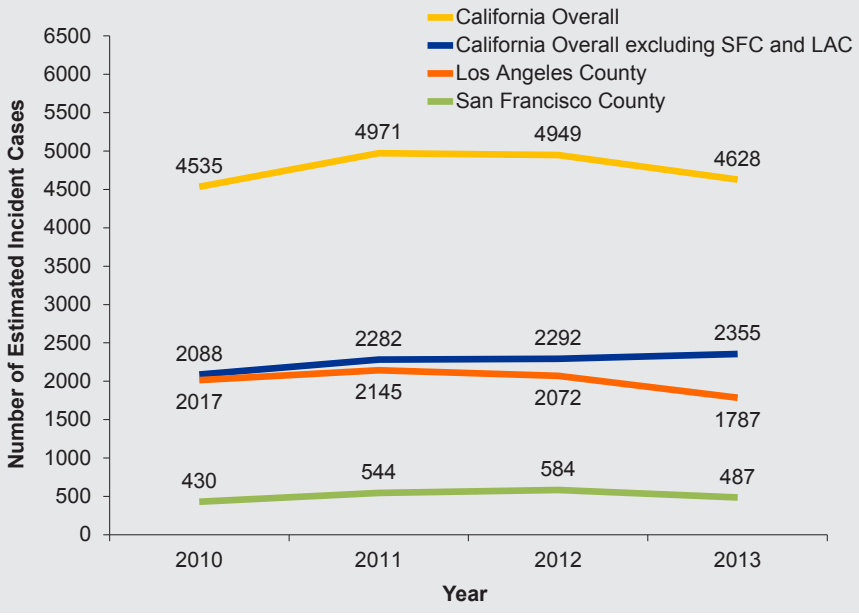
HIV incidence estimates

Estimates of new infections track the leading edge of the HIV epidemic and are critical for allocating resources and evaluating effectiveness of prevention programs. To identify incident HIV cases, blood from persons newly diagnosed with HIV is retested using a laboratory assay (called BED) that classifies individuals as having either a recent HIV infection (infection occurring within approximately the past six months) or a long-standing infection. These results are used with a statistical adjustment for HIV testing history to estimate HIV incidence.

We applied this method, developed by the CDC, to 2010-2013 data for San Francisco, Los Angeles, the other counties in California, and California overall to estimate HIV incidence statewide. The SFDPH serves as one of the 25 national HIV incidence surveillance sentinel sites monitoring the numbers and rates of new HIV infections. The Los Angeles Department of Public Health (LADPH) and the California Department of Health Office of AIDS (CDPH) are also HIV incidence surveillance sites. Previously, the SFDPH, LADPH and CDPH have calculated HIV incidence estimates independently for each jurisdiction. In this report, we included individuals who were at least 13 years and were reported to the SFDPH, LADPH and CDPH between 2010 and 2013 to calculate a statewide HIV incidence estimate for California.

Overall in California, the estimated number of incident or recent HIV infections has remained relatively stable between 2010-2013 with a low of 4,535 new infections in 2010 and a high of 4,971 new infections in 2011 (Figure 1.4). This stability is also seen in San Francisco, Los Angeles and the remaining counties in California. San Francisco has the fewest recent infections each year with a range between 430 and 584. The range of recent infections in Los Angeles County is between 1,787 and 2,145 and in all the remaining counties in California excluding San Francisco and Los Angeles there are between 2,088 and 2,355 recent infections each year.

Figure 1.4 Estimated number of new HIV infections by HIV incidence surveillance jurisdiction, 2010-2013, California



When the rate of recent infections per 100,000 persons is estimated, San Francisco has the highest rate in California ranging between 53.2 and 70.8 new infections per 100,000 per year (Figure 1.5). Los Angeles has the next highest rate of recent infections with a range of 17.9 to 21.7 recent infections per 100,000 per year followed by California overall with a range of 12.1 to 13.2 recent infections per 100,000 per year. The rate of HIV incidence is lowest in the other California counties, excluding San Francisco and Los Angeles, with rates ranging from 7.8 to 8.6 per 100,000 per year.

Figure 1.5 Estimated rate per 100,000 of new HIV infections by HIV incidence surveillance jurisdiction, 2010-2013, California

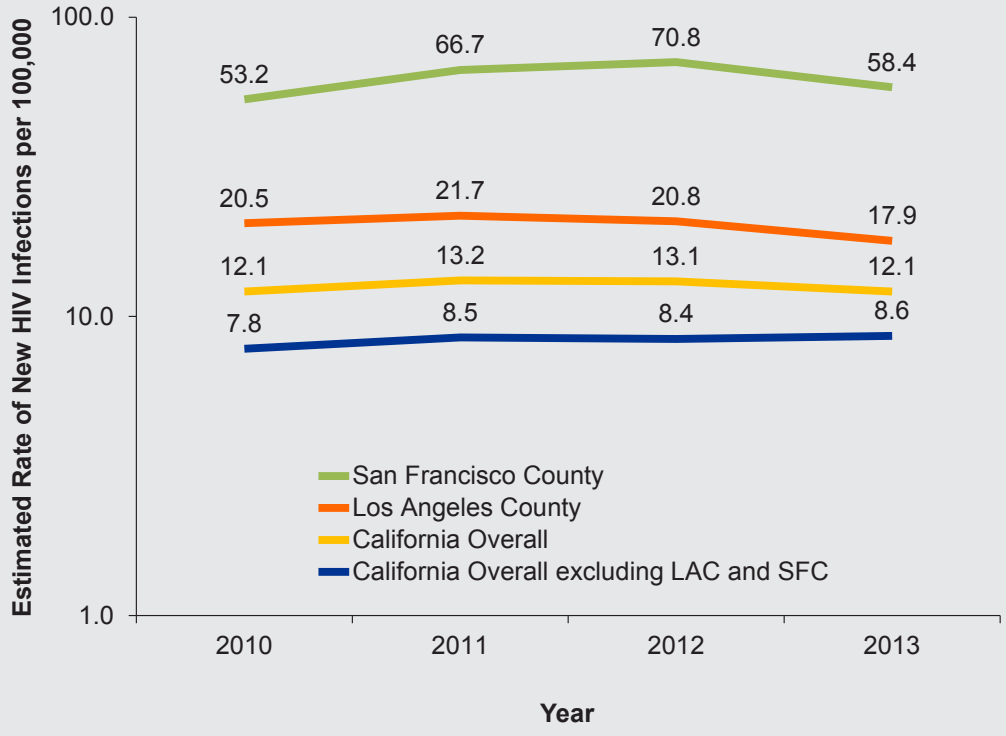


Table 1.8 presents the estimated rate per 100,000 of recent infections statewide in California by demographic characteristic. The rate of recent infections among men compared to women in 2013 is high: 22 new infections per 100,000 men compared to 2 per 100,000 women. While whites and Latinos in 2013 have a rate comparable to the overall statewide rate, between 11 and 13 recent infections per 100,000, the rate of recent infections among African Americans is disproportionately high: 33 new infections per 100,000 African Americans in 2013. With caution given to the large margin of error, the data suggest higher incidence among African Americans and men between 2010 and 2013 compared to other races and women. And, while there were fluctuations in the estimates, the confidence intervals overlap from year to year, indicating there were no large decreases or increases in HIV incidence over the last several years overall or in any of the subpopulations.

Table 1.8 Estimated number and rate[1] per 100,000 of new HIV infections by demographic characteristic, 2010-2013, California

	2010		2011		2012		2013	
	Number (95% CI)	Rate	Number (95% CI)	Rate	Number (95% CI)	Rate	Number (95% CI)	Rate
Total	4535 (3,800-5,271)	12	4971 (4,071-5,872)	13	4949 (4,183-5,714)	13	4628 (3,821-5,435)	12
Sex at Birth								
Male	4093 (3,412-4,774)	22	4349 (3,604-5,095)	23	4449 (3,757-5,140)	24	4181 (3,462-4,900)	22
Female	442 (288-597)	2	622 (309-935)	3	500 (296-703)	3	447* (169-726)	2
Race/Ethnicity								
White	1747 (1,364-2,130)	12	1676 (1,287-2,064)	11	1749 (1,393-2,106)	12	1596 (1,244-1,948)	11
African American	730 (517-943)	33	870 (596-1,144)	40	865 (625-1,106)	39	732 (499-966)	33
Latino	1703 (1,364-2,043)	12	1958 (1,484-2,431)	14	1908 (1,528-2,287)	13	1860 (1,412-2,307)	13

* The female estimates for 2013 may be less stable due to incomplete data.

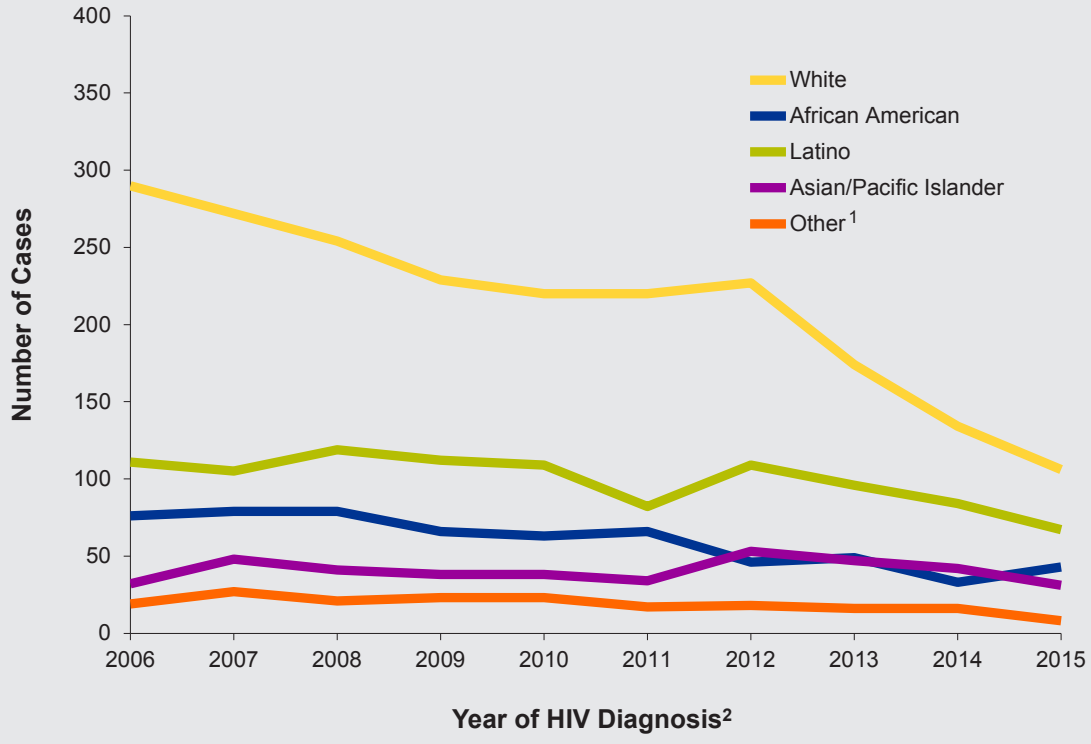
1 The population data by year, sex, race/ethnicity, and age are obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050. Sacramento, CA, July 2007.

2 Trends in HIV Diagnoses

Race/ethnicity

Trends by racial/ethnic category for persons newly diagnosed with HIV infection show that, from 2006 through 2015, whites accounted for the majority of newly diagnosed cases (Figure 2.1). The number of white HIV cases declined for most of this time period, leveled off between 2009 and 2012, and then continued to decline through 2015. The number of African American cases declined from 76 cases in 2006 to 33 cases in 2014 but then increased to 43 cases in 2015. Annual number of diagnoses in Asian/Pacific Islanders is similar to African Americans from 2012 and onward. The number of Latino HIV cases declined from 119 cases in 2008 to 67 cases in 2015.

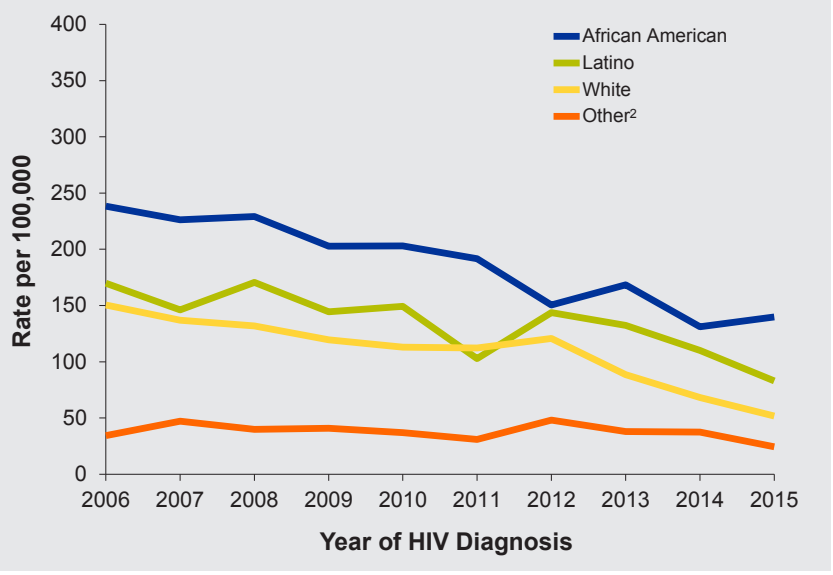
Figure 2.1 Number of persons newly diagnosed with HIV infection by race/ethnicity, 2006-2015, San Francisco



1 Cases in the "Other" racial/ethnic category include 11% Native Americans, 86% Multi-race, and 4% unknown.
2 See Technical Notes "Date of Initial HIV Diagnosis."

The annual gender and race/ethnicity specific population rates of HIV diagnosis in San Francisco were highest among African American men, ranging from 238 per 100,000 in 2006 to 140 per 100,000 in 2015 (Figure 2.2). The rates of HIV diagnosis for white men in this time period also declined from 151 per 100,000 in 2006 to 52 per 100,000 in 2015. HIV rates for Latino men have decreased from 170 per 100,000 in 2006 to 83 per 100,000 in 2015. Rates for men of other racial/ethnic groups declined more modestly between 2006 and 2015.

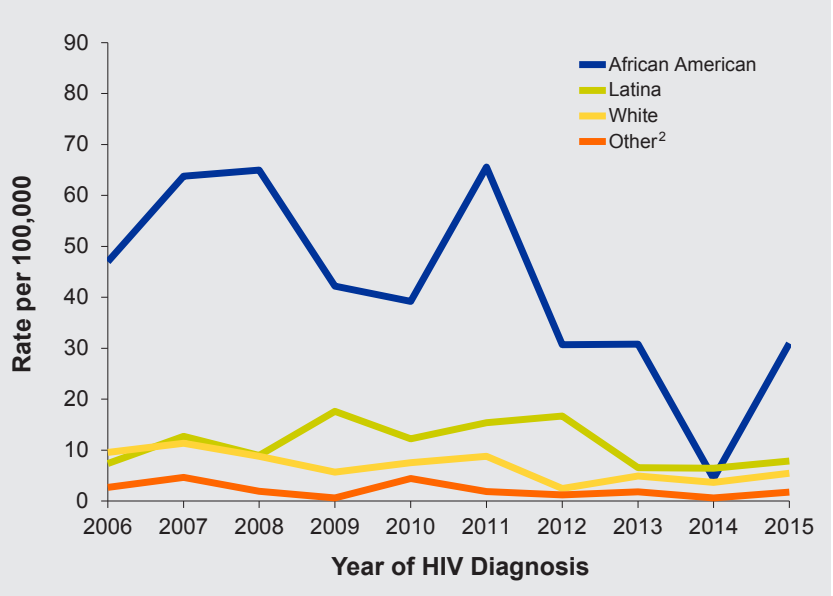
Figure 2.2 Annual rates[1] of men newly diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2015, San Francisco



1 See Technical Notes "HIV Case Rates and HIV Mortality Rates."
2 Cases in the "Other" race/ethnicity category include 70% Asian/Pacific Islanders, 3% Native Americans, 27% multiple races, and 1% unknown.

In San Francisco, annual gender and race/ethnicity specific population rates of HIV diagnosis are significantly lower among women, compared to men, and therefore the rates are more susceptible to fluctuation. For the period of 2006 to 2015, the annual rates of HIV diagnosis were higher for African American women compared to other racial/ethnic groups, from 47 per 100,000 in 2006 to 31 per 100,000 in 2015 (Figure 2.3). Annual rates of diagnosis for white women have been under 10 per 100,000 since 2007. Rates for Latina women peaked at 18 per 100,000 in 2009 and declined to 8 per 100,000 in 2015.

Figure 2.3 Annual rates[1] of women newly diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2015, San Francisco

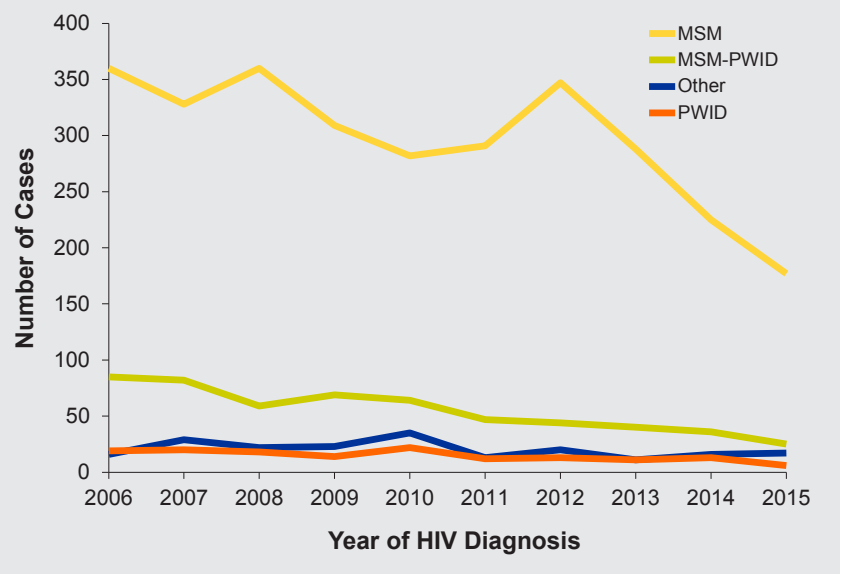


1 See Technical Notes "HIV Case Rates and HIV Mortality Rates."
2 Cases in the "Other" race/ethnicity category include 50% Asian/Pacific Islanders, 6% Native Americans, 38% multiple races, and 6% unknown.

Transmission category

The majority of males newly diagnosed with HIV infection in San Francisco are MSM and while the annual number fluctuated, the overall trend declined (Figure 2.4). In recent years, trends in the number of male PWID cases (both MSM and heterosexual) also declined. In 2015, 79% of male HIV cases were MSM, 11% were MSM-PWID, and 3% were heterosexual PWID.

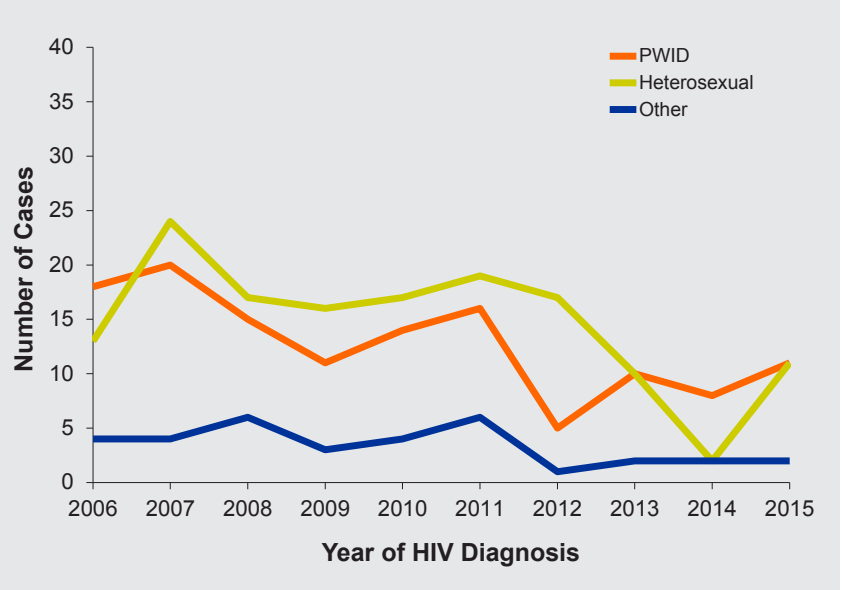
Figure 2.4 Number of men newly diagnosed with HIV infection[1] by transmission category, 2006-2015, San Francisco



1 Excludes transfemale cases diagnosed with HIV infection. Includes persons with HIV by year of their initial HIV diagnosis.

From 2007 to 2014, the number of female cases newly diagnosed with HIV infection due to heterosexual contact showed a trend similar to that for PWID cases (Figure 2.5). In 2015, 46% of female cases acquired HIV through injecting drugs and 46% through heterosexual contact.

Figure 2.5 Number of women newly diagnosed with HIV infection[1] by transmission category, 2006-2015, San Francisco



1 Excludes transmale cases diagnosed with HIV infection. Includes persons with HIV by year of their initial HIV diagnosis.

Age

Table 2.1 shows the annual number of HIV diagnoses between 2012 and 2015 by gender and age at HIV diagnosis. The annual number of male HIV diagnoses declined from 424 in 2012 to 225 in 2015. Among males, the proportion of cases in the 40-49 years age group decreased each year in this time period. Overall, most new diagnoses occurred among males in the 30-39 years age group, followed by the number of diagnoses in males 40-49 years of age.

In this time period, the annual number of female HIV diagnoses has remained mostly level, with 23 female cases in 2012 and 24 female cases in 2015. The age distribution among female cases newly diagnosed between 2012 and 2014 differs sharply from males, with 68%-78% of annual diagnoses occurring in women aged 40 years and older. Few women under 25 years of age were newly diagnosed with HIV in this time period. In 2015, greater proportions of new diagnoses in women have shifted to younger age groups, compared to previous years, particularly in the 25-29 and 30-39 years age groups.

Table 2.1 Number of persons newly diagnosed with HIV infection by gender[1] and age at diagnosis, 2012-2015, San Francisco

	Year of Initial HIV Diagnosis[2]							
	2012		2013		2014		2015	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in years)								
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)
13 - 17	0	(0)	0	(0)	2	(1)	2	(1)
18 - 24	54	(13)	51	(15)	33	(11)	32	(14)
25 - 29	69	(16)	70	(20)	50	(17)	53	(24)
30 - 39	135	(32)	102	(29)	90	(31)	65	(29)
40 - 49	119	(28)	88	(25)	68	(23)	49	(22)
50+	47	(11)	39	(11)	47	(16)	24	(11)
Male Subtotal	**424**	**(100)**	**350**	**(100)**	**290**	**(100)**	**225**	**(100)**
Female (Age in years)								
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)
13 - 17	0	(0)	0	(0)	0	(0)	1	(4)
18 - 24	2	(9)	1	(5)	1	(8)	1	(4)
25 - 29	1	(4)	3	(14)	1	(8)	5	(21)
30 - 39	2	(9)	3	(14)	1	(8)	9	(38)
40 - 49	10	(43)	6	(27)	4	(33)	4	(17)
50+	8	(35)	9	(41)	5	(42)	4	(17)
Female Subtotal	**23**	**(100)**	**22**	**(100)**	**12**	**(100)**	**24**	**(100)**

1 Transgender data by age are not presented in the table due to small numbers and potential small population.
2 See Technical Notes "Date of Initial HIV Diagnosis."

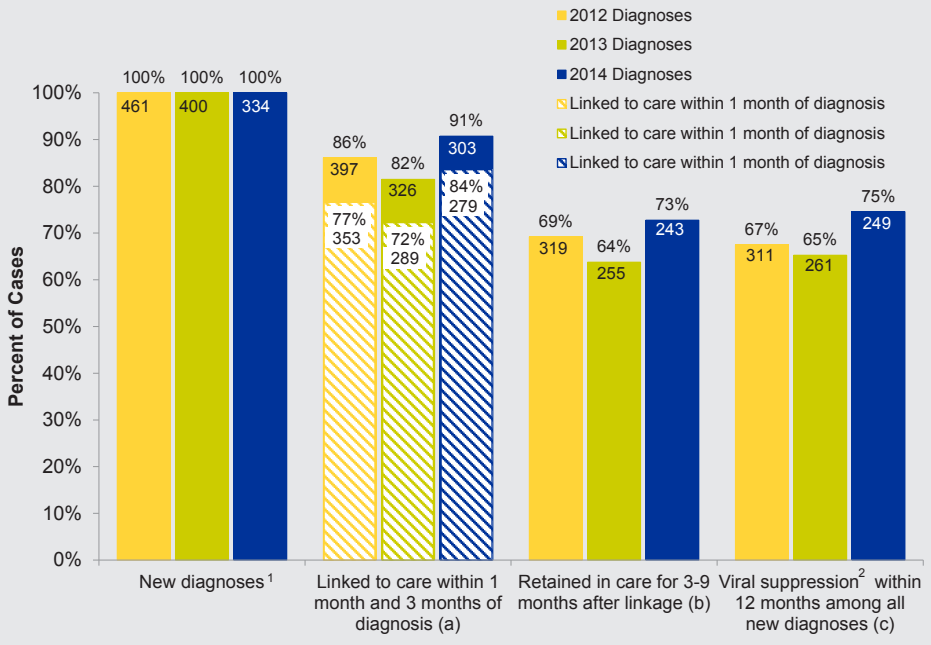
3 Spectrum of Engagement in HIV Prevention and Care

Continuum of HIV care among persons newly diagnosed with HIV

To prevent adverse health outcomes among persons newly diagnosed with HIV, rapid entry into health care, continuous engagement in care, and use of ART to achieve viral suppression is required. The SFDPH monitors these outcomes using reports of CD4, viral load and genotype tests as indicators of care, and viral load test results to measure viral suppression (defined as a viral load less than 200 copies/mL). To assess care for persons newly diagnosed with HIV and to account for the 12 months follow-up from date of HIV diagnosis, the most recent year for which data are available is 2014. The date of HIV diagnosis is determined based on a confirmed HIV test and does not take into account patient self-report of HIV infection.

During the period 2012 through 2014, the number of persons newly diagnosed with HIV declined from 461 in 2012 to 334 in 2014 (Figure 3.1). In the last two years the proportion of newly diagnosed persons who entered care within one month increased from 72% in 2013 to 84% in 2014, and the proportion entered care within three months increased from 82% in 2013 to 91% in 2014[(a)]. However, not all persons who entered care continued to receive care; 64%-73% of persons diagnosed in 2012 to 2014 remained in care three to nine months after initial linkage to care (i.e., had a subsequent laboratory test after their first laboratory test)[(b)]. The proportion of newly diagnosed persons who achieved viral suppression within 12 months increased from 67% in 2012 to 75% in 2014[(c)]. The large increase in the proportions linked to and retained in care and virally suppressed from 2013 to 2014 reflects expanded San Francisco citywide activities to ensure timely and sustained receipt of care and antiretroviral therapy to achieve viral suppression.

Figure 3.1 Continuum of HIV care among persons newly diagnosed with HIV infection, 2012-2014, San Francisco

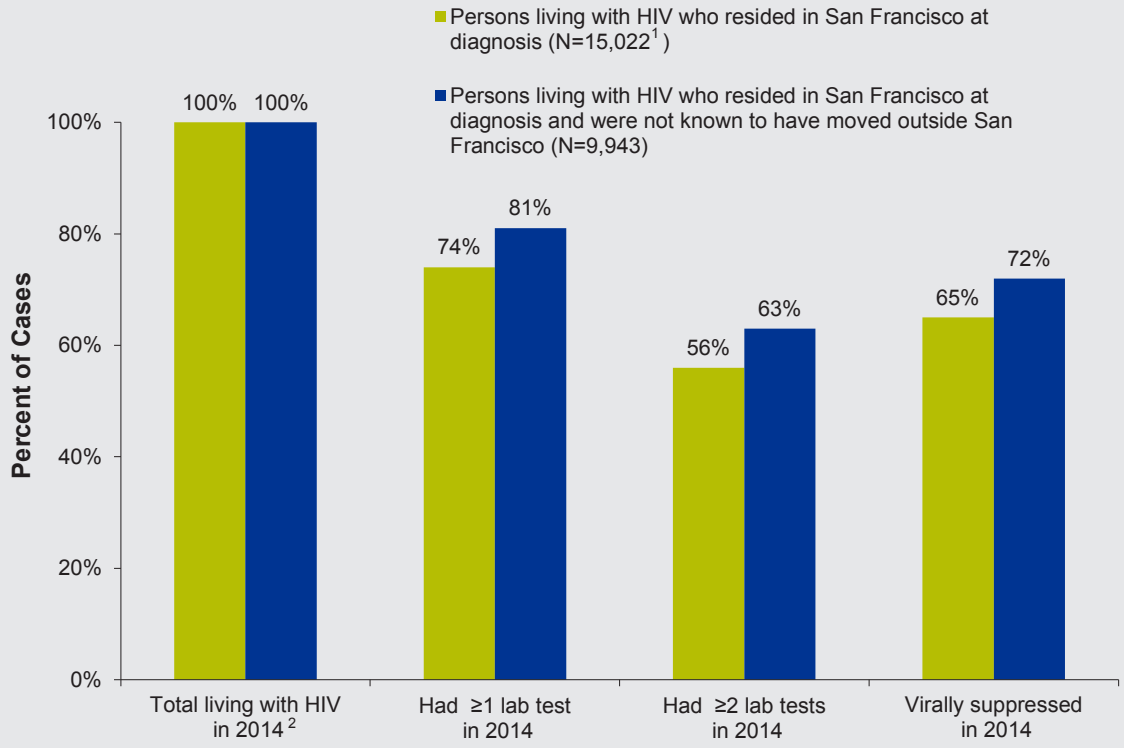


1 Number of new diagnoses shown each year is based on the evidence of a confirmed HIV test and does not take into account patient self-report of HIV infection.
2 Defined as the latest viral load test within 12 months of HIV diagnosis <200 copies/mL.

Continuum of HIV care among persons living with HIV

As of December 31, 2014 there were 15,022 persons living with HIV (PLWH) who were diagnosed through the end of 2013 and who resided in San Francisco at time of diagnosis. Of these, 74% had at least one CD4, viral load or genotype test (received care), 56% had two or more laboratory tests at least three months apart (retained in care), and 65% achieved viral suppression in 2014 (Figure 3.2). After excluding 5,079 persons who were known to have moved outside of San Francisco, there were 9,943 San Francisco residents living with HIV. Of these, 81% received care, 63% were retained in care and 72% were virally suppressed in 2014.

Figure 3.2 Continuum of HIV care among persons living with HIV, 2014, San Francisco



1 Residents of San Francisco at time of diagnosis; includes 5,079 cases who were known to have moved outside San Francisco after diagnosis.

2 Includes San Francisco residents at diagnosis living with HIV at the end of 2014 and diagnosed by the end of 2013. Excludes persons who were non-San Francisco residents at time of HIV diagnosis but San Francisco residents at AIDS diagnosis.

HIV care and prevention indicators

Key HIV care and prevention indicators for 2012 through 2014 among persons with HIV in San Francisco are shown in Table 3.1. The proportion of late stage HIV diagnosis, defined as a new case who developed HIV infection stage 3 (AIDS) within three months of HIV diagnosis, decreased from 21% in 2012 to 16% in 2014. The proportion of new cases linked to care within one month of diagnosis increased from 72% in 2013 to 84% in 2014. The proportions of persons who were virally suppressed within 12 months of their HIV diagnosis increased by 10% from 65% in 2013 to 75% in 2014. The median time from HIV diagnosis to viral suppression shortened from 147 days in 2012 to 88 days in 2014. The median number of days from HIV diagnosis to first care remained stable (7-8 days) while the median time from receipt of care to ART initiation and from ART initiation to viral suppression improved over time. An indicator of earlier initiation of ART among persons newly diagnosed with HIV is evident by the increase in the median CD4 count (cells/μL) at time of ART initiation from 635 cells/μL in 2012 to 677 cells/μL in 2013 and 660 cells/μL in 2014 among persons with a CD4 count greater than 500. The care outcome measures for living HIV cases remained relatively stable between 2012 and 2014. The proportion of PLWH who received two or more tests decreased, suggesting a trend toward fewer laboratory tests conducted among persons living with HIV in care. Among persons living with HIV and with at least one viral load test, the proportion who were virally suppressed slightly increased from 88% in 2012 to 90% in 2014.

Table 3.1 Care and prevention indicators among persons newly diagnosed with HIV and living with HIV, 2012-2014, San Francisco

	Year		
Indicators	**2012**	**2013**	**2014**
New HIV diagnoses[1]	**N=461**	**N=400**	**N=334**
Proportion developed AIDS within 3 months of diagnosis	21%	18%	16%
Proportion linked to care within 1 month of diagnosis	77%	72%	84%
Proportion virally suppressed[2] within 12 months of diagnosis	67%	65%	75%
Median time (days) from HIV diagnosis to first viral suppression	147	131	88
Median time (days) from HIV diagnosis to first care	7	8	7
Median time (days) from first care to ART initiation[3]	30	26	14
Median time (days) from ART initiation to first viral suppresssion[3]	70	70	49
Median CD4 count (cells/μL) at treatment initiation among those diagnosed with a CD4 count>500 cells/μL	635	677	660
Living HIV cases[4] (≥13 years old)	**N=14,625**	**N=14,843**	**N=15,022**
Proportion of cases who had ≥1 CD4/viral load test	75%	74%	74%
Proportion received ≥2 tests among those with ≥1 test	79%	78%	75%
Proportion virally suppressed[2] among living cases	65%	65%	65%
Proportion virally suppressed among those with ≥1 viral load test	88%	89%	90%

1 Includes persons diagnosed each year based on a confirmed HIV test and does not take into account patient self-report of HIV infection.
2 Defined as the latest viral load test within 12 months of HIV diagnosis <200 copies/mL.
3 Calculation is limited to persons diagnosed with HIV who were known to have started ART. See Technical Notes "Estimate of ART Use."
4 Includes persons who were living with HIV at the end of each year and diagnosed as of the end of the previous year. Excludes persons who were non-San Francisco residents at time of HIV diagnosis but San Francisco residents at AIDS diagnosis.

Care indicators among persons with HIV by demographic and risk characteristics

Although the majority of San Franciscans with HIV were linked to care, retained in care and achieved viral suppression, there are noticeable differences in these care indicators by demographic and risk characteristics. Among people newly diagnosed with HIV in 2014, a lower proportion of men were retained in care three to nine months after initial linkage to care (72%) (Table 3.2). African Americans had a lower proportion of linkage to care both one month and three months after diagnosis (67% and 81%, respectively), retention in care (64%), and viral suppression 12 months after diagnosis (53%). While a greater proportion of newly diagnosed persons who were homeless were linked to care within three months of diagnosis (94% compared to 90% among those who were housed), only 53% achieved viral suppression within 12 months of diagnosis compared to 77% among those who were housed. This suggests that more needs to be done among the homeless after initial linkage to care to ensure they initiate and adhere to ART.

Table 3.2 Care indicators among persons newly diagnosed with HIV in 2014 by demographic and risk characteristics, San Francisco

Characteristics	Number of diagnoses[1]	% Linked to care within 1 month of diagnosis[2]	% Linked to care within 3 months of diagnosis[2]	% Retained in care 3-9 months after linkage[2]	% Virally suppressed within 12 months of diagnosis[2]
Total	**334**	**84%**	**91%**	**73%**	**75%**
Gender					
Male	313	85%	90%	72%	74%
Female	14	64%	93%	93%	79%
Transfemale	7	71%	100%	86%	71%
Race/Ethnicity					
White	143	87%	94%	76%	76%
African American	36	67%	81%	64%	53%
Latino	96	81%	88%	71%	78%
Asian/Pacific Islander	42	88%	93%	76%	86%
Other/Unknown	17	94%	94%	65%	65%
Age at Diagnosis					
13-24	37	76%	84%	65%	73%
25-29	54	93%	98%	81%	81%
30-39	101	75%	85%	63%	67%
40-49	81	89%	91%	79%	78%
50+	61	87%	97%	77%	77%
Transmission Category					
MSM	253	84%	91%	75%	78%
PWID	19	79%	95%	63%	63%
MSM-PWID	37	86%	89%	65%	57%
Heterosexual	11	82%	100%	82%	91%
Other/Unidentified	14	79%	86%	57%	57%
Housing Status					
Housed	298	83%	90%	73%	77%
Homeless	36	89%	94%	69%	53%

1 Includes persons diagnosed in 2014 based on a confirmed HIV test and does not take into account patient self-report of HIV infection.
2 Percent of total diagnoses.

Among PLWH in 2014 who were San Francisco residents at time of diagnosis, the proportion who achieved viral suppression was lower among women and transwomen compared to men, African Americans and Latinos compared to whites, younger persons compared to those 40 and older, PWID (including MSM-PWID) compared to MSM and heterosexuals, and homeless persons compared to those with housing (Table 3.3).

Table 3.3 Care indicators among persons living with HIV in 2014 who resided in San Francisco at diagnosis, by demographic and risk characteristics

Characteristics	Number of living cases[1]	% with >= 1 CD4 or viral load tests in 2014[2]	% with >=2 CD4 or viral load tests in 2014[2]	% Virally suppressed (most recent viral load test in 2014)[2]
Total	**15,022**	**74%**	**56%**	**65%**
Gender				
Male	13,828	74%	56%	66%
Female	858	79%	62%	62%
Transfemale	336	79%	62%	60%
Race/Ethnicity				
White	9,192	75%	56%	67%
African American	1,851	76%	57%	61%
Latino	2,722	71%	55%	62%
Asian/Pacific Islander	839	75%	57%	67%
Other/Unknown	418	78%	60%	63%
Age as of 12/31/2014				
13-24	92	75%	59%	54%
25-29	369	73%	47%	54%
30-39	1,626	70%	47%	56%
40-49	4,082	72%	52%	62%
50-59	5,546	75%	57%	66%
60-69	2,741	78%	64%	72%
70+	566	81%	72%	78%
Transmission Category				
MSM	11,118	74%	56%	67%
PWID	892	76%	58%	58%
MSM-PWID	2,242	77%	58%	61%
Heterosexual	504	79%	60%	67%
Other/Unidentified	266	53%	38%	46%
Housing Status, Most Recent				
Housed	14,677	75%	56%	66%
Homeless	345	60%	43%	32%

1 Includes San Francisco residents at diagnosis living with HIV at the end of 2014 and diagnosed by the end of 2013. Excludes persons who were non-San Francisco residents at time of HIV diagnosis but San Francisco residents at AIDS diagnosis.

2 Percent of total living cases.

Among the 15,022 PLWH in 2014 who were San Francisco residents at diagnosis, 5,079 were known to have subsequently moved outside of San Francisco. Because care information for those who moved to and received care in another jurisdiction is incomplete, we excluded these cases and assessed care indicators only among San Francisco residents based on their most recent residence (N=9,943). Similar to that observed among all PLWH in Table 3.3 on page 23 (San Francisco residents at diagnosis regardless of whether or not they have moved after diagnosis), the proportion of San Francisco residents living with HIV (not known to have moved outside of San Francisco) who achieved viral suppression was lower among women and transwomen compared to men, African Americans and Latinos compared to whites, younger persons compared to those 40 and older, PWID (including MSM-PWID) compared to MSM and heterosexuals, and homeless persons compared to those with housing (Table 3.4).

Table 3.4 Care indicators among persons living with HIV in 2014 who resided in San Francisco at diagnosis and were not known to have moved outside San Francisco, by demographic and risk characteristics

Characteristics	Number of living cases[1]	% with >= 1 CD4 or viral load tests in 2014[2]	% with >=2 CD4 or viral load tests in 2014[2]	% Virally suppressed (most recent viral load test in 2014)[2]
Total	**9,943**	**81%**	**63%**	**72%**
Gender				
Male	9,069	81%	62%	73%
Female	621	82%	65%	65%
Transfemale	253	84%	67%	64%
Race/Ethnicity				
White	5,857	83%	64%	75%
African American	1,242	81%	63%	65%
Latino	1,954	76%	59%	67%
Asian/Pacific Islander	628	79%	61%	72%
Other/Unknown	262	83%	67%	67%
Age as of 12/31/2014				
13-24	62	79%	60%	58%
25-29	246	76%	50%	59%
30-39	1,083	73%	51%	59%
40-49	2,721	80%	59%	68%
50-59	3,587	82%	64%	74%
60-69	1,844	87%	72%	81%
70+	400	86%	77%	82%
Transmission Category				
MSM	7,244	82%	63%	75%
PWID	621	80%	62%	61%
MSM-PWID	1,527	83%	63%	66%
Heterosexual	366	82%	63%	70%
Other/Unidentified	185	53%	39%	46%
Housing Status, Most Recent				
Housed	9,608	82%	63%	73%
Homeless	335	60%	43%	33%

1 Includes San Francisco residents at diagnosis living with HIV at year-end 2014 and diagnosed by year-end 2013. Excludes persons who were known to have moved out of San Francisco, persons who were non-San Francisco residents at time of HIV diagnosis but San Francisco residents at AIDS diagnosis.

2 Percent of total living cases.

Comparison of San Francisco HIV prevention and care indicators to California and the United States

The available HIV prevention and care indicators data for San Francisco, California, and the United States are displayed in Table 3.5 (year of the most recent available data is indicated in parentheses). Awareness of HIV status in San Francisco is high (93%) compared to all of California (91%) and the U.S. (87%). The proportion of persons with a late HIV diagnosis in San Francisco is lower than the proportion in all of California and the U.S. Access to HIV care and viral suppression among PLWH in San Francisco and California is assessed using the most current residence and does not include persons who are known to have moved outside of the jurisdiction. The proportions of PLWH who received care and were virally suppressed were higher in San Francisco than in all of California and the U.S. A target of 80% virally suppressed for youth and PWID by 2020 was added in the National HIV/AIDS Strategy indicators because these groups have greater disparities in care outcomes compared to the overall PLWH population. The higher proportion of persons with laboratory tests in San Francisco may reflect greater completeness of reporting CD4 and viral load test results in San Francisco compared to all of California and the U.S. The death rates per 1,000 persons with HIV or AIDS in San Francisco were slightly higher than that in all of California but lower than in all of the U.S.

Table 3.5 Comparison of HIV prevention and care indicators for San Francisco, California, and the United States

Indicators	San Francisco	California[2]	United States[3]
Awareness of HIV status[1]			
Estimated % persons living with HIV who know their serostatus	93% (2014)	91% (2014)	87% (2013)
Late HIV diagnosis			
% persons diagnosed with AIDS within 3 months of HIV diagnosis	16% (2014)	20% (2014[3])	23% (2014)
HIV care access and outcome[4]			
% newly diagnosed persons linked to care within 1 month of HIV diagnosis	84% (2014)	73% (2014[3])	75% (2014)
% persons with HIV diagnosis who are in care (>=1 laboratory tests)	81% (2014)	71% (2014)	71% (2013)
% persons with HIV diagnosis who are retained in care (>=2 laboratory tests)	63% (2014)	54% (2014)	57% (2013)
% persons with HIV diagnosis who are virally suppressed	72% (2014)	57% (2014)	55% (2013)
% persons aged 13-24 years with HIV diagnosis who are virally suppressed	58% (2014)	45% (2014)	44% (2013)
% PWID with HIV diagnosis who are virally suppressed	61% (2014)	45% (2014)	47% (2013)
HIV mortality			
Death rate per 1,000 persons with HIV diagnosis	15.8 (2013)	13.2 (2013[3])	17.6 (2013)
Death rate per 1,000 persons with AIDS diagnosis	20.6 (2013)	18.4 (2013[3])	25.6 (2013)

1 The estimated percent aware of HIV infection for San Francisco was derived from the National HIV Behavioral Surveillance (MSM 2014, HET 2013, PWID 2015) and the Transwomen Empowered to Advance Community Health study, 2nd round (TEACH2 2013).

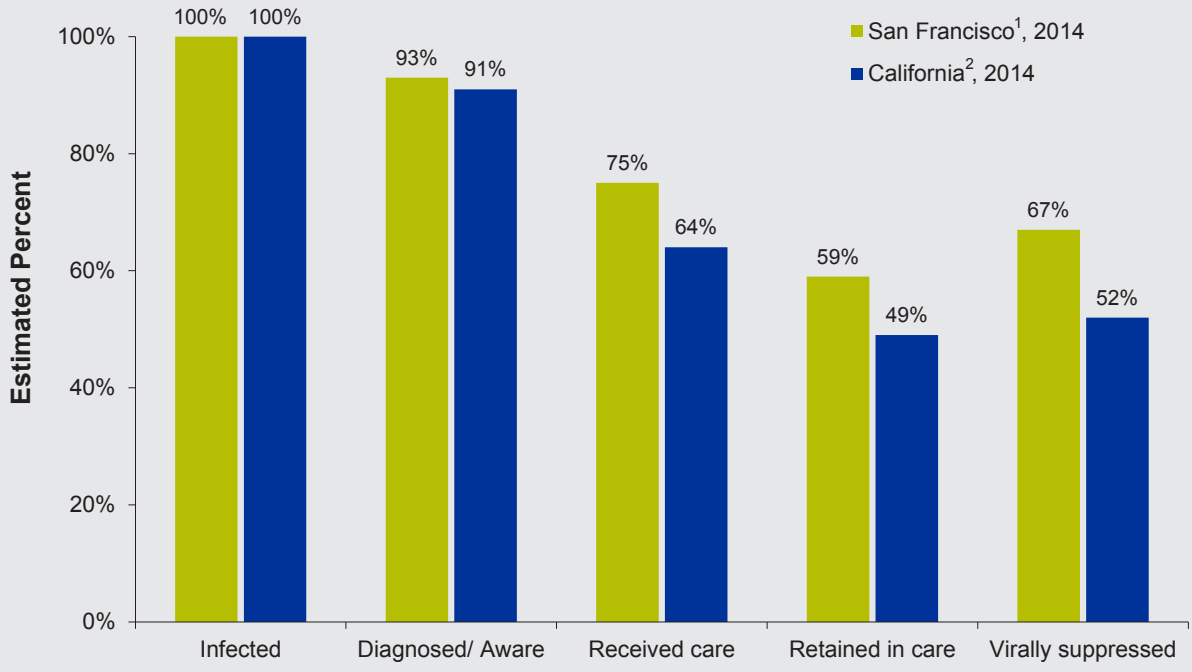
2 The Continuum of HIV Care in California -2014. http://www.cdph.ca.gov/programs/aids/Pages/TOASurv.aspx; posted June 27, 2016.

3 CDC HIV Surveillance Supplemental Report 2016;21(No.4); published July 2016.

4 The percentages of persons with HIV diagnosis who are in care, retained in care, and virally suppressed are calculated among those diagnosed and last known to be living in San Francisco and California, respectively.

The continuum of HIV care among PLWH including those aware of their HIV infection (diagnosed) as well as those infected and not aware (undiagnosed) is shown in Figure 3.3. This represents available data in the same methodological framework, assessed using the most recent residence information and laboratory tests as indicators of care, for San Francisco and all of California. Comparable HIV care continuum data among persons living with diagnosed or undiagnosed HIV for the U.S. were not available.

Figure 3.3 Continuum of HIV care among persons living with diagnosed or undiagnosed HIV infection - San Francisco and California



1 The estimated percent received care, retained in care, and virally suppressed among all infected was derived by applying the 93% diagnosed/aware to the 81% who had ≥1 lab tests, 63% who had ≥2 lab tests, and 72% who were virally suppressed among those living with HIV in San Francisco as shown in Table 3.4 on page 24, respectively.

2 California data source: The Continuum of HIV Care in California - 2014. http://www.cdph.ca.gov/programs/aids/Pages/TOASurv.aspx; posted June 27, 2016.

Use of antiretroviral therapy

The estimated use of antiretroviral therapy (ART) among PLWH as of December 31, 2015 is presented in Table 3.6. Information on ART use was obtained from medical chart review. Persons with a medical record indicating that they were prescribed ART were assumed to have received it (see Technical Notes "Estimate of ART Use"). The lower level estimate shown in the table was calculated among all living HIV cases (N=15,995). The upper level estimate was calculated among living cases for whom a chart review was completed between January 2014 and March 2016 (N=6,548). Persons without follow-up information within the last two years or those known to have moved out of San Francisco were excluded from the upper level estimate calculation. Overall, 87%-94% of PLWH received ART. ART use was lower among women and transwomen (compared to men), persons with race/ethnicity other than white, PWID (although not MSM-PWID), the homeless, and persons with public or no health insurance (compared to those with private insurance).

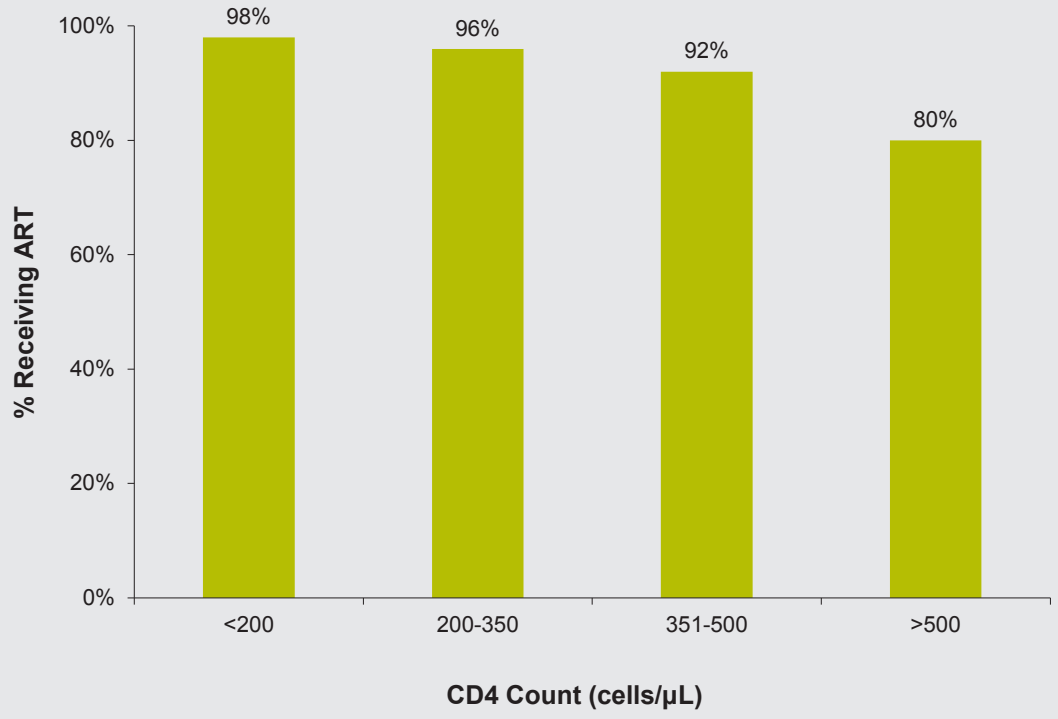
Table 3.6 Estimate of ART use among persons living with HIV by demographic, risk, and socioeconomic characteristics, December 2015, San Francisco

	Percent Receiving ART	
	Lower Level Estimate	Upper Level Estimate
Overall	**87%**	**94%**
Gender		
Male	87%	95%
Female	85%	92%
Transfemale[1]	86%	93%
Race/Ethnicity		
White	88%	96%
African American	83%	91%
Latino	86%	94%
Asian/Pacific Islander	83%	91%
Native American	79%	91%
Multiple race	86%	92%
Transmission Category		
MSM	87%	95%
PWID	83%	92%
MSM-PWID	88%	95%
Heterosexual	89%	94%
Housing Status, Most Recent		
Housed	88%	95%
Homeless	71%	83%
Insurance at HIV/AIDS Diagnosis		
Private	91%	96%
Public	88%	93%
None	84%	94%

1 Transfemale data include all transgender cases. Transmale data are not released separately due to the potential small population size. See Technical Notes "Transgender Status."

Between January 2014 and March 2016 and among San Francisco PLWH who had their medical chart reviewed, the estimated ART use by lowest (nadir) CD4 count is shown in Figure 3.4 (N=6,548). Persons without follow-up information within the last two years or those known to have moved out of San Francisco were excluded from the estimate. The proportion receiving ART was highest among persons with the lowest CD4 count: 98% of cases with a nadir CD4 count below 200 cells/μL, 96% with a nadir CD4 count between 200-350 cells/μL, 92% with a nadir CD4 count between 351-500 cells/μL, and 80% with a nadir CD4 count above 500 cells/μL received ART.

Figure 3.4 Estimate of ART use[1] among living HIV cases with chart review by nadir CD4 level, December 2015, San Francisco



1 See Technical Notes "Estimate of ART Use."

Among persons newly diagnosed with HIV between 2009 and 2014 whose CD4 count at diagnosis was >500 cells/μL, the median CD4 count at ART initiation increased from 555 cells/μL in 2009 to 660 cells/μL in 2014 (Table 3.7). Among persons whose CD4 count at diagnosis was <200 cells/μL, the median CD4 count at ART initiation increased from 78 cells/μL in 2009 to 111 cells/μL in 2014. Among persons whose CD4 count at diagnosis was between 200 and 500 cell/μL, the median CD4 count remained relatively stable over time.

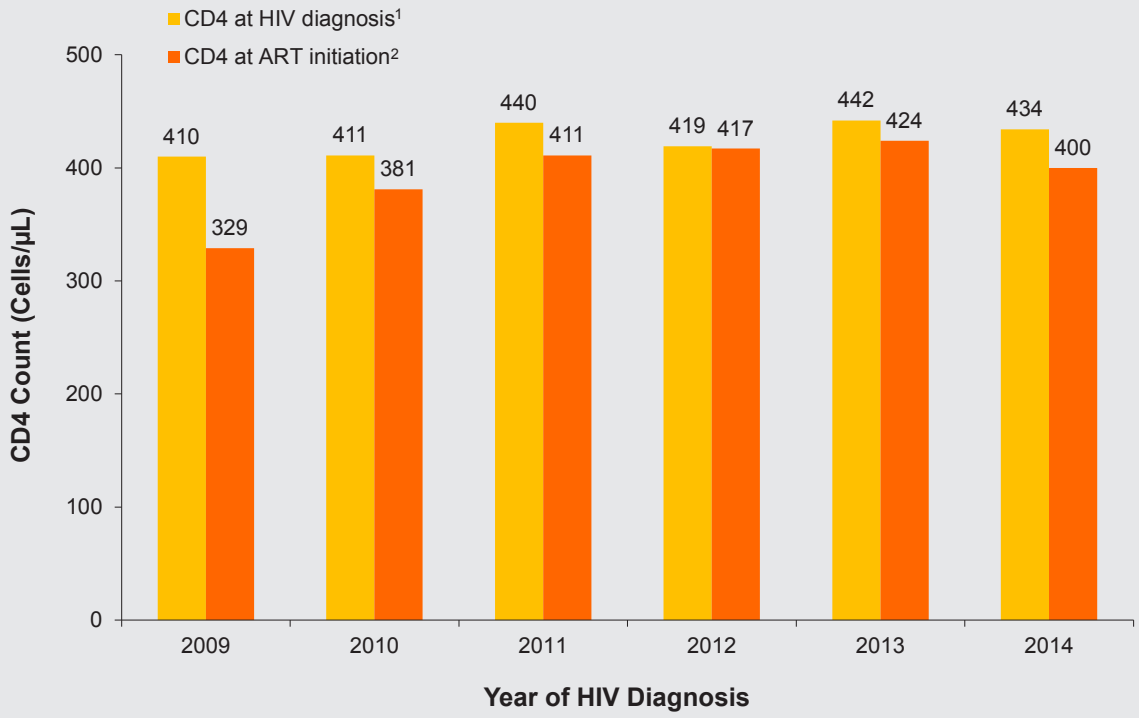
Table 3.7 Trends in median CD4 count at time of ART initiation by CD4 count at time of diagnosis, 2009-2014, San Francisco

Year of HIV diagnosis	Median CD4 count at ART initiation by CD4 count at diagnosis (cells/μL) among persons initiating ART[1]			
	<200	200-350	351-500	>500
2009	78	273	412	555
2010	105	297	432	563
2011	84	280	426	643
2012	113	298	430	635
2013	79	295	437	677
2014	111	266	424	660

1 Median CD4 count at ART initiation was calculated among persons who started ART and whose CD4 count at HIV diagnosis and CD4 count at ART initiation were available (N=1,706).

Among persons newly diagnosed with HIV between 2009 and 2014, the median CD4 count at HIV diagnosis slightly increased from 410 cells/μL in 2009 to 434 cells/μL in 2014 (Figure 3.5). The temporal increase in CD4 count at ART initiation is more prominent: among persons who were diagnosed in 2009 and known to have started ART, the median CD4 count at ART initiation was 329 cells/μL while the median CD4 count at ART initiation for persons diagnosed in 2014 was 400 cells/μL, suggesting that the time between HIV diagnosis and ART initiation has shortened during 2009 to 2014.

Figure 3.5 Trends in median CD4 count at time of diagnosis and at time of ART initiation among persons newly diagnosed with HIV, 2009-2014, San Francisco



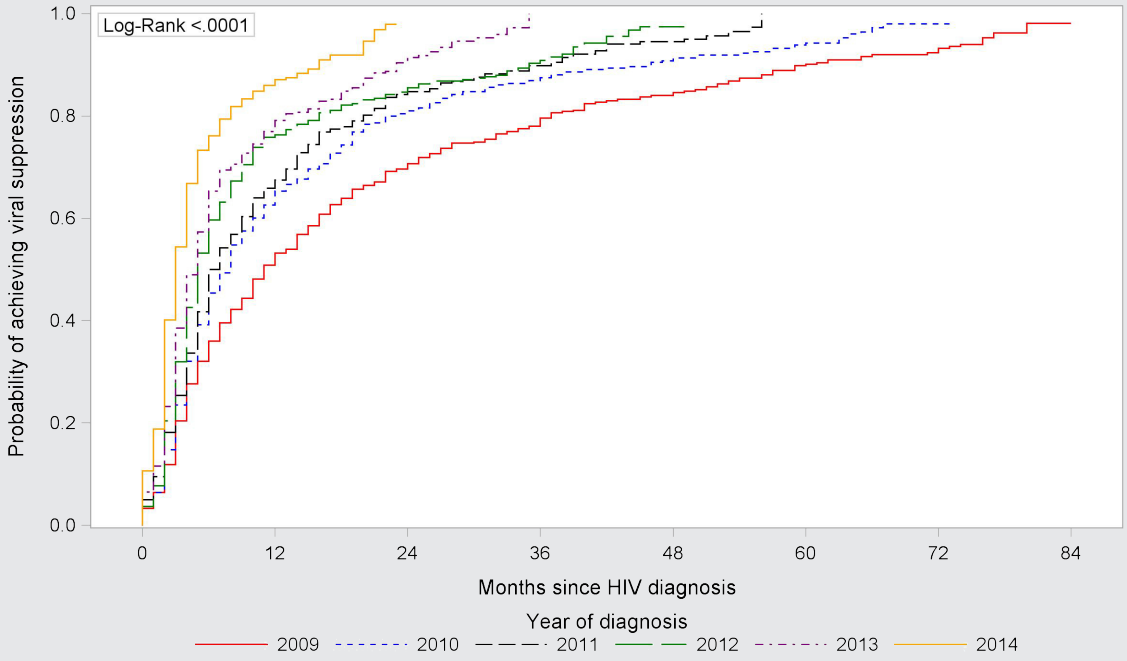
1 Median CD4 count at HIV diagnosis was calculated among persons whose CD4 count at HIV diagnosis was available (N=2,192).

2 Median CD4 count at ART initiation was calculated among persons who started ART and whose CD4 count at HIV diagnosis and CD4 count at ART initiation were available (N=1,706).

Trends in time from HIV diagnosis to viral suppression

Among PLWH, viral suppression (HIV concentrations less than 200 copies/mL) is associated with a lower risk of HIV-related morbidity and mortality and a lower risk of transmitting HIV to others. The treatment goal for PLWH is rapid achievement of and sustained viral suppression. The time from HIV diagnosis to viral suppression has significantly decreased among persons diagnosed in more recent years. Among persons diagnosed with HIV in 2009, half achieved viral suppression within 11 months following their diagnosis (median time to viral suppression) (Figure 3.6). The median time to viral suppression decreased steadily in each of the following years: eight months among persons diagnosed in 2010, six months among persons diagnosed in 2011, five months for persons diagnosed in 2012 and 2013, and three months among persons diagnosed in 2014.

Figure 3.6 Kaplan-Meier estimates of time from HIV diagnosis to viral suppression among persons newly diagnosed with HIV infection by year of diagnosis, 2009-2014, San Francisco



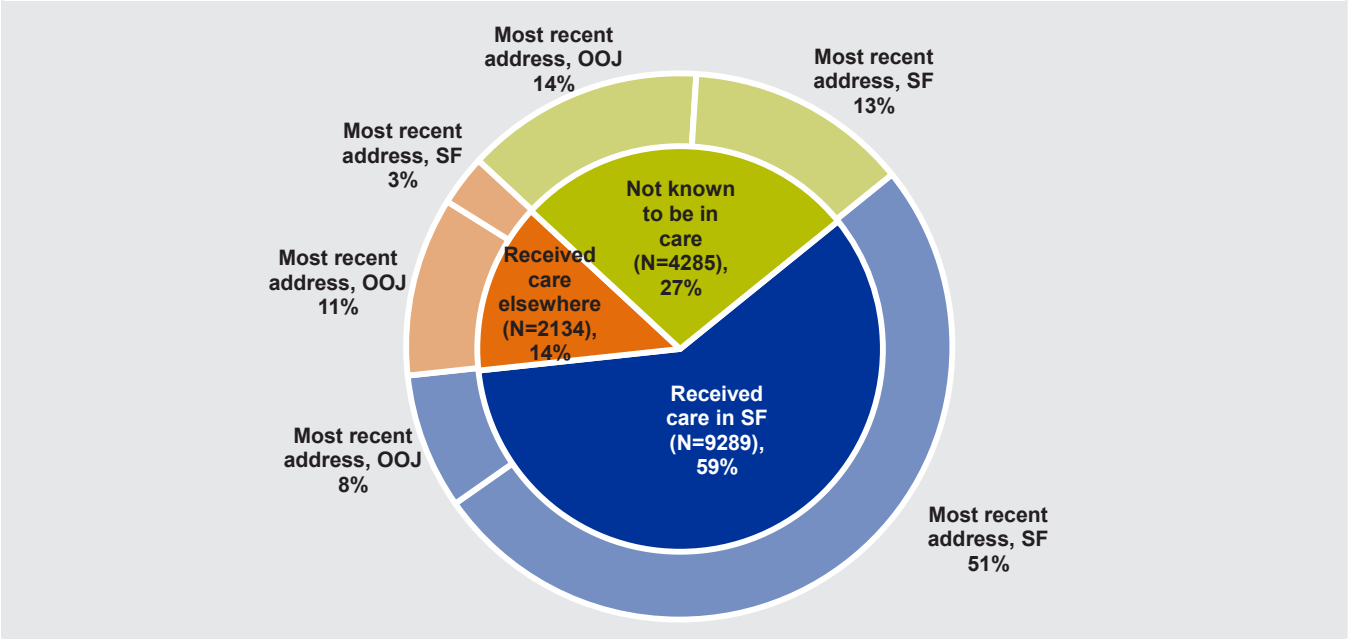
	Median time between diagnosis and viral suppression (months)	Total cases included	No. virally suppressed as of 4/6/2016	No. (%) censored at the last lab test date
2009	11	455	391	64 (14%)
2010	8	430	385	45 (10%)
2011	6	403	361	42 (10%)
2012	5	433	388	45 (10%)
2013	5	368	325	43 (12%)
2014	3	319	279	40 (13%)

Receipt of HIV care among persons living with HIV by current residence

Local health jurisdictions are responsible for reporting all residents newly diagnosed with HIV/AIDS. However, gaps in follow-up data develop due to persons moving in or out of the county following their diagnosis. Laboratory reports of CD4 and viral load test results are used as indicators of care in 2015. Incomplete HIV-related care information may result for San Francisco HIV cases who received care outside of San Francisco. Therefore, to examine the receipt of care among PLWH, we used the most current address and initial residence at diagnosis to study two patterns: 1) San Francisco residents at time of diagnosis who currently live and receive care elsewhere, and 2) residents outside of San Francisco at the time of their initial HIV diagnosis who currently receive care in San Francisco. Current address information is routinely updated through chart reviews, laboratory reports, and other external data sources such as Lexis-Nexis, a national database comprised of 37 million public records to update those addresses for cases that have no follow-up information.

We included PLWH in 2015 who were diagnosed in San Francisco and categorized them by their current address to examine receipt of HIV care patterns. There were 15,708 San Francisco HIV cases diagnosed through December 31, 2014 and alive as of December 31, 2015 (Figure 3.7). Overall, 73% received HIV care in 2015 (59% received care in San Francisco, 14% received care outside of San Francisco). Of the 4,285 (27%) who did not receive HIV care, 2,069 (13%) had a San Francisco current address. Getting these persons into care should be a high priority.

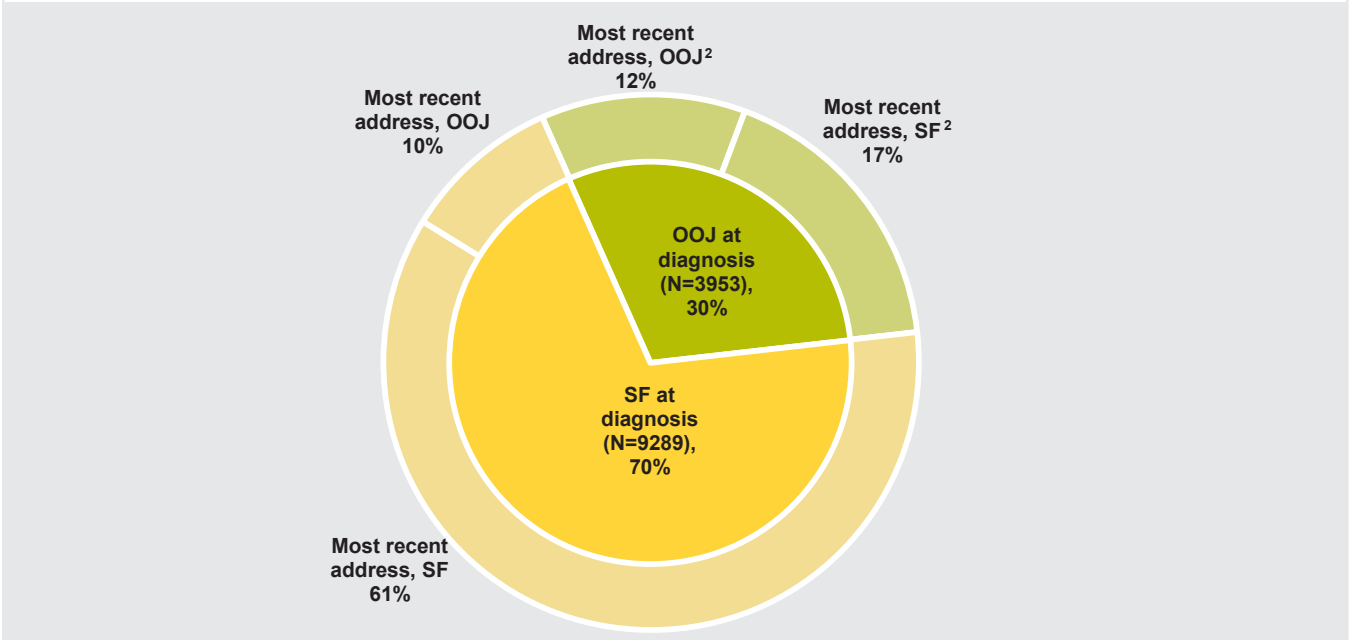
Figure 3.7 Persons living with HIV in 2015 who resided in San Francisco at diagnosis by care and most recent residence status



1 Includes persons who are alive as of December 2015 and have been diagnosed as of December 2014.

We also evaluated all PLWH who received care in San Francisco in 2015, regardless of their residence at time of HIV diagnosis. There were 13,242 persons who had an HIV-related test result (defined as a CD4 or viral load test) in San Francisco in 2015. Of those receiving at least one HIV-related test in 2015 in San Francisco, 30% were originally diagnosed elsewhere (Figure 3.8). Twenty-two percent of PLWH who received care in San Francisco currently reside outside of San Francisco. This quantifies the pattern of care for those who travel to San Francisco for their HIV care. However, the full extent of care utilization and HIV case migration patterns cannot be fully understood until more complete laboratory and residence information is collected and shared between jurisdictions.

Figure 3.8 Persons living with HIV in 2015 who received care in San Francisco by residence at diagnosis and most recent residence status



1 Includes persons who are alive as of December 2015 and have been diagnosed as of December 2014.
2 Most recent address for OOJ residents at diagnosis is less complete because the update on address information is not conducted regularly and consistently.

Medical Monitoring Project (MMP)

Table 3.8 on page 35 describes selected clinical outcomes and care utilization among San Francisco MMP participants during the 2009 to 2013 MMP data collection cycles by year compared to results from the national MMP participants for 2013 (see Technical Notes "Medical Monitoring Project"). Overall, recommended clinical guidelines for people living with HIV were met for the majority of people living with HIV. Almost all patients in San Francisco and the U.S. had one usual place, such as a physician's office or clinic, where they received most of their HIV medical care. ART prescription and viral suppression at the most recent test was high both locally and nationally but a higher percentage of San Franciscans had all viral load tests undetectable in the 12 months before interview (81% versus 68% in 2013). Additionally, testing for syphilis among sexually active participants was more frequent in San Francisco than in the U.S.

In San Francisco, there was an upward trend in the proportion of MMP participants that had a geometric mean CD4 cell count ≥500 cells/μL, all HIV viral load measurements in the past 12 months undetectable, and self-reported ART use from 2009-2013. There was a downward trend from 2009 to 2013 in the proportion of patients who received three or more CD4 or viral load tests in the previous year, viral load measured at least every six months, and screening for gonorrhea, chlamydia and screening for all three STD (gonorrhea, chlamydia and syphilis) among sexually active participants. The laboratory measurements indicate that providers are using fewer labs each year to monitor HIV disease in patients.

Table 3.8 Selected clinical characteristics among MMP participants in San Francisco compared to MMP participants nationally, Medical Monitoring Project, 2009-2013

	San Francisco										United States	
	2009		2010		2011		2012		2013		2013	
	N	%[1]	N	%[1]	N	%[1]	N	%[1]	N	%[1]	N	%[1]
Total sample	**206**	**(100)**	**213**	**(100)**	**216**	**(100)**	**246**	**(100)**	**232**	**(100)**	**5,030**	**(100)**
Stage of disease												
Stage 3: Clinical AIDS or CD4+lymphocyte <200 cells/uL	133	(63.2)	140	(65.1)	143	(62.3)	158	(64.0)	153	(66.1)	3,415	(67.4)
Had usual place of care	205	(99.6)	213	(100)	214	(99.0)	245	(99.6)	230	(99.1)	5,018	(99.8)
Laboratory measures of CD4+ lymphocyte and HIV viral load tests in the 12 months before the interview												
Geometric mean CD4 cell count ≥500 cells/uL	105	(54.2)	121	(59.1)	103	(52.4)	128	(56.1)	142	(63.9)	2,689	(56.5)
Lowest CD4+ cell count ≥500 cells/uL	82	(42.5)	87	(41.3)	85	(43.6)	107	(46.7)	120	(53.6)	2,207	(46.4)
≥3 Outpatient lab tests for CD4+ cell count or HIV viral load	159	(77.7)	158	(74.0)	128	(60.8)	136	(55.6)	119	(51.5)	3,077	(61.1)
≥3 Outpatient lab tests for CD4+ cell count count	149	(72.2)	149	(70.7)	117	(56.5)	129	(52.8)	102	(44.8)	2,846	(56.4)
≥3 Outpatient lab tests for HIV viral load	135	(66.9)	135	(64.0)	112	(54.0)	119	(48.7)	105	(45.8)	2,767	(54.5)
Viral load measured at least once every 6 months	163	(80.4)	169	(79.6)	155	(74.3)	180	(73.9)	162	(70.7)	3,646	(72.0)
CD4+ cell count measured at least once annually	199	(97.0)	211	(99.3)	206	(95.5)	231	(95.0)	222	(96.2)	4,774	(95.5)
Viral Suppression (most recent HIV viral load undetectable[3])	167	(82.3)	163	(76.9)	180	(84.9)	208	(84.3)	200	(86.6)	4,041	(80.1)
All HIV viral load measurements in the past 12 months undetectable	140	(69.1)	150	(71.1)	167	(79.2)	194	(78.7)	187	(81.1)	3,446	(68.0)
Antiretroviral treatment use												
Antiretroviral treatment prescription documented in the medical chart	185	(89.3)	193	(89.2)	206	(95.5)	220	(89.6)	221	(95.0)	4,722	(94.1)
Participant self-reported current ART use	184	(89.8)	194	(91.1)	199	(92.8)	231	(94.0)	221	(95.4)	NA[4]	
Testing for selected sexually transmitted diseases among sexually active participants												
Received Gonorrhea testing	72	(43.8)	65	(40.1)	53	(35.2)	69	(37.4)	58	(33.3)	1,381	(43.3)
Received Chlamydia testing	73	(44.6)	65	(40.1)	53	(35.6)	71	(38.4)	58	(33.3)	1,375	(43.1)
Received Syphilis testing	128	(76.4)	129	(78.1)	101	(60.3)	134	(74.5)	124	(71.5)	2,036	(64.9)
Received testing for all three STDs	65	(39.1)	60	(37.0)	42	(28.0)	62	(33.6)	52	(30.0)	1,178	(36.4)

1 Weighted percent.

2 Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2013 Cycle (June 2013–May 2014). HIV Surveillance Special Report 16.

3 Undetectable defined as ≤200 copies/mL.

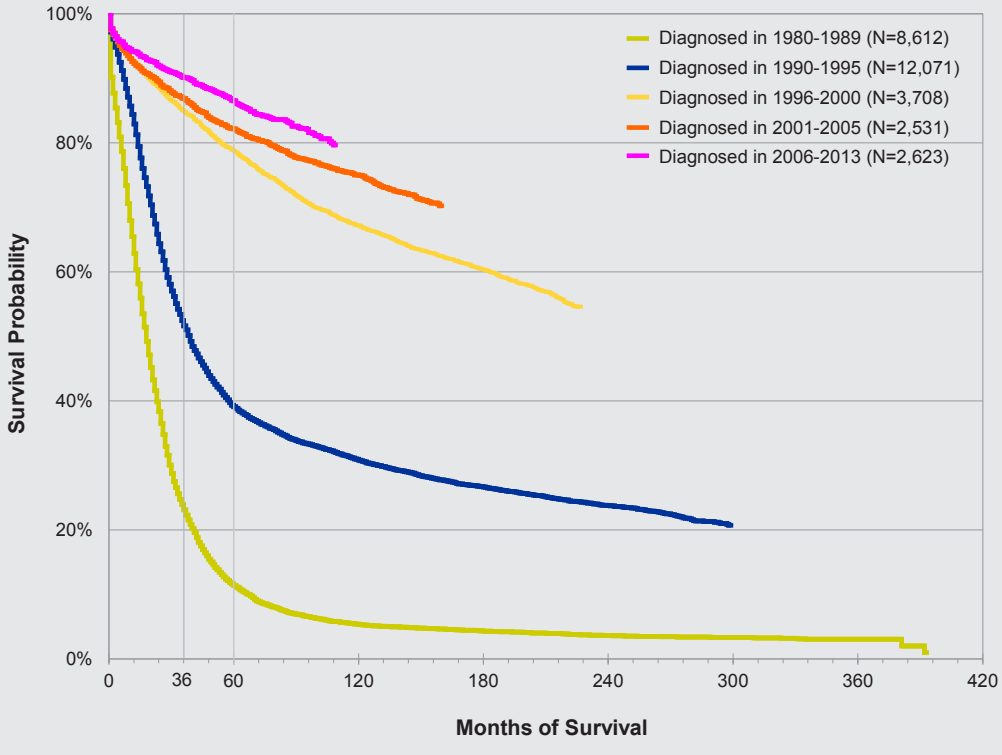
4 Data not available.

4 Survival among Persons with HIV Infection Stage 3 (AIDS)

The Kaplan-Meier survival curves in Figure 4.1 demonstrate continual improvement in survival after HIV infection stage 3 (AIDS) since the 1980s with the greatest improvement in survival beginning in 1996, the year that highly effective antiretroviral therapy became widely available. Survival was poor for persons diagnosed in the first ten years of the epidemic (1980-1989) with a median survival time (survival probability of 50%) of 18 months after HIV stage 3 diagnosis. Median survival time was 39 months for persons diagnosed with HIV stage 3 between 1990 and 1995, and was 241 months for persons diagnosed between 1996 and 2000. Survival among HIV stage 3 cases diagnosed in the two most recent time periods shows continued improvement. Survival after HIV stage 3 diagnosis was calculated for persons diagnosed through 2013 to allow for at least 24 months follow-up time after diagnosis.

The survival probability at three years (36 months) among HIV stage 3 diagnoses increased from 23% in the period 1980-1989 to 52% in the period 1990-1995 followed by an increase to 85% in the period 1996-2000 and smaller but continued increase in more recent years' diagnoses. The survival probability at five years (60 months) after HIV stage 3 diagnosis followed a similar pattern with only 11% of HIV stage 3 cases diagnosed in 1980-1989 surviving for five years. Among persons diagnosed with HIV stage 3 in the years 2006-2013, there was a survival probability of 87% at five years.

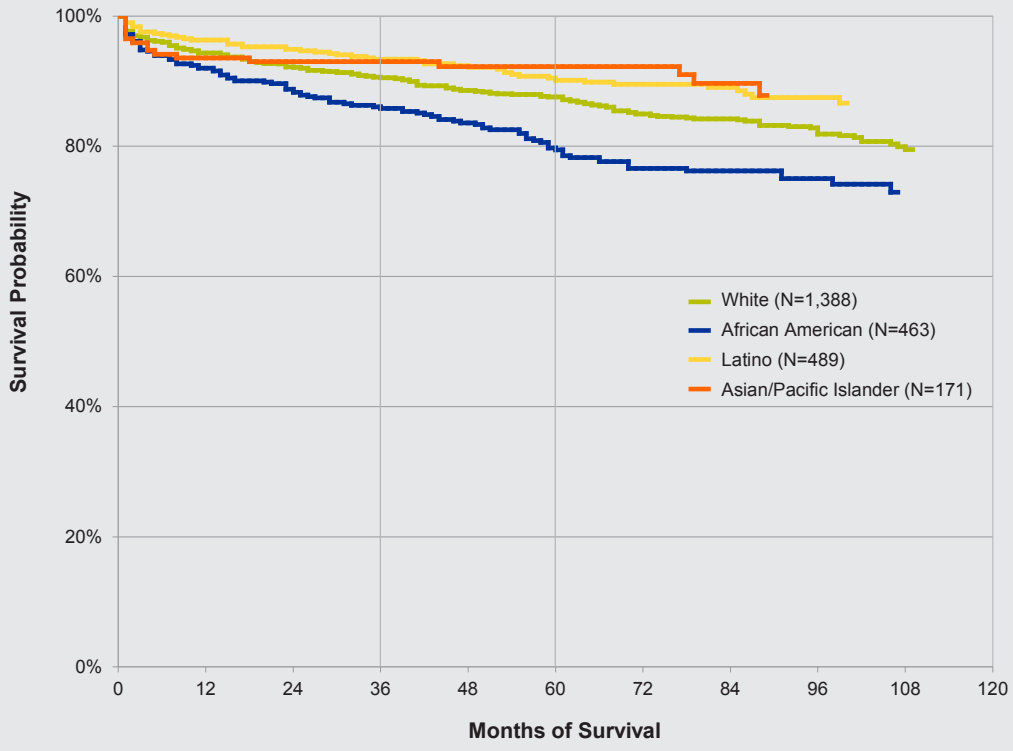
Figure 4.1 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) in five time periods, San Francisco



1 See Technical Notes "HIV infection stage 3 (AIDS) Survival."

Among persons diagnosed with HIV stage 3 in the years 2006-2013, survival probability at both three and five years was lower among African Americans compared to whites, Latinos, and Asian/Pacific Islanders (Figure 4.2). The three- and five-year survival probability of African Americans after HIV stage 3 diagnosis was 86% and 79%, respectively, compared to 91% and 88% among whites, 93% and 90% among Latinos, and 93% and 92% among Asian/Pacific Islanders, respectively.

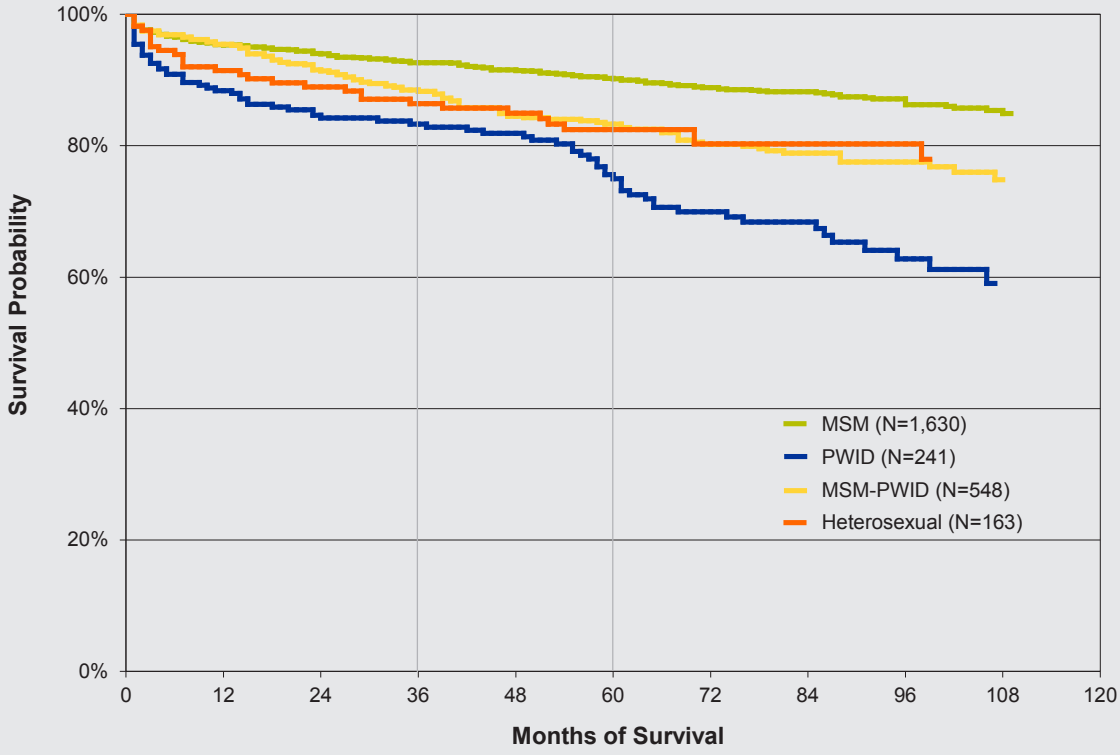
Figure 4.2 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2006 and 2013 by race/ethnicity, San Francisco



1 See Technical Notes "HIV infection stage 3 (AIDS) Survival."

For HIV stage 3 cases diagnosed from 2006 through 2013, the three- and five-year survival probability after HIV stage 3 diagnosis has been highest for MSM and worst for heterosexual PWID (Figure 4.3). Worse survival among PWID partly reflects higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

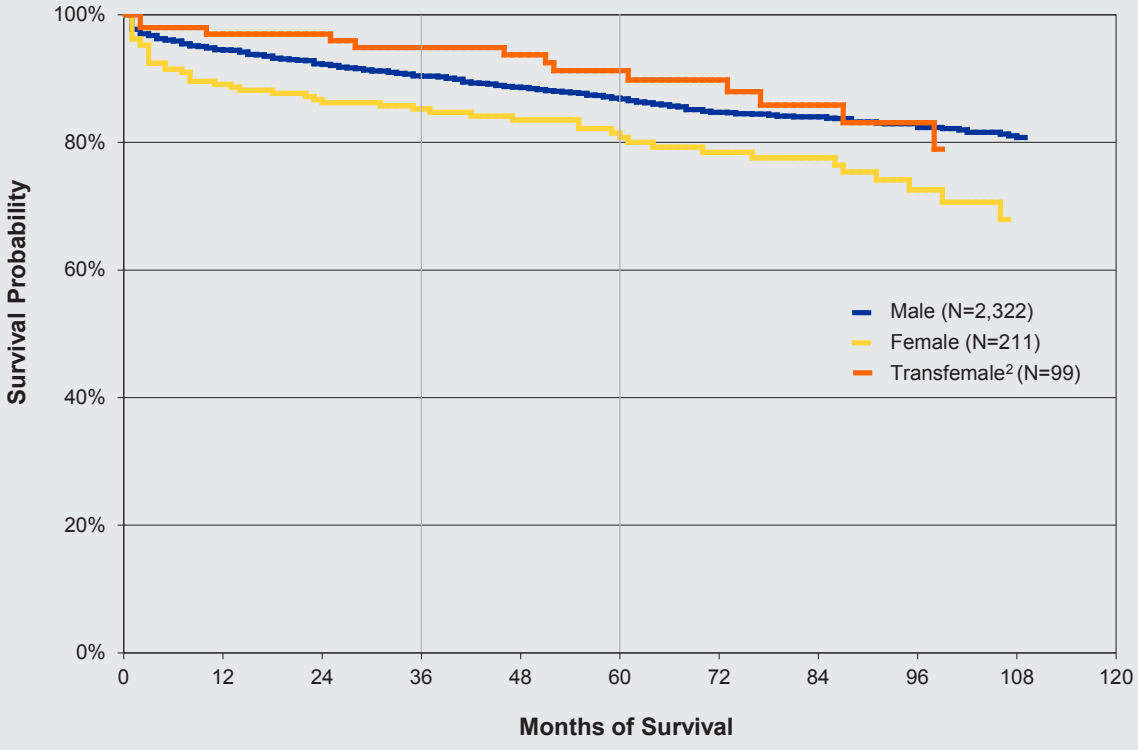
Figure 4.3 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2006 and 2013 by transmission category, San Francisco



1 See Technical Notes "HIV infection stage 3 (AIDS) Survival."

Survival among women with HIV stage 3 diagnosis from 2006 through 2013 is lower than survival among men and transwomen (Figure 4.4). The three- and five-year survival probability among women was 85% and 81%, respectively compared to 90% and 87% respectively among men and 95% and 91% among transwomen. The differences in survival by gender are consistent with lower use of ART and higher proportion of PWID among female HIV cases.

Figure 4.4 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2006 and 2013 by gender, San Francisco

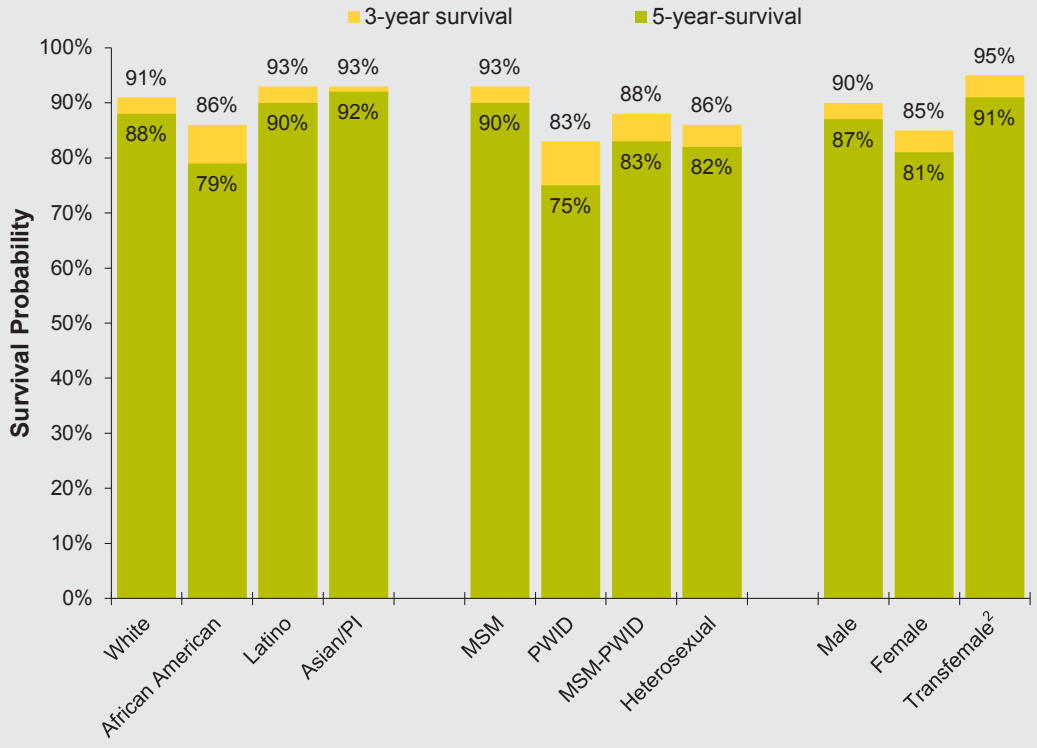


1 See Technical Notes "HIV infection stage 3 (AIDS) Survival."

2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

The overall three-year and five-year survival probability after HIV stage 3 for persons diagnosed between 2006 and 2013 was 90% and 87%, respectively. Differences in survival occurred across race/ethnicity, transmission category, and gender groups (Figure 4.5). African Americans, PWID, and women had lower three-year and five-year survival probabilities compared to other groups.

Figure 4.5 Three-year and five-year survival probability[1] after HIV infection stage 3 (AIDS) for persons diagnosed between 2006 and 2013 by race/ethnicity, transmission category, and gender, San Francisco



1 Calculated from Kaplan-Meier method.

2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

5 Trends in HIV Mortality

As of December 31, 2015, the cumulative number of deaths that have occurred among San Francisco HIV cases was 20,987 (Table 5.1). From 2011 to 2015 the proportion of deaths was relatively stable by gender, racial/ethnic groups, and transmission category. The majority of deaths during each of these years continues to occur among persons aged 50 years and older (62% to 78%) and persons with HIV infection stage 3 (AIDS) (79% to 86%). HIV-related causes of death accounted for 43% of all deaths occurred in 2011, and this proportion declined to 35% in 2012 and 39% in 2013.

Table 5.1 Deaths among persons diagnosed with HIV infection, by demographic and risk characteristics, 2011-2015, San Francisco

	Year of Death										Cumulative Totals as of 12/31/2015
	2011		2012		2013		2014[1]		2015[1]		
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)	
Gender											
Male	209	(89)	211	(89)	222	(85)	186	(85)	175	(89)	19,873
Female	18	(8)	18	(8)	29	(11)	20	(9)	21	(11)	844
Transfemale[2]	7	(3)	8	(3)	10	(4)	12	(6)	1	(1)	270
Race/Ethnicity											
White	128	(55)	149	(63)	149	(57)	121	(56)	110	(56)	15,280
African American	54	(23)	45	(19)	50	(19)	50	(23)	38	(19)	2,672
Latino	32	(14)	31	(13)	37	(14)	34	(16)	24	(12)	2,209
Asian/Pacific Islander/ Native American	6	(3)	3	(1)	9	(3)	3	(1)	8	(4)	542
Multi-Race	14	(6)	9	(4)	16	(6)	10	(5)	17	(9)	284
Transmission Category											
MSM	130	(56)	134	(57)	150	(57)	125	(57)	107	(54)	15,320
PWID	37	(16)	42	(18)	49	(19)	37	(17)	37	(19)	1,740
MSM-PWID	60	(26)	50	(21)	54	(21)	48	(22)	46	(23)	3,372
Heterosexual	4	(2)	7	(3)	5	(2)	8	(4)	5	(3)	236
Other/Unidentified	3	(1)	4	(2)	3	(1)	0	(0)	2	(1)	319
Age at Death (years)											
0 - 29	3	(1)	2	(1)	3	(1)	4	(2)	6	(3)	1,109
30 - 39	25	(11)	12	(5)	13	(5)	10	(5)	9	(5)	7,340
40 - 49	63	(27)	58	(24)	56	(21)	34	(16)	31	(16)	7,633
50 - 59	81	(35)	83	(35)	100	(38)	80	(37)	75	(38)	3,373
60 - 69	42	(18)	60	(25)	66	(25)	62	(28)	51	(26)	1,182
70+	20	(9)	22	(9)	23	(9)	28	(13)	25	(13)	350
HIV Disease Stage											
Stage 0, 1, 2, or unknown	33	(14)	43	(18)	55	(21)	38	(17)	32	(16)	535
Stage 3 (AIDS)	201	(86)	194	(82)	206	(79)	180	(83)	165	(84)	20,452
Cause of Death[3]											
HIV/AIDS-related	101	(43)	84	(35)	103	(39)	--		--		--
Non-HIV/AIDS-related	123	(54)	150	(63)	151	(58)	--		--		--
Unknown	10	(4)	3	(1)	7	(3)	--		--		--
Total	**234**	**(100)**	**237**	**(100)**	**261**	**(100)**	**218**	**(100)**	**197**	**(100)**	**20,987**

1 Data in recent years are incomplete due to reporting delays. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI), which is complete through December 31, 2013.

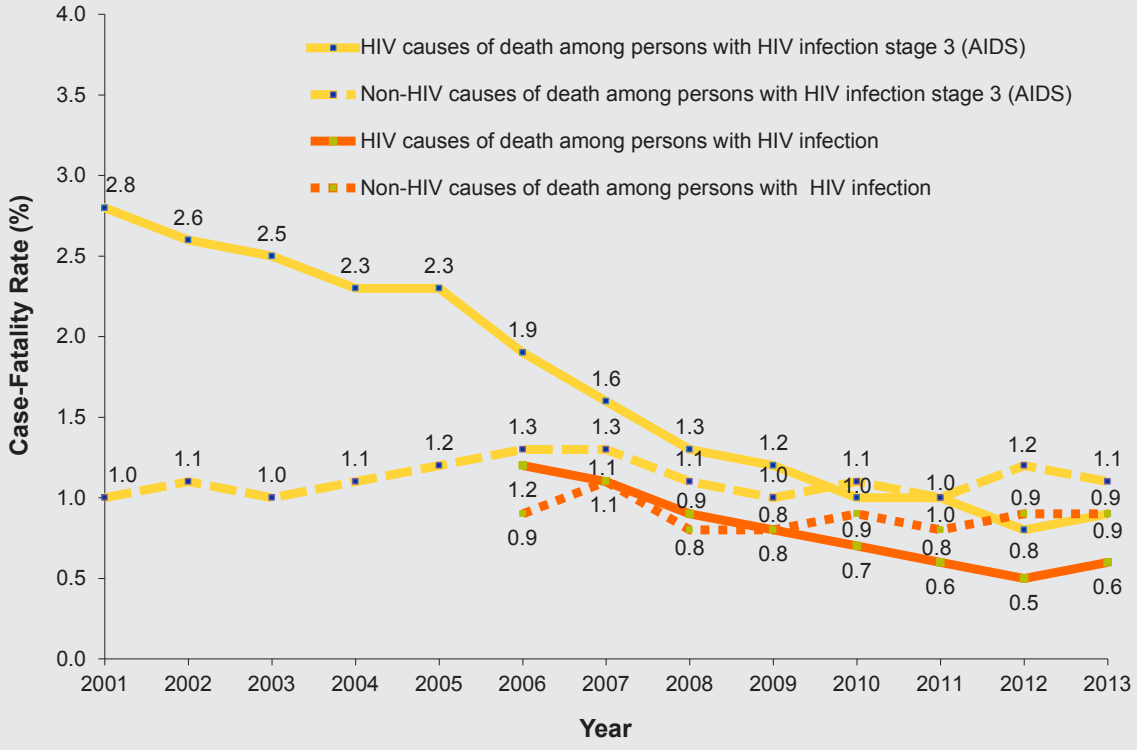
2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

3 Underlying cause of death obtained from the National Death Index is available through 2013. See Technical Notes "Cause of Death."

The trend in case-fatality rates in persons diagnosed with HIV was examined by the single, underlying cause of death for each person. Cause of death information was available for deaths through 2013. The case-fatality rate due to HIV-related causes among persons with HIV stage 3 diagnosis declined from 2.8 per 100 persons in 2001 to 0.9 per 100 persons for 2013 (Figure 5.1). Non-HIV-related causes of death among persons with HIV stage 3 diagnosis fluctuated between 1.0 and 1.3 deaths per 100 persons from 2001 to 2013.

When deaths in all stages of HIV infection were evaluated, case-fatality rates for HIV-related causes declined from 1.2 per 100 persons in 2006 to 0.6 per 100 persons in 2013. Case-fatality rates for non-HIV causes were fairly stable.

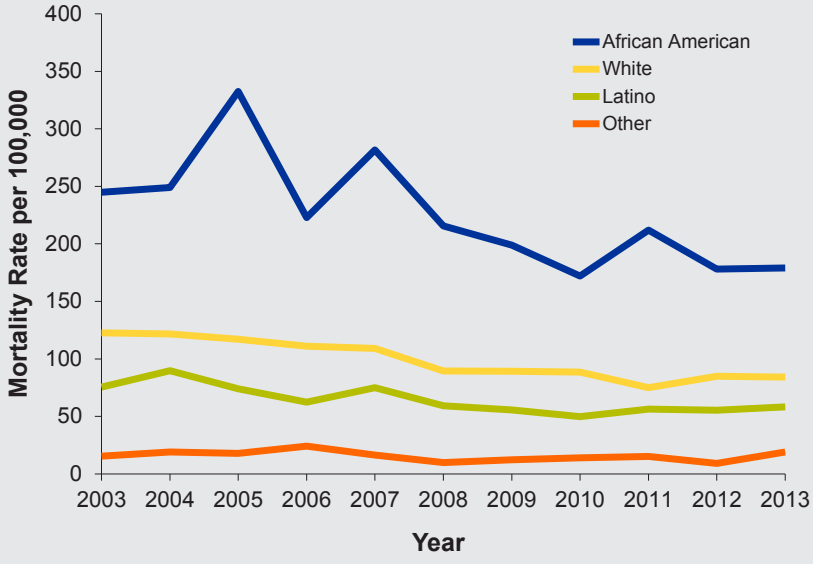
Figure 5.1 Case-fatality rates[1] due to HIV-related and non-HIV-related causes among persons diagnosed with HIV infection, 2001-2013, San Francisco



1 Case-fatality rates are calculated as the number of persons with HIV infection stage 3 (AIDS), or all HIV infection stages, who died each year divided by the number of total HIV infection stage 3 (AIDS), or HIV infection all stage, cases alive during that year. See Technical Notes for "Causes of Death."

The racial distribution in mortality rates among male San Francisco cases from 2003 to 2013 shows that the African American male mortality rate was highest and peaked in 2005 with 333 deaths per 100,000 before declining by nearly half during the subsequent four years (Figure 5.2). African American men also experienced the highest mortality rate in 2013 (179 deaths per 100,000); this rate was 2.1 times higher than that of white men and 3.1 times higher than that of Latino men.

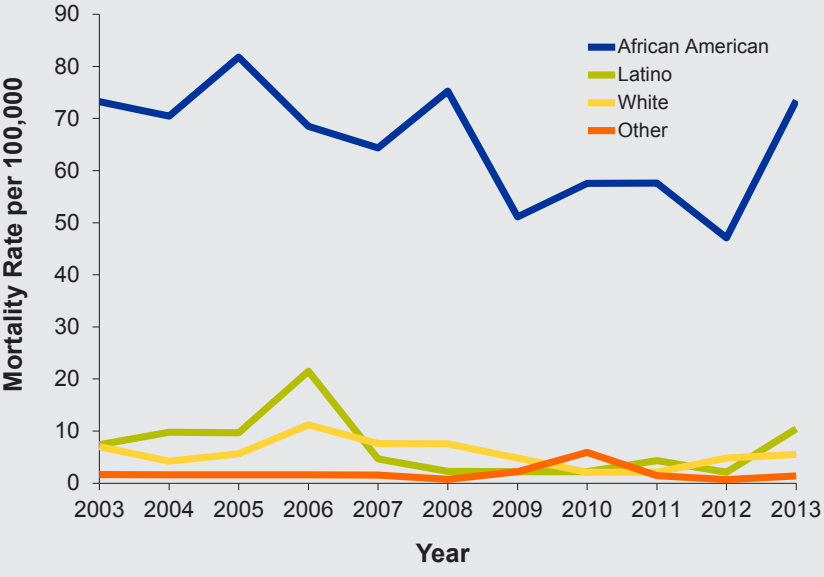
Figure 5.2 Mortality rates[1] among men diagnosed with HIV infection per 100,000 population by race/ethnicity, 2003-2013, San Francisco



1 Mortality rates are calculated as the number of HIV cases who died each year divided by the population by sex and race/ethnicity. See Technical Notes for "HIV Case Rates and HIV Mortality Rates."

Overall, the San Francisco female mortality rate was 8 deaths per 100,000 in 2013, a rate about 8 times lower than the overall male mortality rate, 64 deaths per 100,000. African Americans women experienced higher mortality rates compared to all other racial/ethnic groups from 2003 to 2013 (Figure 5.3). Despite a drop in deaths since 2008, a recent rise in deaths among African American women in 2013 elevated the mortality rate to 73 deaths per 100,000 in 2013.

Figure 5.3 Mortality rates[1] among women diagnosed with HIV infection per 100,000 population by race/ethnicity, 2003-2013, San Francisco



1 Mortality rates are calculated as the number of HIV cases who died each year divided by the population by sex and race/ethnicity. See Technical Notes for "HIV Case Rates and HIV Mortality Rates."

For the years 2010 through 2013, HIV was the underlying cause of death for 41.2% of deaths among persons diagnosed with HIV demonstrating a continued decline in the proportion of underlying causes of death attributed to HIV disease (Table 5.2). Non-AIDS cancers continue to account for the second most frequent underlying cause of death in persons with HIV. Among the non-AIDS cancers, lung cancer is the most frequently occurring underlying cause. Accidents and other traumatic injury deaths constitute an important and relatively frequent cause of death among people with HIV. As HIV becomes a less frequent underlying cause of death, deaths due to diseases of older age and substance use (e.g. drug, alcohol, or tobacco use) are increasingly more common.

Table 5.2 Underlying causes of death among persons diagnosed with HIV infection[1], 2002-2013, San Francisco

	Year of Death					
	2002-2005 N=1,338		2006-2009 N=1,147		2010-2013 N=951	
Underlying Cause of Death[2]	Number	(%)	Number	(%)	Number	(%)
HIV	868	(64.9)	593	(51.7)	392	(41.2)
Non-AIDS cancer	110	(8.2)	124	(10.8)	135	(14.2)
Lung cancer	31	(2.3)	47	(4.1)	30	(3.2)
Liver cancer	20	(1.5)	18	(1.6)	22	(2.3)
Anal cancer	7	(0.5)	6	(0.5)	9	(1.0)
Pancreatic cancer	4	(0.3)	4	(0.4)	8	(0.8)
Leukemia	2	(0.2)	0	(0.0)	6	(0.6)
Colon cancer	3	(0.2)	9	(0.8)	5	(0.5)
Rectal cancer	7	(0.5)	4	(0.4)	4	(0.4)
Accident	62	(4.6)	121	(10.6)	112	(11.8)
Drug overdose	40	(3.0)	93	(8.1)	97	(10.2)
Heart disease	75	(5.6)	88	(7.7)	83	(8.7)
Coronary heart disease	48	(3.6)	46	(4.0)	42	(4.4)
Cardiomyopathy	6	(0.5)	6	(0.5)	4	(0.4)
Suicide	31	(2.3)	50	(4.4)	38	(4.0)
Liver disease	34	(2.5)	27	(2.4)	21	(2.2)
Liver cirrhosis	19	(1.4)	14	(1.2)	14	(1.5)
Alcoholic liver disease	12	(0.9)	11	(1.0)	6	(0.6)
Chronic obstructive pulmonary disease	21	(1.6)	25	(2.2)	17	(1.8)
Diabetes	8	(0.6)	1	(0.1)	11	(1.2)
Mental disorders due to substance use	40	(3.0)	22	(1.9)	10	(1.1)
Cerebrovascular disease	12	(0.9)	8	(0.7)	10	(1.1)
Assault	5	(0.4)	8	(0.7)	9	(1.0)
Viral hepatitis	20	(1.5)	10	(0.9)	8	(0.8)
Pneumonia	12	(0.9)	17	(1.5)	8	(0.8)
Undetermined intent	2	(0.2)	4	(0.4)	6	(0.6)
Renal disease	3	(0.2)	9	(0.8)	3	(0.3)
Septicemia	5	(0.4)	2	(0.2)	2	(0.2)

1 Deceased cases diagnosed with HIV infection that lack cause of death information are not represented in this table.
2 See Technical Notes "Causes of Death."

Among both women and men with HIV, the most frequent, yet declining, underlying cause of death in all time periods was HIV (Table 5.3). The percentages of females and males with an underlying cause of death of HIV were similar within each time period. In all time periods and compared to women with HIV, men with HIV had a higher proportion of deaths due to non-AIDS cancers and suicide as the underlying causes. During all three periods, women had a higher proportion of underlying causes of death due to chronic obstructive pulmonary disease than did men. Over the three time periods, women had a larger increase in the proportion of accidents as the underlying cause of death compared to men.

Table 5.3 Underlying causes of death among persons diagnosed with HIV infection[1] by sex, 2002-2013, San Francisco

	Year of Death					
	2002-2005		2006-2009		2010-2013	
	Female	Male	Female	Male	Female	Male
Underlying Cause of Death[2]	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Total	**117**	**1,221**	**118**	**1,029**	**87**	**864**
HIV	75 (64.1)	793 (65.0)	60 (50.9)	533 (51.8)	34 (39.1)	358 (41.4)
Non-AIDS cancer	6 (5.1)	104 (8.5)	5 (4.2)	119 (11.6)	5 (5.8)	130 (15.1)
Accident	4 (3.4)	58 (4.8)	17 (14.4)	104 (10.1)	18 (20.7)	94 (10.9)
Drug overdose	3 (2.6)	37 (3.0)	15 (12.7)	78 (7.6)	15 (17.2)	82 (9.5)
Heart disease	8 (6.8)	67 (5.5)	6 (5.1)	82 (8.0)	7 (8.1)	76 (8.8)
Suicide	0 (0.0)	31 (2.5)	2 (1.7)	48 (4.7)	0 (0.0)	38 (4.4)
Liver disease	3 (2.6)	31 (2.5)	5 (4.2)	22 (2.1)	2 (2.3)	19 (2.2)
Chronic obstructive pulmonary disease	5 (4.3)	16 (1.3)	7 (5.9)	18 (1.8)	3 (3.5)	14 (1.6)
Mental disorders due to substance use	6 (5.1)	34 (2.8)	6 (5.1)	16 (1.6)	1 (1.2)	9 (1.0)
Cerebrovascular disease	4 (3.4)	8 (0.7)	0 (0.0)	8 (0.8)	2 (2.3)	8 (0.9)
Viral hepatitis	3 (2.6)	17 (1.4)	3 (2.5)	7 (0.7)	0 (0.0)	8 (0.9)
Pneumonia	1 (0.9)	11 (0.9)	3 (2.5)	14 (1.4)	2 (2.3)	6 (0.7)

1 Deceased cases diagnosed with HIV infection that lack cause of death information are not represented in this table.
2 See Technical Notes "Causes of Death."

Table 5.4 shows both underlying and contributory causes of death among persons diagnosed with HIV. The proportion of deaths in which HIV was either the underlying or contributory cause declined from 81.1% in the period 2002-2005 to 69.6% during the following four years, and then to 63.1% in the years 2010-2013. Heart disease, particularly ischemic heart disease, continued to be the second most common cause of death among HIV diagnosed persons in San Francisco. Non-AIDS cancers remained a frequent cause of death among persons diagnosed with HIV and of these, lung, liver, and anal cancers are the most common and were likely due to tobacco use, chronic hepatitis B and C infections, and infection with the human papilloma virus. Diseases associated with substance use and mental illness continued to account for a substantial proportion of deaths and have increased overtime, particularly in relationship to the years 2002-2005.

Table 5.4 Multiple causes of death among persons diagnosed with HIV infection[1], 2002-2013, San Francisco

	Year of Death					
	2002-2005 N=1,338		2006-2009 N=1,147		2010-2013 N=951	
Multiple Causes of Death[2]	Number	(%)	Number	(%)	Number	(%)
HIV	1,085	(81.1)	798	(69.6)	600	(63.1)
Heart disease	277	(20.7)	267	(23.3)	262	(27.6)
Coronary heart disease	81	(6.1)	77	(6.7)	85	(8.9)
Cardiomyopathy	26	(1.9)	18	(1.6)	22	(2.3)
Non-AIDS cancer	161	(12.0)	169	(14.7)	181	(19.0)
Lung cancer	35	(2.6)	50	(4.4)	36	(3.8)
Liver cancer	23	(1.7)	24	(2.1)	29	(3.1)
Anal cancer	12	(0.9)	8	(0.7)	12	(1.3)
Pancreatic cancer	4	(0.3)	5	(0.4)	10	(1.1)
Leukemia	6	(0.5)	3	(0.3)	9	(1.0)
Hodgkin lymphoma	6	(0.5)	9	(0.8)	6	(0.6)
Rectal cancer	10	(0.8)	6	(0.5)	5	(0.5)
Colon cancer	3	(0.2)	10	(0.9)	5	(0.5)
Viral hepatitis	215	(16.1)	132	(11.5)	122	(12.8)
Liver disease	213	(15.9)	146	(12.7)	120	(12.6)
Liver cirrhosis	96	(7.2)	66	(5.8)	71	(7.5)
Alcoholic liver disease	16	(1.2)	12	(1.1)	6	(0.6)
Accident	76	(5.7)	134	(11.7)	116	(12.2)
Drug overdose	52	(3.9)	101	(8.8)	98	(10.3)
Pneumonia	182	(13.6)	148	(12.9)	99	(10.4)
Septicemia	153	(11.4)	111	(9.7)	94	(9.9)
Renal disease	149	(11.1)	115	(10.0)	94	(9.9)
Mental disorders due to substance use	114	(8.5)	109	(9.5)	92	(9.7)
Chronic obstructive pulmonary disease	65	(4.9)	78	(6.8)	62	(6.5)
Diabetes	37	(2.8)	40	(3.5)	56	(5.9)
Suicide	32	(2.4)	50	(4.4)	38	(4.0)
Cerebrovascular disease	39	(2.9)	37	(3.2)	28	(2.9)

1 Deceased cases diagnosed with HIV infection that lack cause of death information are not represented in this table.

2 Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

Among both women and men, HIV was the most frequent underlying or contributory cause of death in all time periods although the proportions declined over the three time periods (Table 5.5). Heart disease was the second most frequent underlying or contributory cause of death in both women and men and these proportions increased. In the most recent time period, heart disease was listed as a cause of death in 35.6% of deaths among women and 26.7% of deaths among men. Deaths from non-AIDS cancers accounted for a greater proportion of deaths in men than in women. In the most recent time period, deaths in which viral hepatitis, pneumonia, renal disease, accidents including drug overdose, mental disorders due to substance use and chronic obstructive pulmonary diseases were listed as a cause of death accounted for a higher proportion of deaths in women than in men.

Table 5.5 Multiple causes of death among persons diagnosed with HIV infection[1] by sex, 2002-2013, San Francisco

	Year of Death					
	2002-2005		2006-2009		2010-2013	
	Female	Male	Female	Male	Female	Male
Multiple Causes of Death[2]	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Total	**117**	**1,221**	**118**	**1,029**	**87**	**864**
HIV	91 (77.8)	994 (81.4)	82 (69.5)	716 (69.6)	53 (60.9)	547 (63.3)
Heart disease	22 (18.8)	255 (20.9)	29 (24.6)	238 (23.1)	31 (35.6)	231 (26.7)
Non-AIDS cancer	10 (8.6)	151 (12.4)	8 (6.8)	161 (15.7)	7 (8.1)	174 (20.1)
Viral hepatitis	19 (16.2)	196 (16.1)	15 (12.7)	117 (11.4)	18 (20.7)	104 (12.0)
Liver disease	18 (15.4)	195 (16.0)	21 (17.8)	125 (12.2)	11 (12.6)	109 (12.6)
Accident	8 (6.8)	68 (5.6)	20 (17.0)	114 (11.1)	18 (20.7)	98 (11.3)
Drug overdose	6 (5.1)	46 (3.8)	16 (13.6)	85 (8.3)	15 (17.2)	83 (9.6)
Pneumonia	20 (17.1)	162 (13.3)	15 (12.7)	133 (12.9)	14 (16.1)	85 (9.8)
Septicemia	19 (16.2)	134 (11.0)	13 (11.0)	98 (9.5)	9 (10.3)	85 (9.8)
Renal disease	16 (13.7)	133 (10.9)	14 (11.9)	101 (9.8)	12 (13.8)	82 (9.5)
Mental disorders due to substance use	20 (17.1)	94 (7.7)	20 (17.0)	89 (8.7)	12 (13.8)	80 (9.3)
Chronic obstructive pulmonary disease	11 (9.4)	54 (4.4)	15 (12.7)	63 (6.1)	12 (13.8)	50 (5.8)

1 Deceased cases diagnosed with HIV infection that lack cause of death information are not represented in this table.
2 Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

We analyzed rates of drug-related causes of death among San Francisco residents using data obtained from the Vital Record Business Intelligence System (VRBIS, see Technical Notes "Causes of Death"). VRBIS includes all deaths that occurred in San Francisco and all deaths among San Francisco residents. Drug-related causes were identified using the description of injury in VRBIS if there was any mention of 'drug' on the death certificate for how the injury occurred. There were a total of 33,226 deaths among San Francisco residents from January 1, 2010 through December 31, 2015 (Table 5.6). Of these, 1,011 (3%) occurred among persons who were diagnosed and reported with HIV. Of the 32,215 deaths in San Francisco residents who were not reported with HIV, 969 (3%) were attributed to drugs. In contrast, of the 1,011 deaths in persons diagnosed and reported with HIV, 156 (15%) were due to drug-related causes.

Drug-related deaths in San Francisco residents who were not reported with HIV, increased in absolute numbers and as a proportion of all deaths from 2010 through 2014, the year in which it peaked, and then declined in 2015. Among San Francisco residents who were reported with HIV, the number of drug-related deaths increased from 22 in 2010 to 33 in 2012 then dropped to 21 in 2014. Although the proportion of deaths due to drugs peaked earlier among persons reported with HIV than among all San Francisco residents, the overall trends are similar for persons with HIV and the general population.

Table 5.6 Trends in drug-related causes of death among San Francisco residents, 2010-2015

	Deaths among SF residents who were not reported with HIV[1]			Deaths among SF residents reported with HIV[1]			Deaths among all SF residents
	Non-drug-related deaths N=31,246	Drug-related deaths N=969		Non-drug-related deaths N=855	Drug-related deaths N=156		
Year of death	Number	Number	(%)	Number	Number	(%)	Number
2010	5,115	139	(2.7)	152	22	(12.6)	5,428
2011	5,283	161	(3.0)	144	28	(16.3)	5,616
2012	5,276	157	(2.9)	139	33	(19.2)	5,605
2013	5,252	182	(3.4)	143	29	(16.9)	5,606
2014	4,987	198	(3.8)	135	21	(13.5)	5,341
2015	5,333	132	(2.4)	142	23	(13.9)	5,630

1 VRBIS data were linked with the SF HIV case registry to determine deaths among SF residents who were reported with HIV or not. This analysis was restricted to SF residents at time of death who died either in SF or another jurisdiction. Data in this table for deaths among SF residents reported with HIV does not include SF cases at time of diagnosis who moved outside of SF before death.

6 Health Insurance Status at Time of HIV Diagnosis

Insurance status at time of initial HIV diagnosis differs by racial/ethnic group (Figure 6.1). Over 40% of whites had private insurance in 2011-2015. In contrast, over 40% of African Americans were publicly insured during this time period. No type of insurance was predominant for Latinos or other racial/ethnic groups, although Latino cases had the highest proportions with no insurance coverage.

Figure 6.1 Trends in health insurance status at time of HIV diagnosis by race/ethnicity, 2011-2015, San Francisco

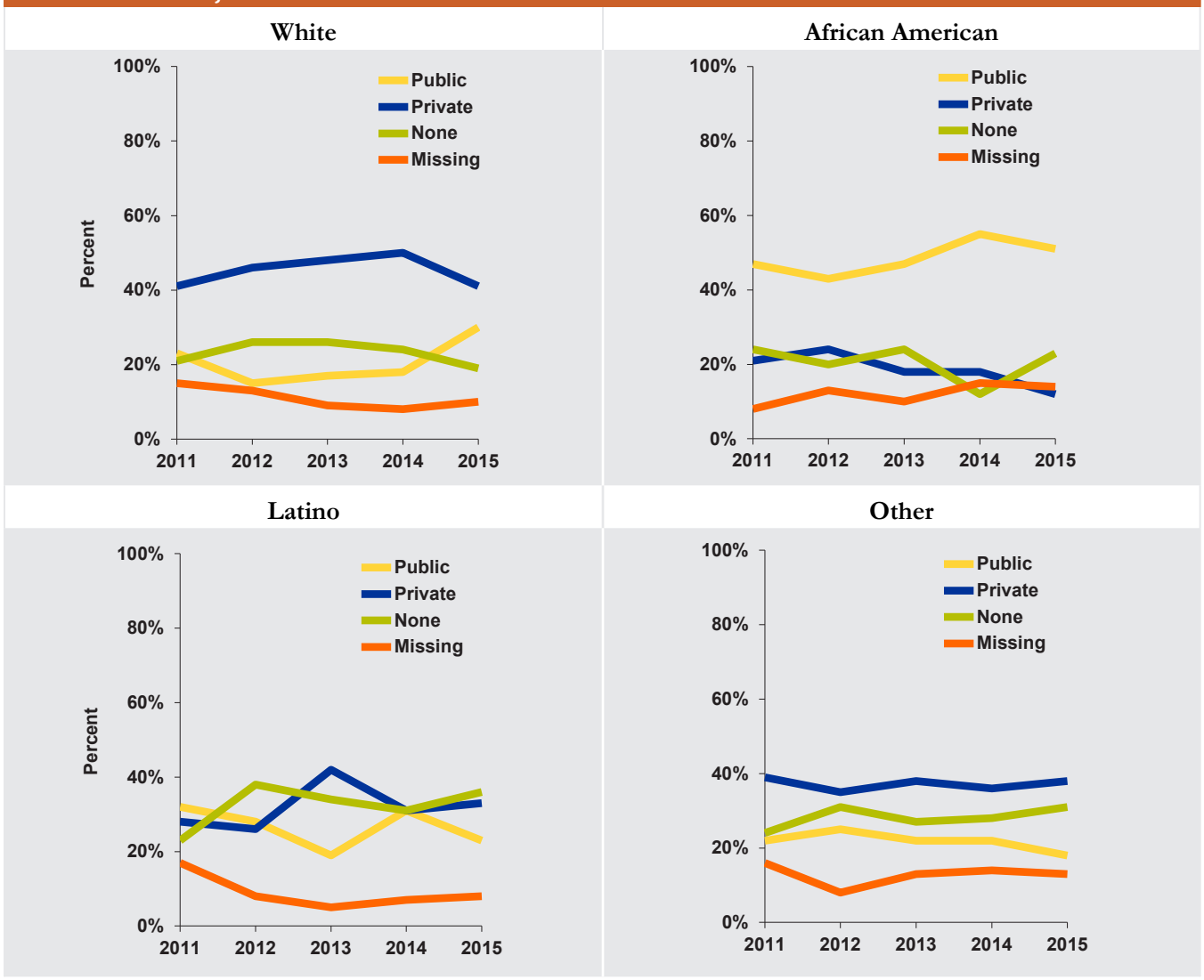
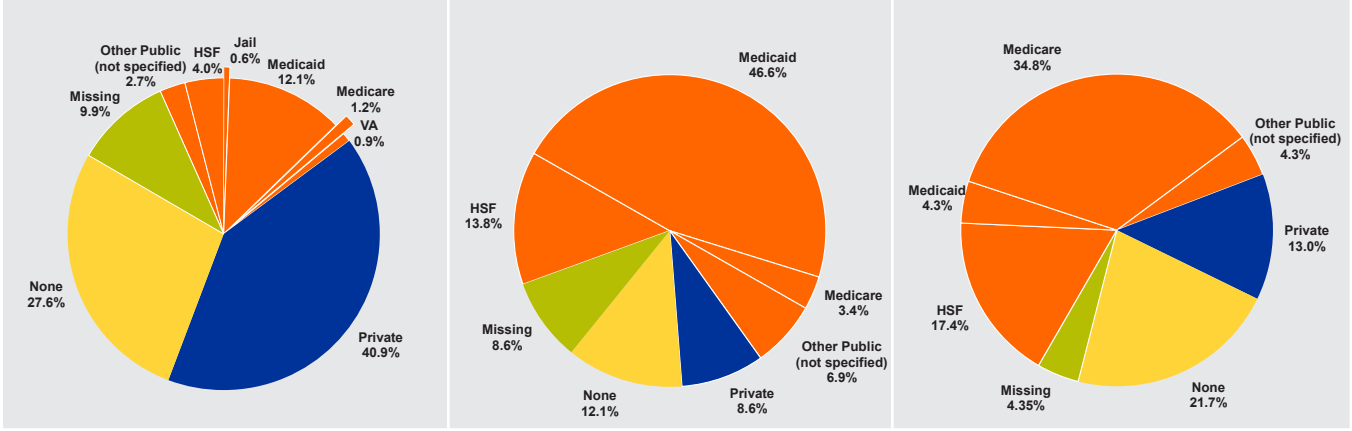


Figure 6.2 shows the distribution of insurance types by gender for HIV cases newly diagnosed between 2013 and 2015. Compared to males, female and transfemale cases diagnosed during this time period had higher proportions with public insurance (including MediCal, Medicare, Healthy San Francisco, Veteran Administration, county jail, and other unspecified public insurance). At diagnosis, 47% of females and 35% of transfemales reported using MediCal, state-sponsored insurance for persons meeting financial criteria. In addition, Healthy San Francisco (HSF), the county-sponsored health access program for residents that became available in 2008, was used by 4% of males, 14% of females, and 17% of transfemales at time of diagnosis. Over one-quarter of the males, 12% of females, and 22% of transfemales had no health insurance at time of diagnosis.

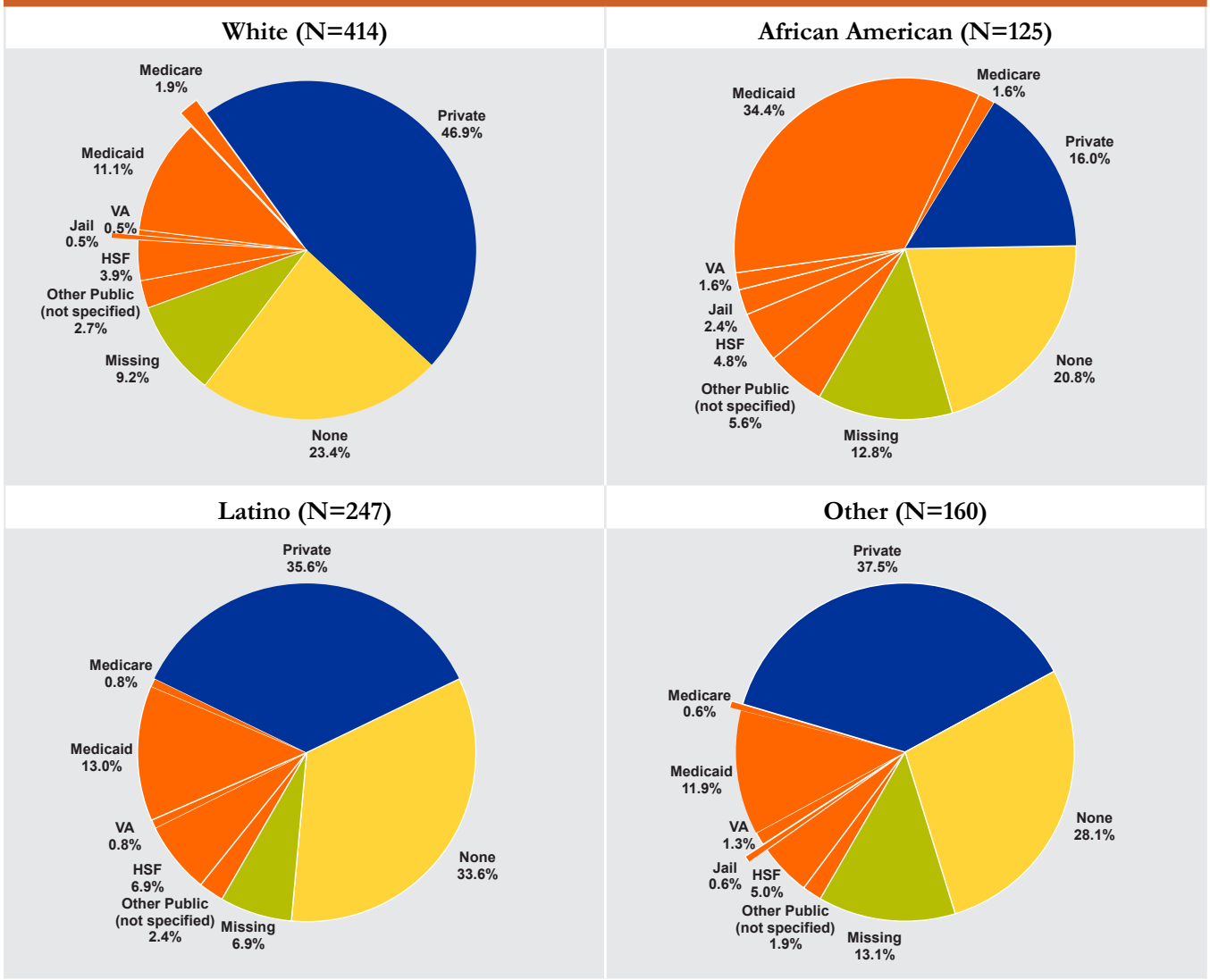
Figure 6.2 Health insurance status at time of HIV diagnosis by gender, 2013-2015, San Francisco



1 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Figure 6.3 shows the distribution of insurance types by racial/ethnic groups for HIV cases newly diagnosed between 2013 and 2015. Sixty-seven percent of white cases were insured, 66% of African Americans, 60% of Latinos, and 59% of other racial/ethnic (non-Latino) cases were insured at diagnosis. In the past three years, African Americans diagnosed with HIV reported having publicly-funded insurance types more frequently than other racial/ethnic groups. Latinos had the highest proportion using HSF for health care coverage at time of diagnosis (7%).

Figure 6.3 Health insurance status at time of HIV diagnosis by race/ethnicity, 2013-2015, San Francisco

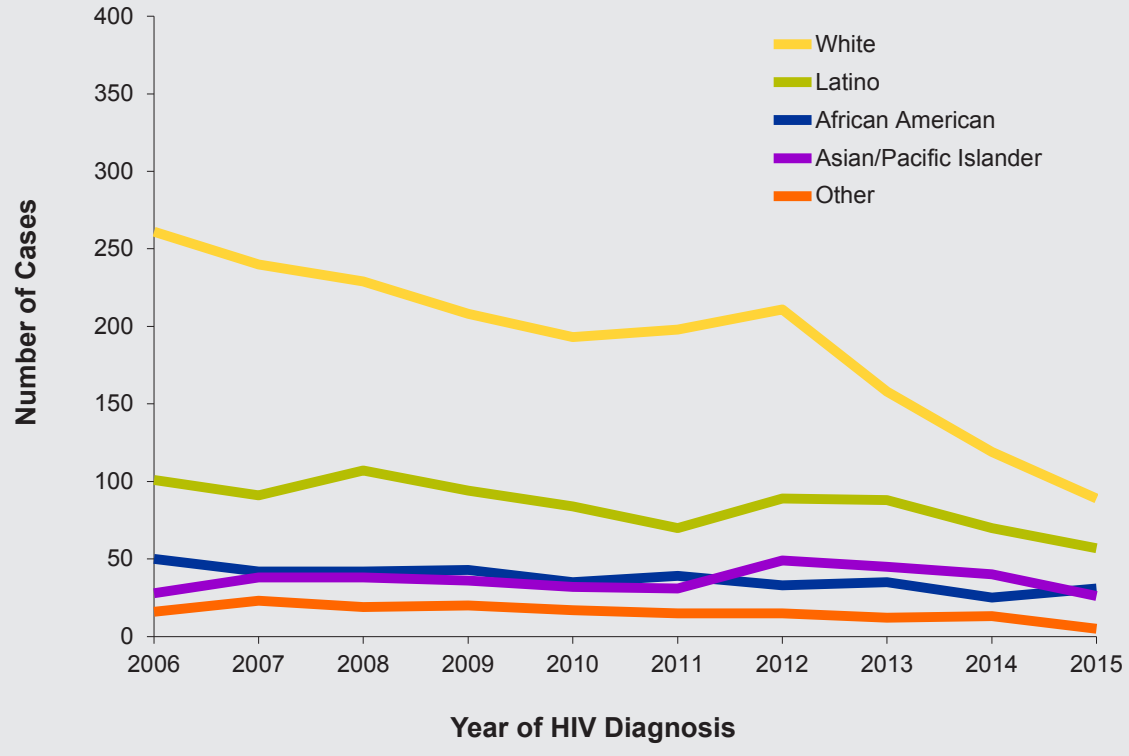


7 HIV among Men who Have Sex with Men

HIV surveillance data

Among MSM newly diagnosed with HIV from 2006 through 2015, whites account for the largest number of cases in San Francisco (Figure 7.1). The number of MSM newly diagnosed with HIV from 2006 to 2015 declined in all racial/ethnic groups and this decline was most pronounced among white MSM. The number of MSM cases among Asian/Pacific Islanders increased from 28 in 2006 to a high of 49 in 2012 and then decreased to 26 in 2015.

Figure 7.1 Number of MSM newly diagnosed with HIV infection[1] by race/ethnicity, 2006-2015, San Francisco



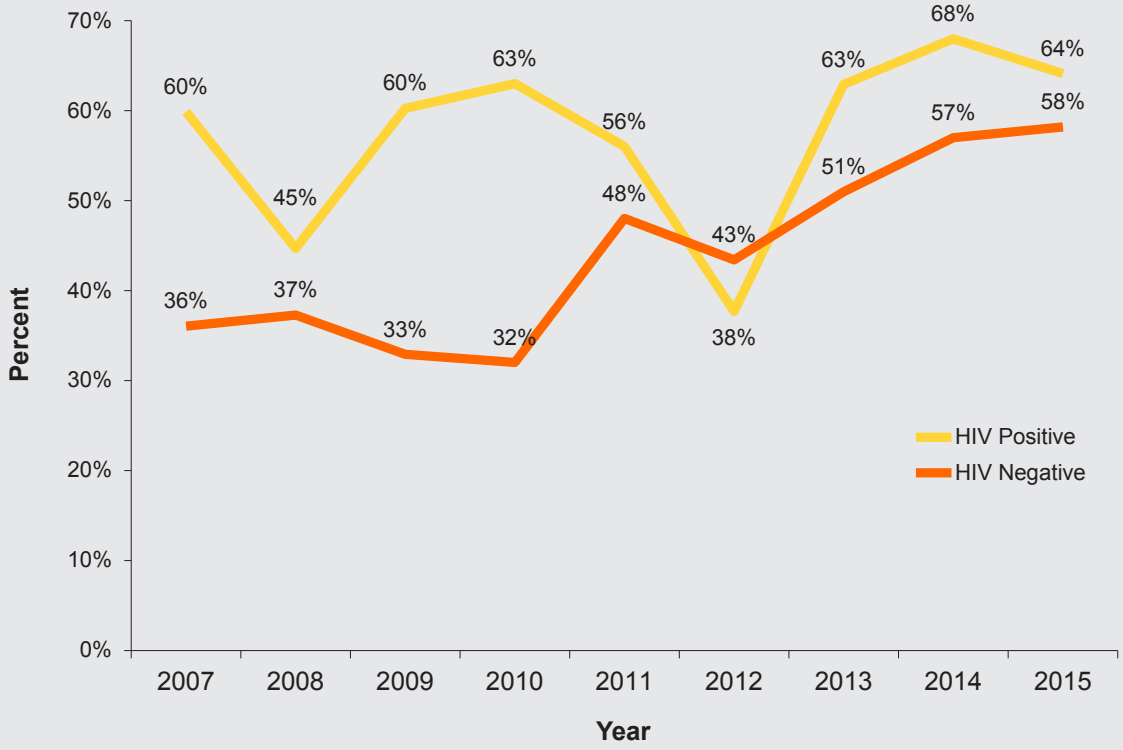
1 Includes MSM and MSM-PWID with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

HIV sexual behavior data

The STOP AIDS Project collects information on sexual behaviors and self-reported HIV status of MSM who participate in their outreach prevention activities in San Francisco. These data are collected anonymously to track trends in HIV-related risk behavior. Such data may not be representative of all MSM in San Francisco. In this section, trends in condomless anal intercourse in the past six months are assessed for MSM who are 18 years and older and reside in San Francisco.

Figure 7.2 shows trends in any reported condomless anal intercourse (either insertive or receptive) by self-reported HIV serostatus. Between 2007 and 2015, the percent of HIV negative MSM who reported any condomless anal intercourse steadily declined from 36% in 2007 to 32% in 2010, but rose to a high of 58% in 2015. Among HIV positive men, the percent reporting any condomless anal intercourse has generally remained over 60% with a high of 68% in 2014. Caution must be given to low numbers of MSM interviewed, especially among HIV positive men each year, which may influence the fluctuating proportions.

Figure 7.2 Percent of MSM reporting condomless anal intercourse in the last six months by self-reported HIV status, the STOP AIDS Project, 2007-2015, San Francisco



Sexually transmitted diseases among MSM

Sexually transmitted diseases (STD) serve as a marker of condomless sex and some have been shown to increase HIV transmission. Figure 7.3 shows trends in male rectal gonorrhea and male gonococcal proctitis among MSM in San Francisco from 2006 through 2015 by HIV serostatus. Data on male rectal gonorrhea originate from case reporting by laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only and represent men with symptomatic infection. Among men, rectal gonorrhea is a biological marker for condomless receptive anal sex.

The last five years has seen an increase in reported cases of male rectal gonorrhea irrespective of HIV serostatus. The number of reported cases of male rectal gonorrhea has been higher among HIV negative men than among HIV infected men beginning in 2008. The relatively stable numbers of cases of male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening or reporting.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, underreporting, and a large proportion of asymptomatic cases.

Figure 7.3 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2006-2015, San Francisco

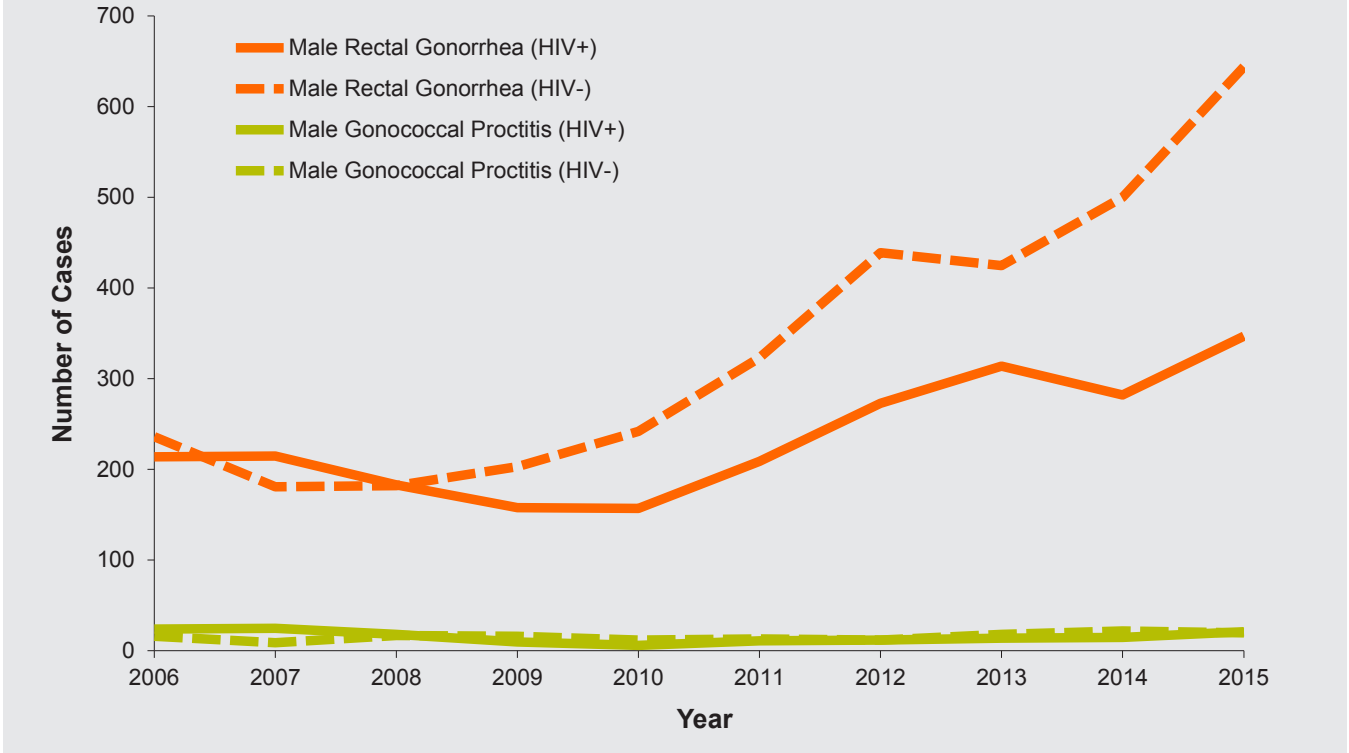
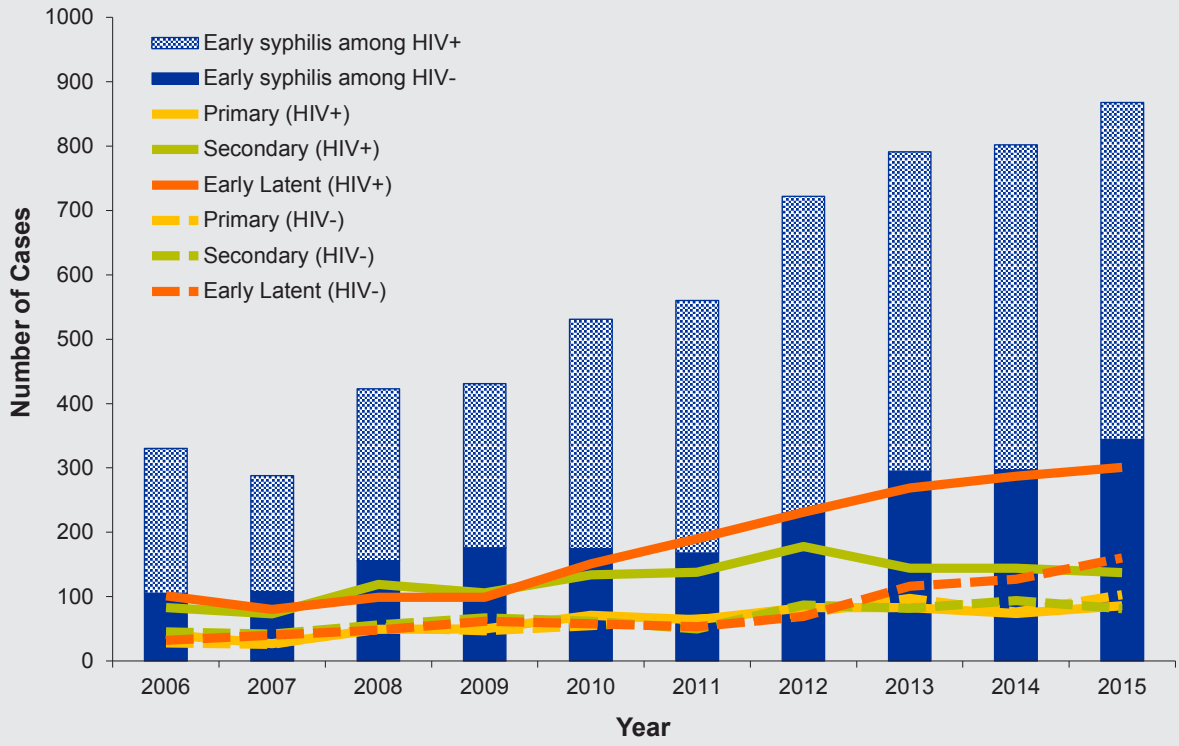


Figure 7.4 shows trends in early syphilis cases (primary, secondary, and early latent) among MSM in San Francisco from 2006 through 2015 by HIV serostatus. Data originate from case reporting by laboratories and health providers throughout the city and from the municipal STD clinic, the site where most of the patients were diagnosed. Like gonorrhea, syphilis is a biological marker for condomless sex. The increase from 2007 to 2015 in early latent is dramatic, especially among HIV-positive MSM who account for a greater proportion of early syphilis cases than HIV-negative MSM.

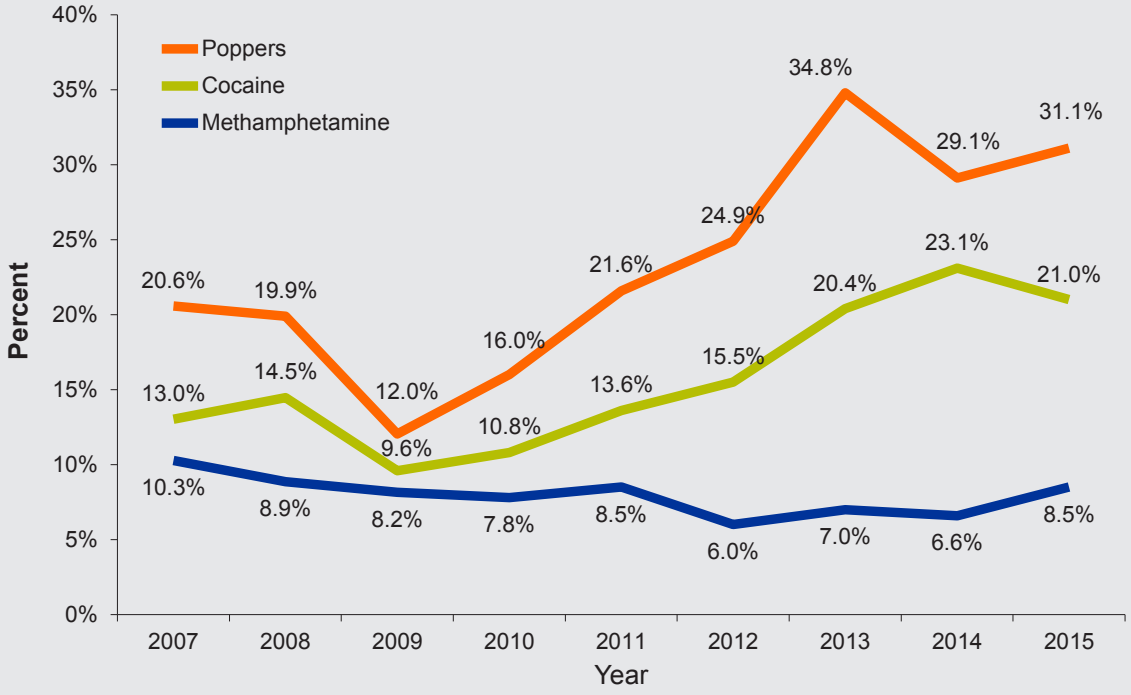
Figure 7.4 Early syphilis among MSM by HIV serostatus, 2006-2015, San Francisco



Substance use

The STOP AIDS Project records substance use among San Francisco MSM. Figure 7.5 shows the percent of MSM who used methamphetamines, "poppers," or cocaine in the past six months for the years 2007 to 2015. The most recent years show an increase in cocaine use with a high of 23.1% in 2014 and an increase in poppers use from 12.0% in 2009 to 34.8% in 2013 followed by a decrease to 31.1% in 2015. Methamphetamine use has declined since 2007 but 2015 shows a possible increase back to 8.5%.

Figure 7.5 Substance use among MSM, the STOP AIDS Project, 2007-2015, San Francisco

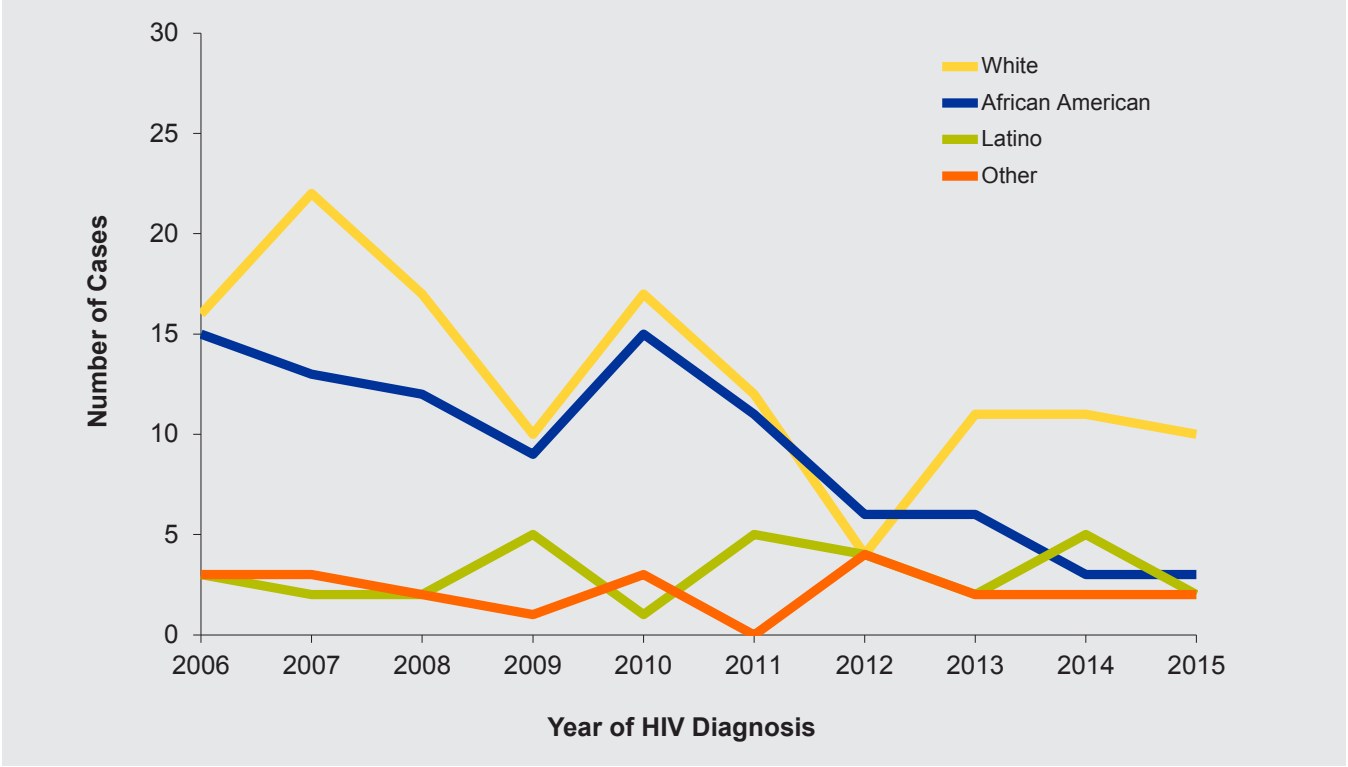


8 HIV among People who Inject Drugs

HIV surveillance data

From 2006 to 2015, whites accounted for 47% of non-MSM PWID cases, African Americans 34%, and Latinos 11% (Figure 8.1). The number of African American non-MSM PWID cases has declined the most from 15 in 2006 to 3 in 2015, followed by white non-MSM PWID cases which declined from 22 in 2007 to 10 in 2015.

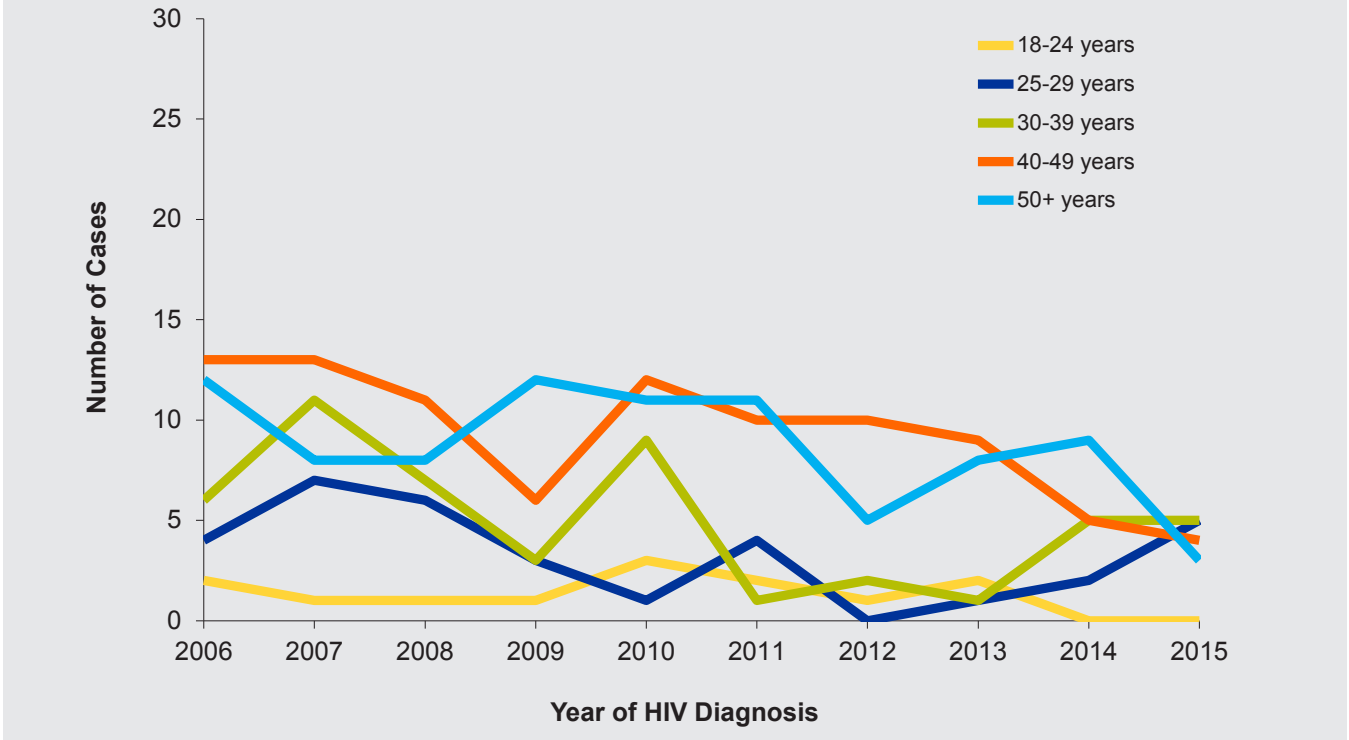
Figure 8.1 Number of non-MSM PWID newly diagnosed with HIV infection[1] by race/ethnicity, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

Almost two-thirds of non-MSM PWID newly diagnosed with HIV between 2006 and 2015 were in persons aged 40 years and older at time of diagnosis (Figure 8.2). Since 2011, annual cases among persons aged 40 and older decreased. There were very few PWID aged 18-24 years and no PWID under age 18 diagnosed in this time period.

Figure 8.2 Number of non-MSM PWID newly diagnosed with HIV infection[1] by age group at HIV diagnosis, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

Medical Monitoring Project (MMP)

Table 8.1 describes current injection drug use among San Francisco MMP participants during the 2009 to 2013 MMP data collection cycles (see Technical Notes "Medical Monitoring Project"). Among patients receiving HIV care, 8.1% reported injecting drugs in the prior 12 months. The most commonly reported drug injected was methamphetamine. Among participants reporting injecting drugs, 89.5% reported injecting drugs before or during sex, 8.1% reported sharing a needle with someone else after using it, and 4.4% reported sharing works (cookers, cotton or rinse) with someone else after using it.

Table 8.1 Self-reported injection drug use during the 12 months before the interview, Medical Monitoring Project, 2009-2013, San Francisco

	Number	%[1]
Use of any injection drugs	100	8.1%
Use of any injection drugs before or during sex[2]	73	89.5%
Injection drugs used by participant[2]		
Crystal methamphetamine ("tina, crack, ice")	85	84.6%
Heroin	26	25.9%
Cocaine	8	7.6%
Heroin and cocaine	13	13.3%
Crack	7	7.6%
Amphetamines ("speed")	11	9.6%
Oxycontin	4	4.1%
Shared needle after using[2]	8	8.1%
Shared works after using[2]	4	4.4%
Total	1,113	100.0%

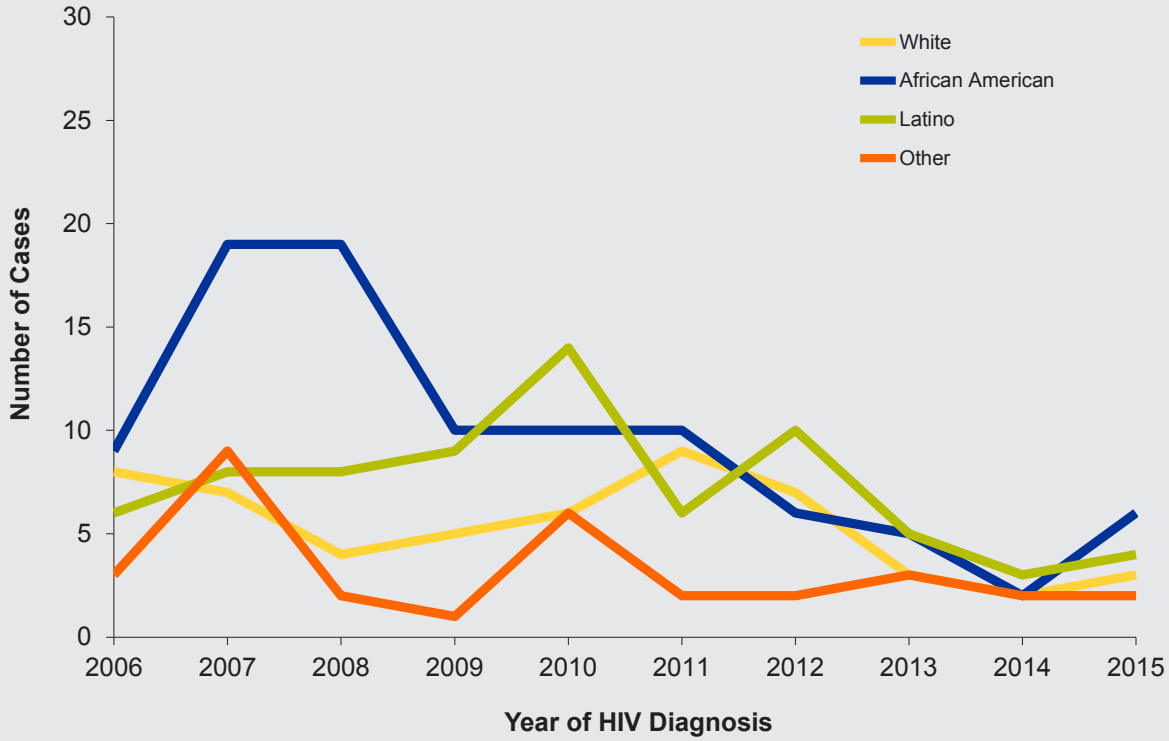
1 Weighted percent.
2 Among persons who reported injecting drugs in the previous 12 months.

9 HIV among Heterosexuals

HIV surveillance data

Racial/ethnic trends in heterosexual males and females newly diagnosed with HIV are difficult to characterize due to the relatively small number of San Francisco cases infected through heterosexual contact (Figure 9.1). From 2006 through 2015 African Americans accounted for 38% of heterosexual HIV cases, followed by Latinos at 29%, and whites at 21%.

Figure 9.1 Number of heterosexuals newly diagnosed with HIV infection[1] by race/ethnicity, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

Sexually transmitted diseases among heterosexuals

Figure 9.2 shows the annual number of primary, secondary, and early latent cases of early syphilis among heterosexual men in San Francisco from 2006 through 2015. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. The number of early syphilis cases among heterosexual men increased from 2011 through 2013, decreased in 2014 and then increased in 2015 to the highest number since 2006.

Figure 9.2 Early syphilis among heterosexual men, 2006-2015, San Francisco

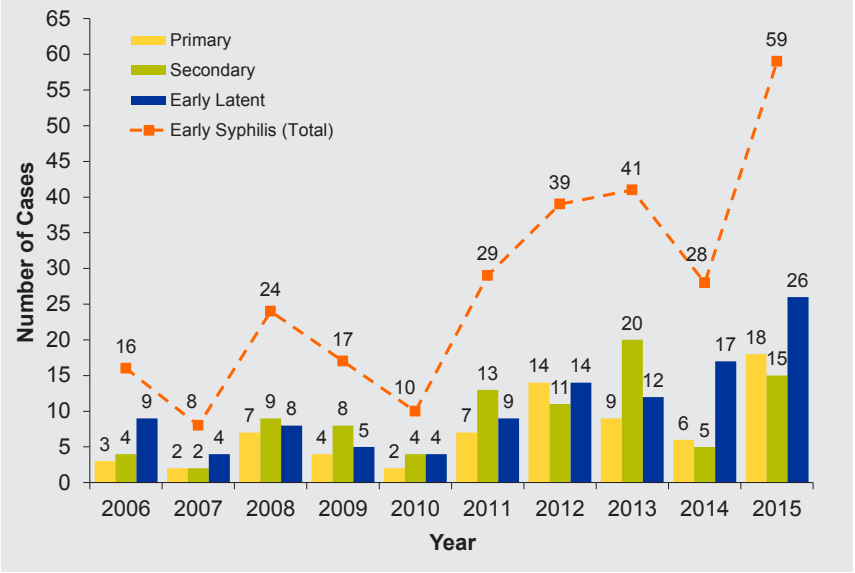
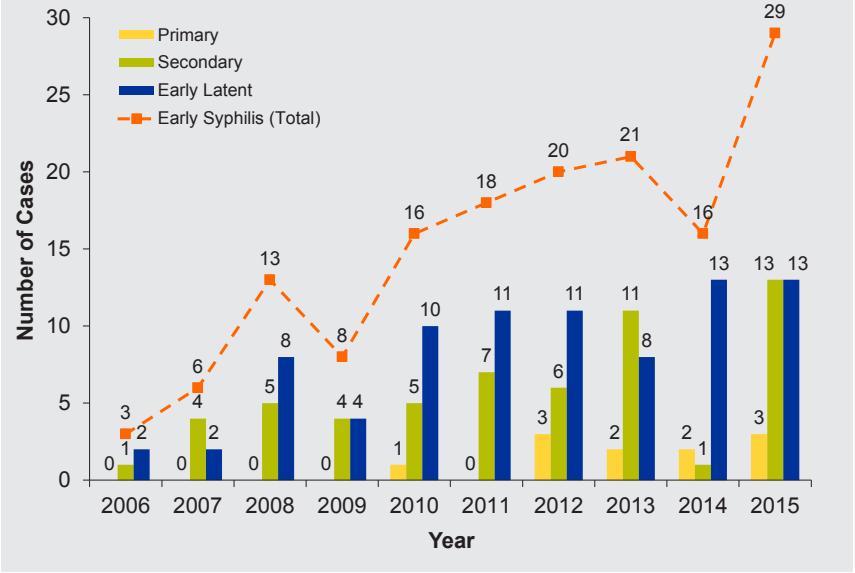


Figure 9.3 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 2006 through 2015. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable, with an increase in secondary syphilis in 2015.

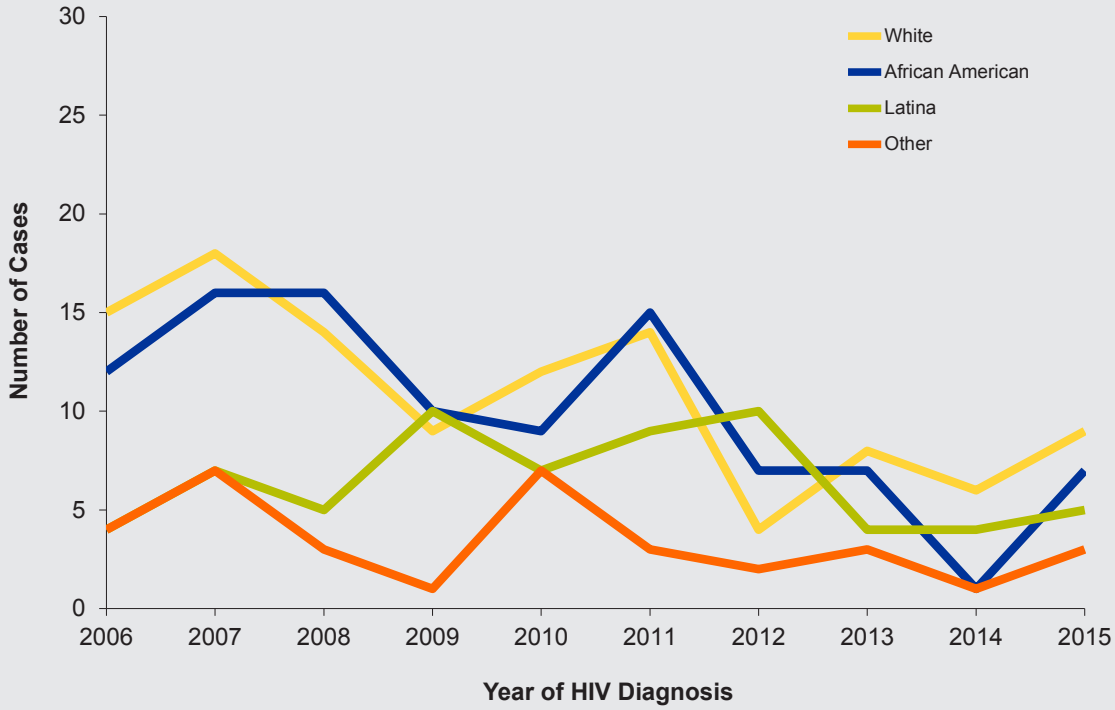
Figure 9.3 Early syphilis among women, 2006-2015, San Francisco



10 HIV among Women

Among females newly diagnosed with HIV from 2006 to 2015, whites and African Americans each accounted for a third of the cases and Latinas accounted for 21% (Figure 10.1). A slight increase in the number of female HIV cases was seen in 2015 across all racial/ethnic groups.

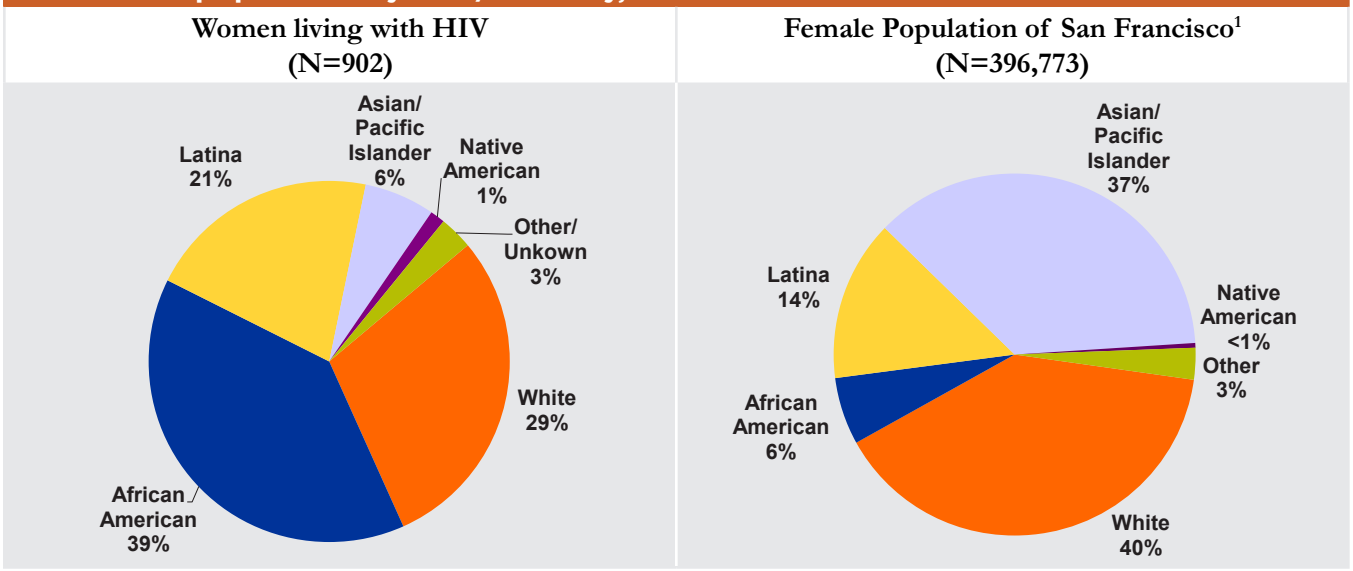
Figure 10.1 Number of women newly diagnosed with HIV infection[1] by race/ethnicity, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

Among women, African Americans are disproportionately affected by HIV. This is evident when comparing living female HIV cases in San Francisco to the city's female population (Figure 10.2). Although African American women represent 6% of the total female population, as of December 31, 2015 they accounted for 39% of the living female HIV cases in San Francisco.

Figure 10.2 Women living with HIV diagnosed through December 2015 and female population by race/ethnicity, San Francisco

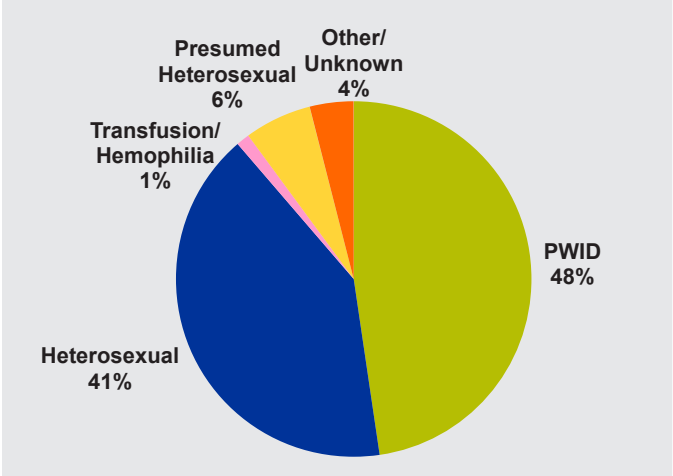


1 United States 2010 Census data.

The current transmission category definition for heterosexual contact does not adequately describe transmission for a large number of females who were infected heterosexually. The CDC HIV Incidence Case Surveillance Branch's definition for female presumed heterosexual contact reclassifies the transmission category for female cases who would otherwise be reported with no identified risk (see Technical Notes "Female Presumed Heterosexual Contact"). Among all living female HIV cases diagnosed in San Francisco through the end of 2015, 48% acquired HIV infection through injecting drugs and 47% through heterosexual contact (Figure 10.3).

Figure 10.3 Women living with HIV diagnosed through December 2015 by transmission category, San Francisco

N=902



11 HIV among Children, Adolescents and Young Adults

Adolescents (current age 13-17 years) or young adults (current age 18-24 years) living with HIV in San Francisco make up less than 1% of all living HIV cases in the city. As of December 31, 2015 there were five adolescents and 127 young adults living with HIV. Among living young adult HIV cases, 80% were MSM (either with or without a history of injecting drugs; Table 11.1). Thirty-one percent of living young adult cases were Latino, 24% were African American, 22% were white, and 18% Asian/Pacific Islander. Adolescent data are not displayed due to small numbers.

Table 11.1 Young adults living with HIV by transmission category, gender, and race/ethnicity, December 2015, San Francisco

	18 - 24 Years Old	
	Number	(%)
Total	**127**	**(100)**
Transmission Category		
MSM	95	(75)
PWID	1	(1)
MSM-PWID	6	(5)
Heterosexual	5	(4)
Perinatal	14	(11)
Other/Unidentified	6	(5)
Gender		
Male	107	(84)
Female	18	(14)
Transfemale[1]	2	(2)
Race/Ethnicity		
White	28	(22)
African American	30	(24)
Latino	39	(31)
Asian/Pacific Islander	23	(18)
Other/Unknown	7	(6)

1 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Table 11.2 compares San Francisco cases who were adolescents or young adults at time of HIV diagnosis with those in the same age groups at diagnosis nationally for the years 2012-2015. Compared to all U.S. cases, San Francisco cases had lower proportions of adolescents and young adults diagnosed with HIV.

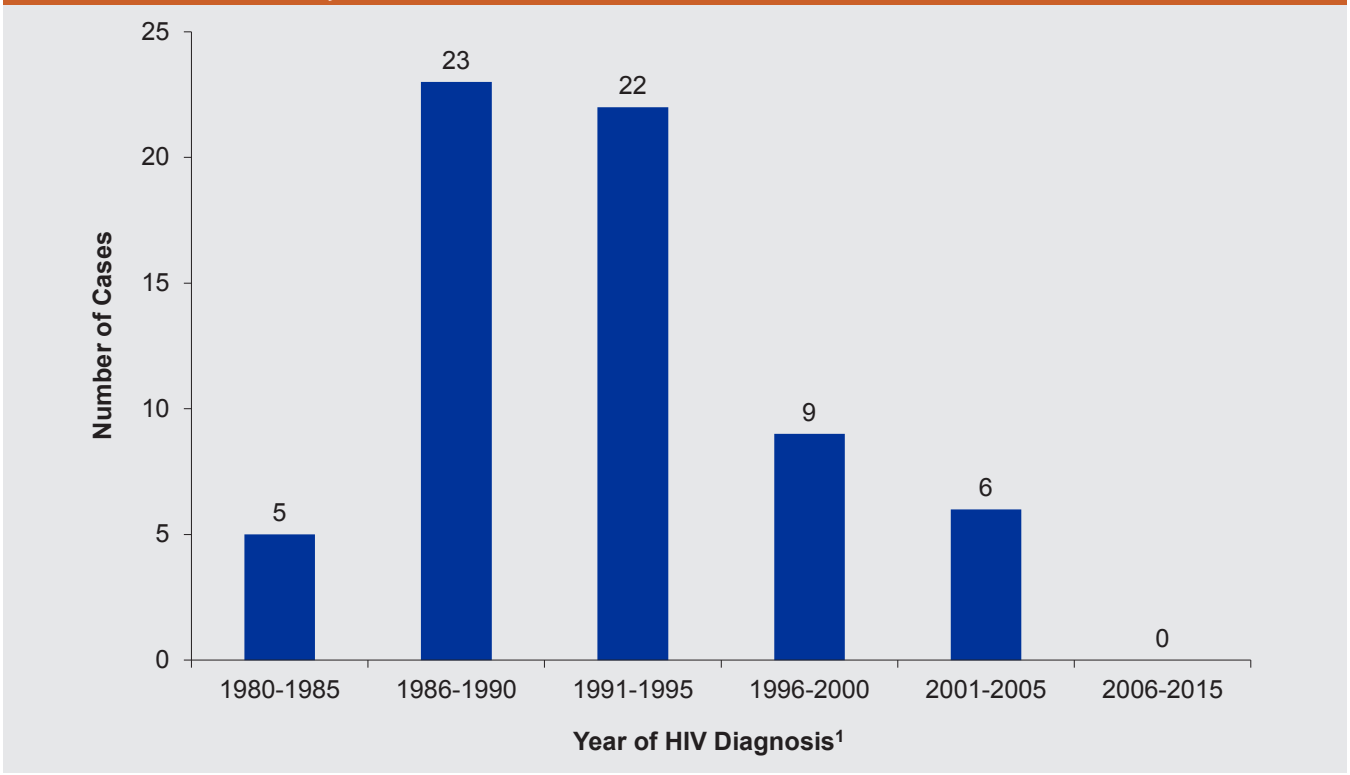
Table 11.2 Number of adolescents and young adults newly diagnosed with HIV infection, 2012-2015, San Francisco and the United States

	Year of HIV Diagnosis							
	2012		2013		2014		2015	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
San Francisco HIV Cases (All ages)	453		382		309		255	
Age 13-19 years at HIV diagnosis	6	(1)	6	(2)	2	(1)	4	(2)
Age 20-24 years at HIV diagnosis	51	(11)	47	(12)	36	(12)	33	(13)
U.S. HIV Cases[1] (All ages)	41,950		40,628		40,493			
Age 13-19 years at HIV diagnosis	1,939	(5)	1,748	(4)	1,719	(4)	N/A	
Age 20-24 years at HIV diagnosis	7,263	(17)	7,123	(18)	7,245	(18)	N/A	

1 U.S. data are based on reported case counts from the 50 states and 6 dependent areas with confidential name-based HIV reporting in CDC HIV Surveillance Report, 2014.

As of December 31, 2015, there were a cumulative total of 65 pediatric HIV cases (children less than 13 years old who resided in San Francisco at time of diagnosis). The number of pediatric HIV cases peaked between 1986 and 1995, and has declined over the following years (Figure 11.1). No pediatric HIV cases have been diagnosed among residents of San Francisco since 2005. Of the 65 reported pediatric HIV cases, 28 (43%) have died, 34 (52%) have survived beyond childhood (current age ≥13 years), and three (5%) aged <13 years were living at the end of 2015.

Figure 11.1 Number of children diagnosed with HIV infection by time period of HIV diagnosis, 1980-2015, San Francisco



1 See Technical Notes "Date of Initial HIV Diagnosis."

12 HIV among Persons Aged 50 Years and Older

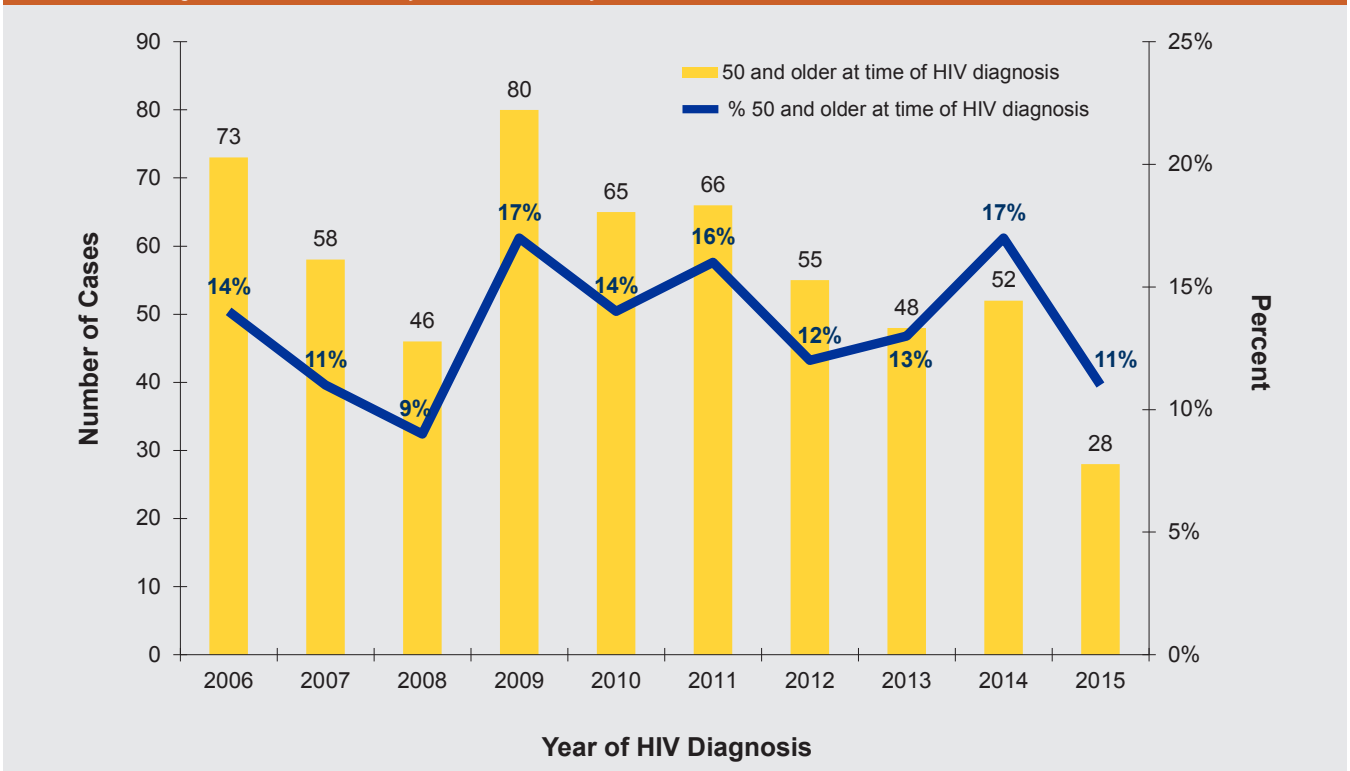
The impact of effective combination ART use in the community has succeeded in extending the lives of persons with HIV and resulted in larger numbers of PLWH who are 50 years and older. Sixty percent (N=9,672) of PLWH in San Francisco were aged 50 years and older as of December 31, 2015. Of these, 34% were aged 50-54 years, 27% aged 55-59 years, 20% aged 60-64 years, and 19% aged 65 years and older. The demographic characteristics for persons aged 50 years and older are compared to those in persons under 50 years in Table 12.1 revealing a similar gender and transmission category distribution across these age groups. Those aged 50 years and over had higher proportions of whites while those under age 50 had higher proportions of Latinos and Asian/Pacific Islanders.

Table 12.1 Characteristics of persons living with HIV by age group, December 2015, San Francisco

	Age ≥ 50 years as of 12/31/2015 (N=9,672)		Age < 50 years as of 12/31/2015 (N=6,367)	
	Number	(%)	Number	(%)
Gender				
Male	9,018	(93)	5,739	(90)
Female	505	(5)	400	(6)
Transgender	149	(2)	228	(4)
Race/Ethnicity				
White	6,512	(67)	3,127	(49)
African American	1,259	(13)	744	(12)
Latino	1,341	(14)	1,647	(26)
Asian/Pacific Islander	358	(4)	582	(9)
Native American	35	(<1)	40	(1)
Other/Unknown	167	(2)	227	(4)
Transmission Category				
MSM	7,195	(74)	4,467	(70)
PWID	720	(7)	372	(6)
MSM-PWID	1,272	(13)	959	(15)
Heterosexual	277	(3)	261	(4)
Other/Unidentified	208	(2)	308	(5)

In the last ten years (2006-2015), the proportion of newly diagnosed persons with HIV at age of 50 years and older has fluctuated from a low of 9% in 2008 to a high of 17% in 2009 and again in 2014 (Figure 12.1). The biggest one-year drop, 6%, occurred between 2014 and 2015.

Figure 12.1 Number and percent of persons newly diagnosed with HIV infection[1] at age 50 years and older, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

During 2006-2015, persons who were newly diagnosed with HIV and aged 50 years or older had a slightly different demographic profile in comparison to those were newly diagnosed and under the age of 50 (Table 12.2). A higher proportion of women, African Americans, whites, PWID, and heterosexuals were 50 or older. Of those diagnosed at age of 50 or older in 2006-2015, over half were 50-54 years old (51%), 25% aged 55-59 years, 15% aged 60-64 years, and 9% aged 65 years or older.

Table 12.2 Characteristics of persons newly diagnosed with HIV infection in 2006-2015 by age at diagnosis, San Francisco

	Age ≥ 50 years at diagnosis (N=571)		Age < 50 years at diagnosis (N=3,741)	
	Number	(%)	Number	(%)
Gender				
Male	488	(85)	3,380	(90)
Female	77	(13)	231	(6)
Transgender	6	(1)	130	(3)
Race/Ethnicity				
White	331	(58)	1,795	(48)
African American	120	(21)	480	(13)
Latino	74	(13)	920	(25)
Asian/Pacific Islander	23	(4)	381	(10)
Other/Unknown	23	(4)	165	(4)
Transmission Category				
MSM	328	(57)	2,639	(71)
PWID	87	(15)	189	(5)
MSM-PWID	61	(11)	534	(14)
Heterosexual	60	(11)	191	(5)
Other/Unidentified	35	(6)	188	(5)

13 HIV among Transgender Persons

Transgender status relies on review of information in medical records. Information on transgender status has been collected since 1996. From 2006 through 2015, there were 136 transgender persons newly diagnosed with HIV in San Francisco (Table 13.1). Ninety-eight percent of these diagnoses were transfemale. Transgender cases comprised almost 3% of all HIV cases diagnosed in this time period. Compared to all HIV cases diagnosed during the period of 2006-2015, transgender cases were more likely to be non-white, PWID, and younger; 40% of newly diagnosed transgender persons occurred in persons 18-29 years old.

As of December 31, 2015, there were 378 transgender persons living with HIV in San Francisco (Table 13.2). African Americans and Latinas were the largest racial/ethnic groups among living transgender HIV cases, and 44% of living transgender cases were PWID. Similar to persons newly diagnosed with HIV in 2006-2015, a higher proportion of non-whites, PWID, and younger ages occurred among living transgender cases when compared to all living HIV cases in San Francisco.

Table 13.1 Characteristics of transgender[1] persons compared to all persons newly diagnosed with HIV infection in 2006-2015, San Francisco

	Transgender HIV Cases 2006-2015		HIV Cases 2006-2015	
	Number	(%)	Number	(%)
Total	**136**		**4,312**	
Race/Ethnicity				
White	26	(19)	2,126	(49)
African American	37	(27)	600	(14)
Latino	44	(32)	994	(23)
Asian/Pacific Islander	19	(14)	404	(9)
Other/Unknown	10	(7)	188	(4)
People who Inject Drugs				
Yes	44	(32)	871	(20)
No	92	(68)	3,441	(80)
Age at HIV Diagnosis (Years)				
13 - 17	0	(0)	16	(<1)
18 - 24	29	(21)	505	(12)
25 - 29	26	(19)	691	(16)
30 - 39	45	(33)	1,361	(32)
40 - 49	30	(22)	1,168	(27)
50+	6	(4)	571	(13)

1 See Technical Notes "Transgender Status."

Table 13.2 Characteristics of transgender[1] persons living with HIV compared to all persons living with HIV, December 2015, San Francisco

	Transgender PLWH		All PLWH	
	Number	(%)	Number	(%)
Total	**378**	**(100)**	**15,995**	**(100)**
Race/Ethnicity				
White	75	(20)	9,622	(60)
African American	127	(34)	1,997	(12)
Latino	122	(32)	2,976	(19)
Asian/Pacific Islander	39	(10)	932	(6)
Other/Unknown	15	(4)	468	(3)
People who Inject Drugs				
Yes	166	(44)	3,320	(21)
No	212	(56)	12,675	(79)
Age in Years (at end of 2015)				
13 - 17	0	(0)	5	(0)
18 - 24	2	(1)	127	(1)
25 - 29	25	(7)	425	(3)
30 - 39	82	(22)	1,809	(11)
40 - 49	119	(31)	3,961	(25)
50+	150	(40)	9,665	(60)

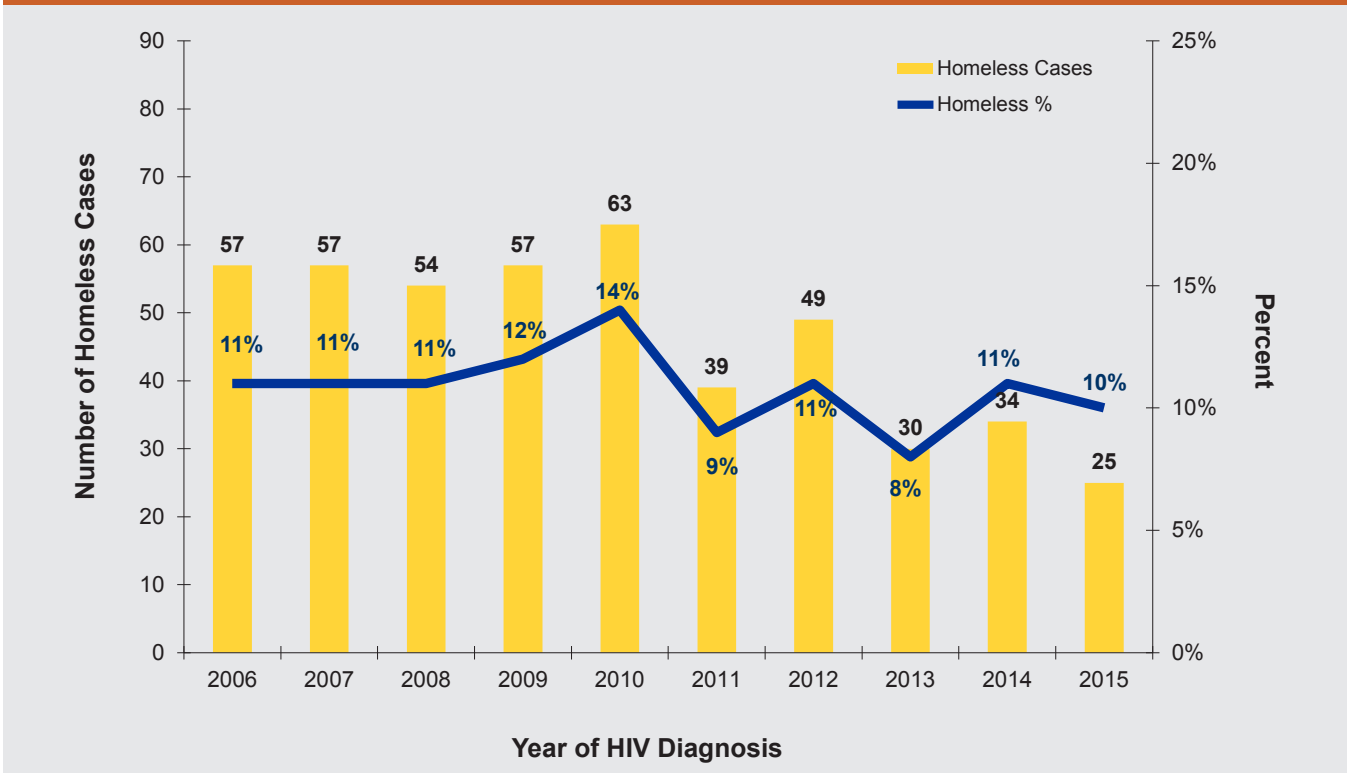
1 See Technical Notes "Transgender Status."

14 HIV among Homeless Persons

A case is defined as homeless if the medical record states that the patient is homeless or not-housed at time of HIV diagnosis, or the patient's address at diagnosis is a known homeless shelter or a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence at diagnosis are not classified as homeless. In addition, a case is not considered homeless if the person lives in a single room occupancy or transitional housing, lives with partners, family or other non-family members, or is institutionalized (such as hospice, inpatient drug/alcohol recovery facility, facility for physically/mentally disabled, residential treatment program, correctional facility). Because our definition for homelessness excludes those with marginalized or unstable housing, our findings may differ from other programs.

Among homeless persons newly diagnosed with HIV from 2006 through 2015, the number of cases peaked at 63 cases in 2010 and then dropped to 25 cases in 2015 (Figure 14.1). The proportion of annual cases who were homeless at diagnosis was highest (14%) in 2010, but was otherwise fairly stable between 9% and 11%.

Figure 14.1 Number and percent of homeless persons newly diagnosed with HIV infection[1] by year of diagnosis, 2006-2015, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis. See Technical Notes "Date of Initial HIV Diagnosis."

Compared to all HIV cases diagnosed in 2006 to 2015, persons who were homeless at time of HIV diagnosis were more likely to be female or transfemale, African American, PWID, and MSM-PWID (Table 14.1). The age distribution for all HIV cases and those among the homeless was similar.

Table 14.1 Characteristics of homeless persons compared to all persons newly diagnosed with HIV infection in 2006-2015, San Francisco

	Homeless HIV Cases 2006-2015		HIV Cases 2006-2015	
	Number	(%)	Number	(%)
Total	**465**		**4,312**	
Gender				
Male	356	(77)	3,868	(90)
Female	64	(14)	308	(7)
Transfemale[1]	45	(10)	136	(3)
Race/Ethnicity				
White	203	(44)	2,126	(49)
African American	131	(28)	600	(14)
Latino	85	(18)	994	(23)
Asian/Pacific Islander	12	(3)	404	(9)
Other/Unknown	34	(7)	188	(4)
Transmission Category				
MSM	152	(33)	3,055	(71)
PWID	109	(23)	276	(6)
MSM-PWID	160	(34)	595	(14)
Heterosexual	33	(7)	255	(6)
Other/Unidentified	11	(2)	131	(3)
Age at Diagnosis (Years)				
0 - 17	1	(<1)	16	(<1)
18 - 24	70	(15)	505	(12)
25 - 29	88	(19)	691	(16)
30 - 39	114	(25)	1,361	(32)
40 - 49	117	(25)	1,168	(27)
50+	75	(16)	571	(13)

1 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Table 14.2 shows the proportion of persons who self-reported homelessness among San Francisco MMP participants compared to results from the national MMP participants by year from 2009 to 2013 (see Technical Notes "Medical Monitoring Project"). Over all years, 13.2% of MMP participants reported being homeless at any time in the previous 12 months. Each year from 2009 to 2013, San Francisco had a higher percentage of participants report homelessness than the national MMP data.

Table 14.2 Percent of all participants that self-reported homelessness[1] during the 12 months before the interview among MMP participants in San Francisco compared to MMP participants nationally[2-6], Medical Monitoring Project, 2009-2013

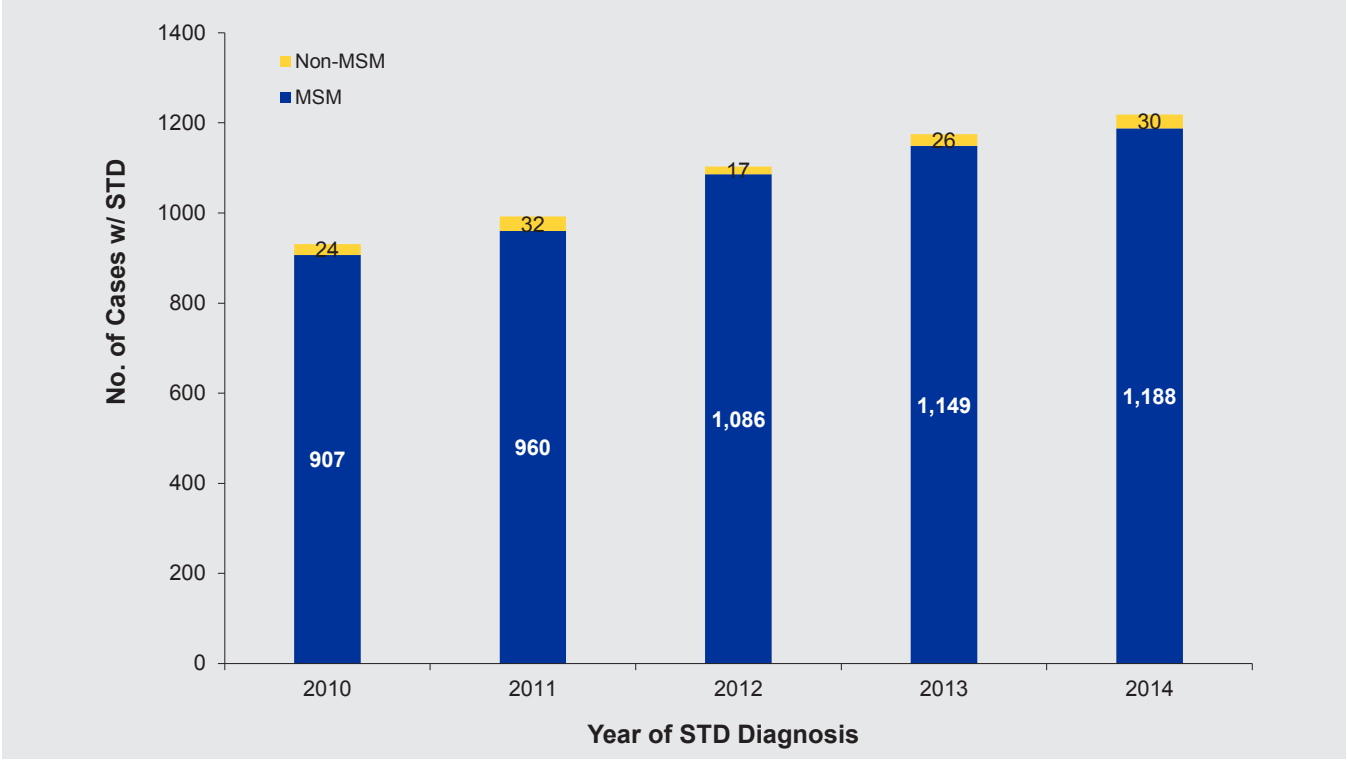
	San Francisco Weighted percent	United States Weighted percent
2009	13.6%	9.0%
2010	15.9%	7.7%
2011	12.6%	8.1%
2012	13.2%	8.3%
2013	10.5%	7.9%
Total (2009-2013)	13.2%	NA[7]

1 Homelessness defined as reporting living on the street, in a shelter, SRO or a car in the previous 12 months.
2 Blair, Janet M., et al. "Behavioral and clinical characteristics of persons receiving medical care for HIV infection—Medical Monitoring Project, United States, 2009." MMWR Surveill Summ 63.suppl 5 (2014): 1-22.
3 Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2010. HIV Surveillance Special Report 9.
4 Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2011. HIV Surveillance Special Report 10.
5 Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2012. HIV Surveillance Special Report 12.
6 Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2013 Cycle (June 2013–May 2014). HIV Surveillance Special Report 16.
7 Data not available.

15 Persons Co-infected with HIV and Sexually Transmitted Diseases

Diagnoses of sexually transmitted diseases (STD) among persons living with HIV (PLWH) is a marker of condomless sex which, depending upon HIV treatment status and partner HIV serostatus, may increase HIV transmission. The diagnosis of STD among PLWH was determined through a computerized match of the San Francisco Department of Public Health HIV and STD case registries. The data from the STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. From 2010 to 2014 (the last year data were available) the number of STD cases among PLWH rose from 931 cases in 2010 to 1,218 cases in 2014 and the vast majority of cases (>95%) were among MSM (Figure 15.1). Overall, the increase coincided with the upward trend shown in early syphilis (Figure 7.4 on page 55) and in male gonorrhea (Figure 7.3 on page 54) reported from 2010 through 2014 among MSM diagnosed with HIV. All STD occurred after the HIV diagnosis, indicating condomless sex among persons with known HIV infection.

Figure 15.1 Number of STD diagnoses among persons living with HIV by year of STD diagnosis, 2010-2014, San Francisco



The majority of PLWH diagnosed with an STD from 2010 through 2014 were male, white, and aged 40-49 years at time of STD diagnosis (Table 15.1). The gender and race/ethnicity distributions were similar across the five year period. The proportion of PLWH diagnosed with an STD at age 50 or older increased from 18% in 2010 to 26% in 2014, while the proportion of those aged 30-49 decreased during the same period of time.

Table 15.1 Demographic characteristics of persons co-infected with HIV and STD, 2010-2014, San Francisco

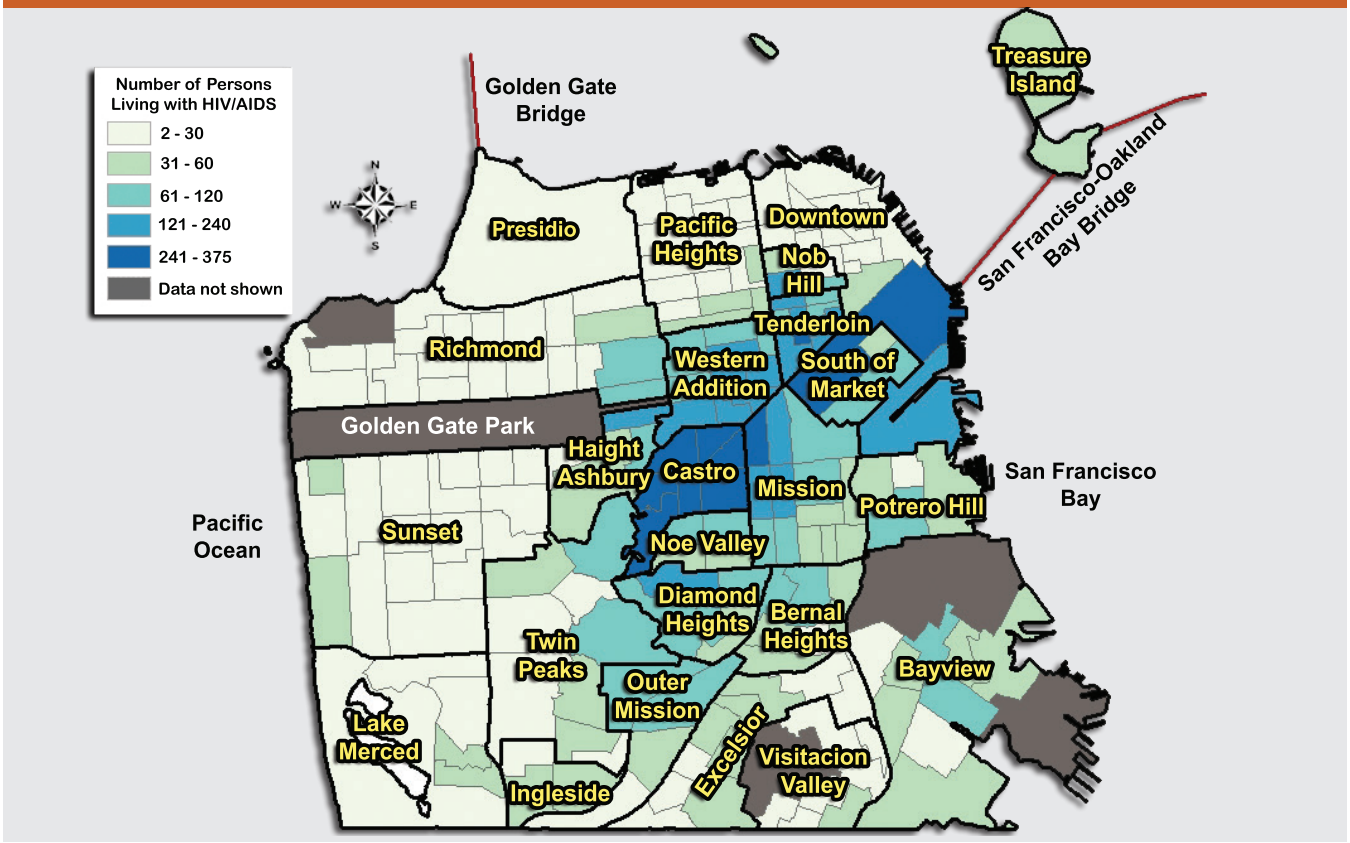
	Year of STD diagnosis									
	2010		2011		2012		2013		2014	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender										
Male	907	(97)	960	(97)	1,083	(98)	1,147	(98)	1,181	(97)
Female	8	(1)	11	(1)	8	(1)	6	(1)	12	(1)
Transfemale[1]	16	(2)	21	(2)	12	(1)	22	(2)	25	(2)
Race/Ethnicity										
White	590	(63)	598	(60)	671	(61)	690	(59)	702	(58)
African American	76	(8)	89	(9)	86	(8)	104	(9)	103	(8)
Latino	199	(21)	215	(22)	257	(23)	269	(23)	284	(23)
Asian/Pacific Islander	48	(5)	60	(6)	68	(6)	80	(7)	85	(7)
Other/Unknown	18	(2)	30	(3)	21	(2)	32	(3)	44	(4)
Age at STD Diagnosis (years)										
13 - 29	101	(11)	110	(11)	132	(12)	141	(12)	155	(13)
30 - 39	252	(27)	245	(25)	265	(24)	291	(25)	287	(24)
40 - 49	415	(45)	415	(42)	461	(42)	471	(40)	460	(38)
50 - 59	128	(14)	172	(17)	197	(18)	230	(20)	247	(20)
60 +	35	(4)	50	(5)	48	(4)	42	(4)	69	(6)
Total	931		992		1,103		1,175		1,218	

1 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical notes "Transgender Status."

16 Geographic Distribution of HIV

In section 3 of this report, we noted the movement of persons in and out of San Francisco following their initial HIV diagnosis. To accurately display the geographic distribution of persons living with HIV (PLWH) in San Francisco, we included PLWH who had a current San Francisco address, regardless of where they were initially diagnosed with HIV. Map 16.1 illustrates the geographic distribution of the 13,869 PLWH who were current San Francisco residents. Current address is collected from various sources such as laboratory reports, chart review, and communications with other jurisdictions. The Castro and South of Market neighborhoods had the highest numbers of PLWH (the darker colors on the map).

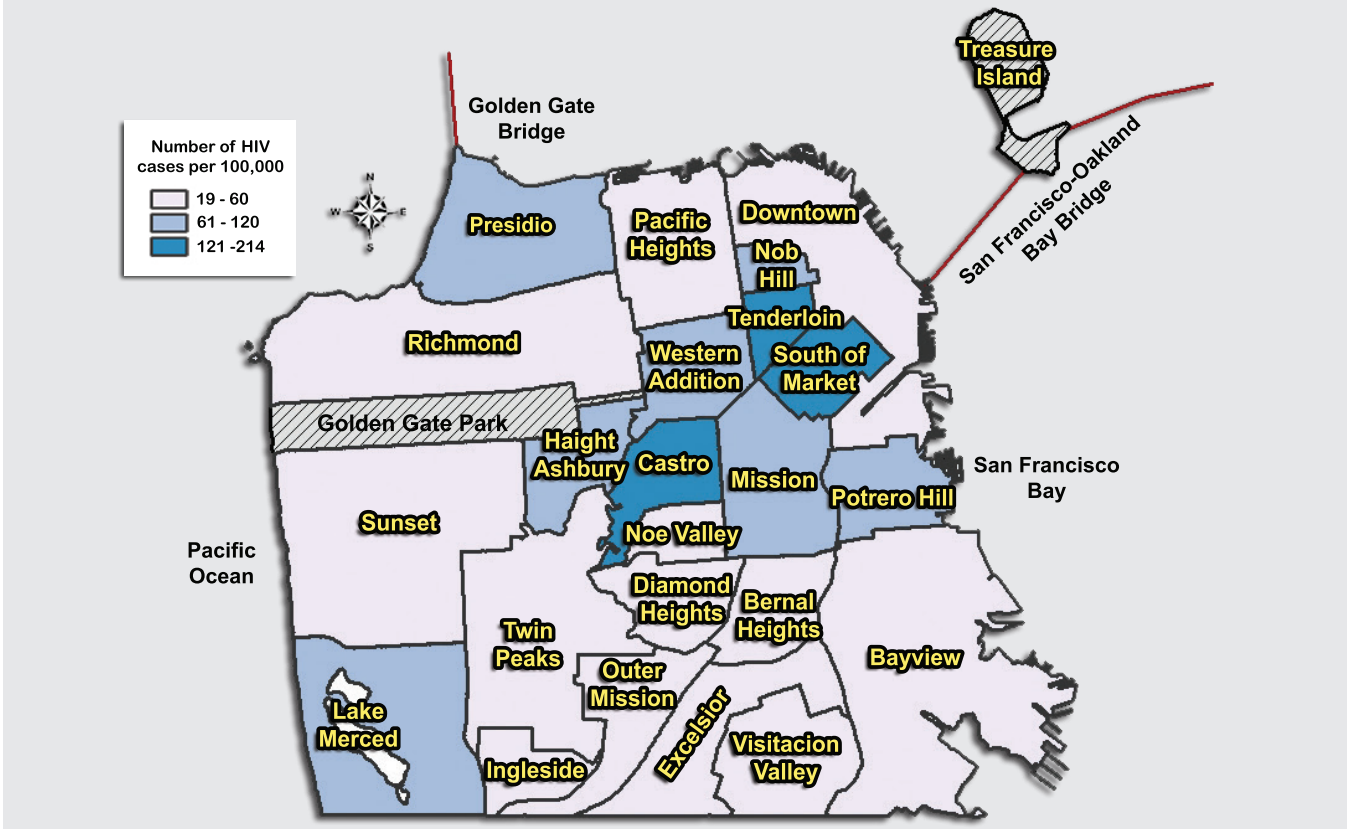
Map 16.1 Geographic distribution of persons living with HIV and resided in San Francisco as of December 2015



* Living homeless cases (n=586) and those with unknown or invalid addresses (n=448) were not displayed. Census tracts where population totals were less than 500 were not displayed.

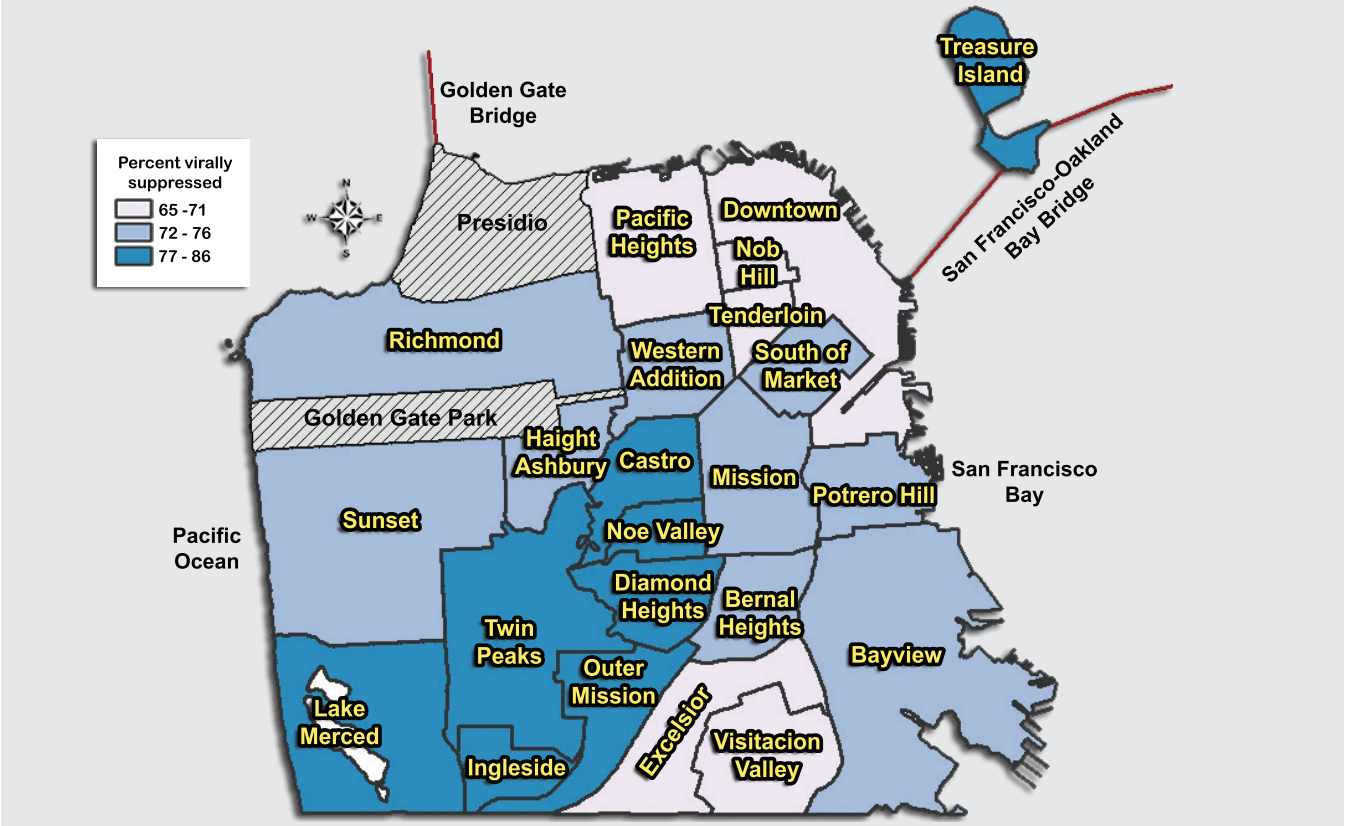
The U.S. Census estimated 864,816 persons resided in San Francisco County in 2015. During 2014-2015, there were 564 San Francisco residents who were newly diagnosed with HIV (a two-year diagnosis rate of 65 per 100,000). Map 16.2 uses the residential address at diagnosis for those diagnosed in 2014-2015 to display the newly diagnosed rates. The 2010 Census data for census tracts were aggregated at the neighborhood level to provide the neighborhood population. As the total number of new diagnoses continues to decline, neighborhoods such as the Castro (214 per 100,000), Tenderloin (176 per 100,000), and South of Market (121 per 100,000) still maintain higher rates of newly diagnosed cases than other neighborhoods (the darker colors on the map).

Map 16.2 Geographic distribution of rates of HIV diagnosis per 100,000 population for persons newly diagnosed in 2014-2015, San Francisco



We examined the geographic distribution of San Francisco residents diagnosed with HIV through December 31, 2013 and who were alive and achieved viral suppression as of December 31, 2014. Overall, among those with a current San Francisco address, 72% were virally suppressed in 2014. Six neighborhoods had less of their PLWH virally suppressed than this overall city estimate (the lighter colors on the map): the Tenderloin (65%), Nob Hill (67%), Downtown and Excelsior (70% each), and Pacific Heights and Visitacion Valley (71% each; Map 16.3). Those who were currently homeless had the lowest proportion who achieved viral suppression (32%) in 2014 (not displayed).

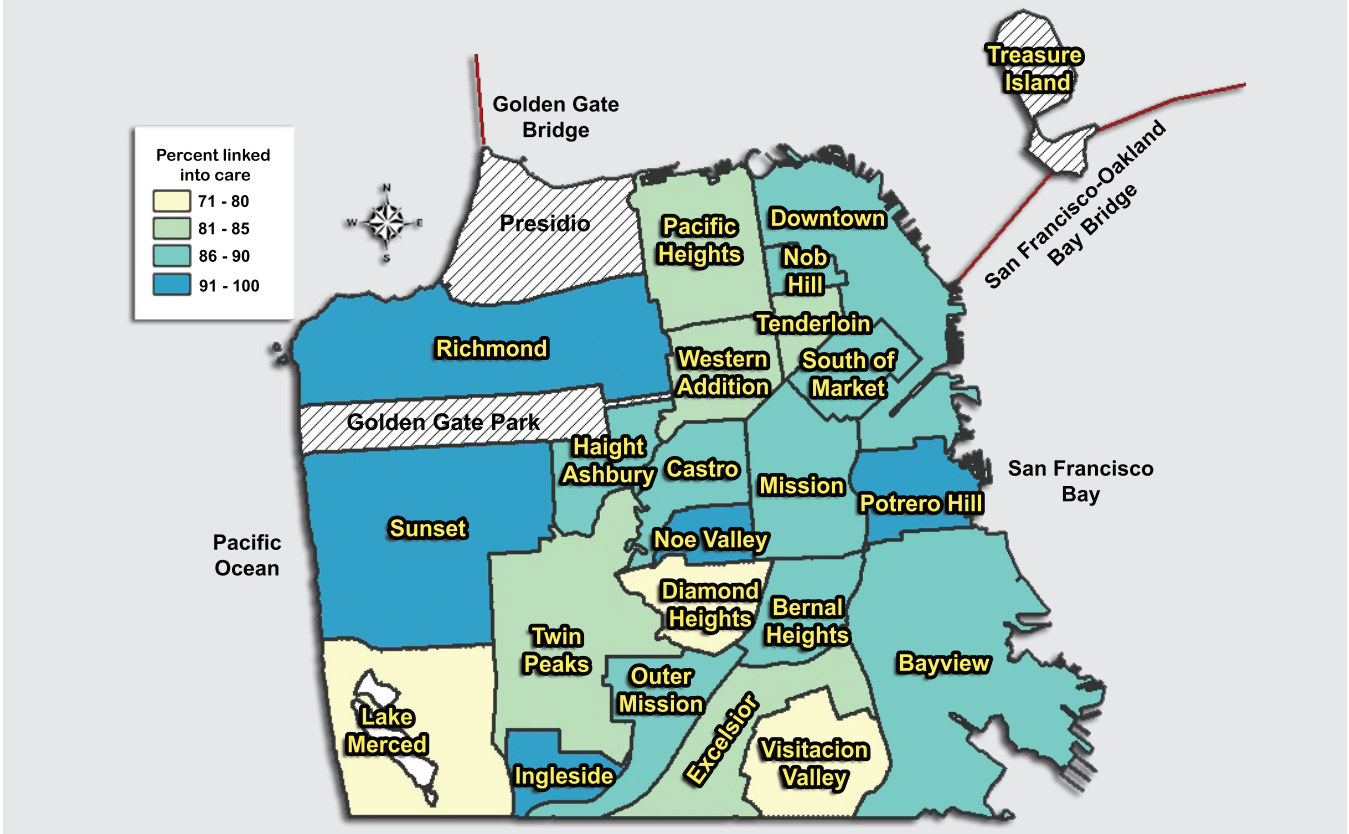
Map 16.3 Geographic distribution of proportion of persons living with HIV diagnosed through 2013 who achieved viral suppression in 2014, San Francisco



* Thirty-two percent of homeless PLWH (N=111) were virally suppressed in 2014. Similarly, 46% those with invalid or unknown addresses (N=128) were virally suppressed in 2014.

From 2011 to 2014, 86% of the 1,618 newly diagnosed San Francisco residents were linked into care within three months of their initial diagnosis. Neighborhoods with less than 15 cases were not displayed. All but three neighborhoods had more than 80% of their newly diagnosed residents linked into care within three months (Map16.4). The three neighborhoods (the lighter colors on the map) that fell below 80% were Lake Merced (71%), and Diamond Heights and Visitacion Valley (79% each). Seventy-nine percent of those who were homeless at diagnosis were also linked into care.

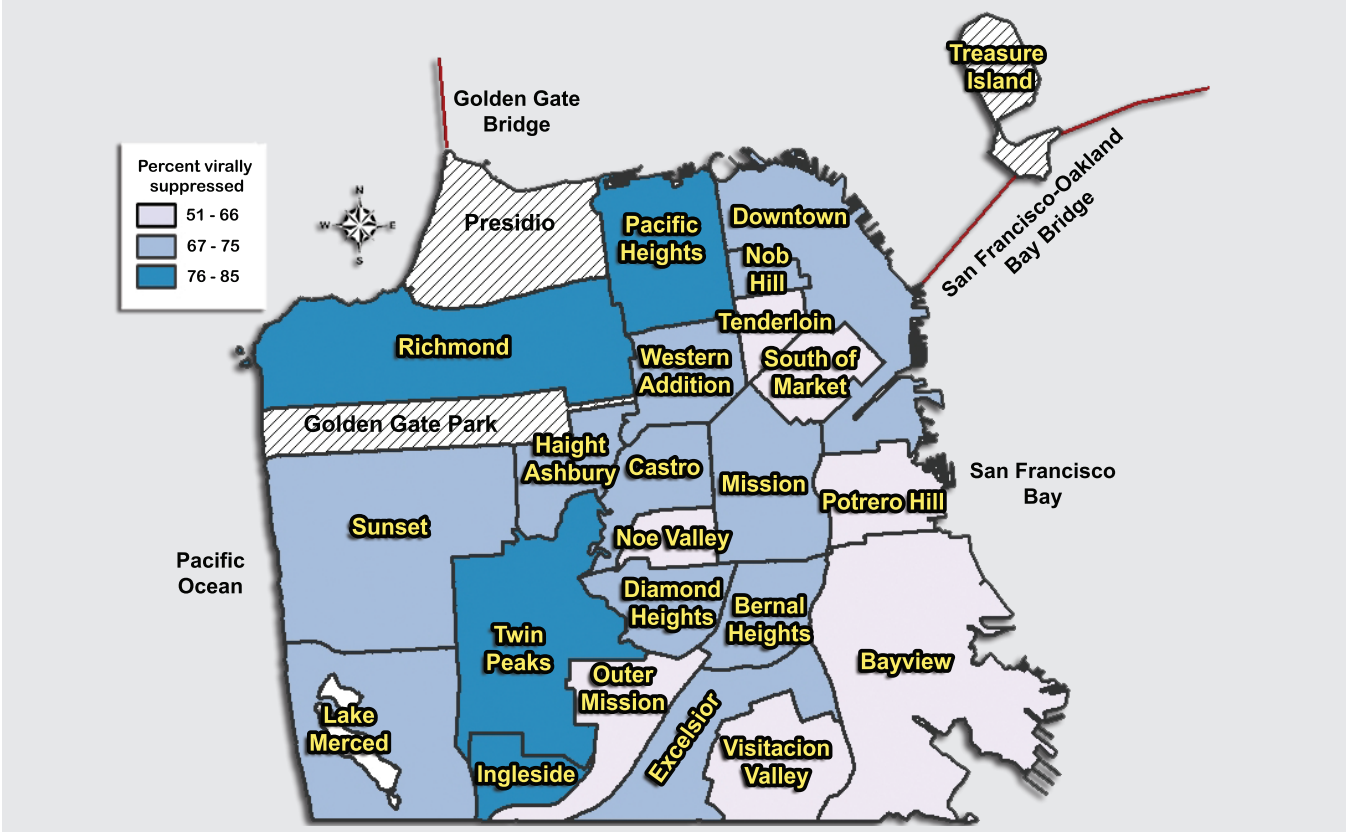
Map 16.4 Geographic distribution of proportion of persons newly diagnosed with HIV infection in 2011-2014 who were linked to care within 3 months of diagnosis, San Francisco



* Persons homeless at HIV diagnosis and those with invalid or unknown addresses are not displayed on the map (N=115, 79% and N=77, 71% linked into care within three months of diagnosis, respectively).

During 2011 through 2014, 66% of the newly diagnosed persons with HIV reached viral suppression within 12 months of diagnosis. Seven neighborhoods fell below this overall average (the lighter colors on the map; Map 16.5): Bayview (51%), Potrero Hill (60%), Tenderloin, South of Market, and Outer Mission (62% each), and Visitacion Valley and Noe Valley (63% each). While Ingleside exhibited both high linkage to care and viral suppression rates (91% linked, 86% virally suppressed), some neighborhoods had difficulty bridging successful linkage to care (medical appointments) to successful viral suppression. For example, a high percentage of newly diagnosed Noe Valley residents were successful in receiving HIV care within their first three months of diagnosis (95%) but only 63% were able to achieve viral suppression within 12 months. This drop represents a missed opportunity to translate successful linkage to successful treatment uptake.

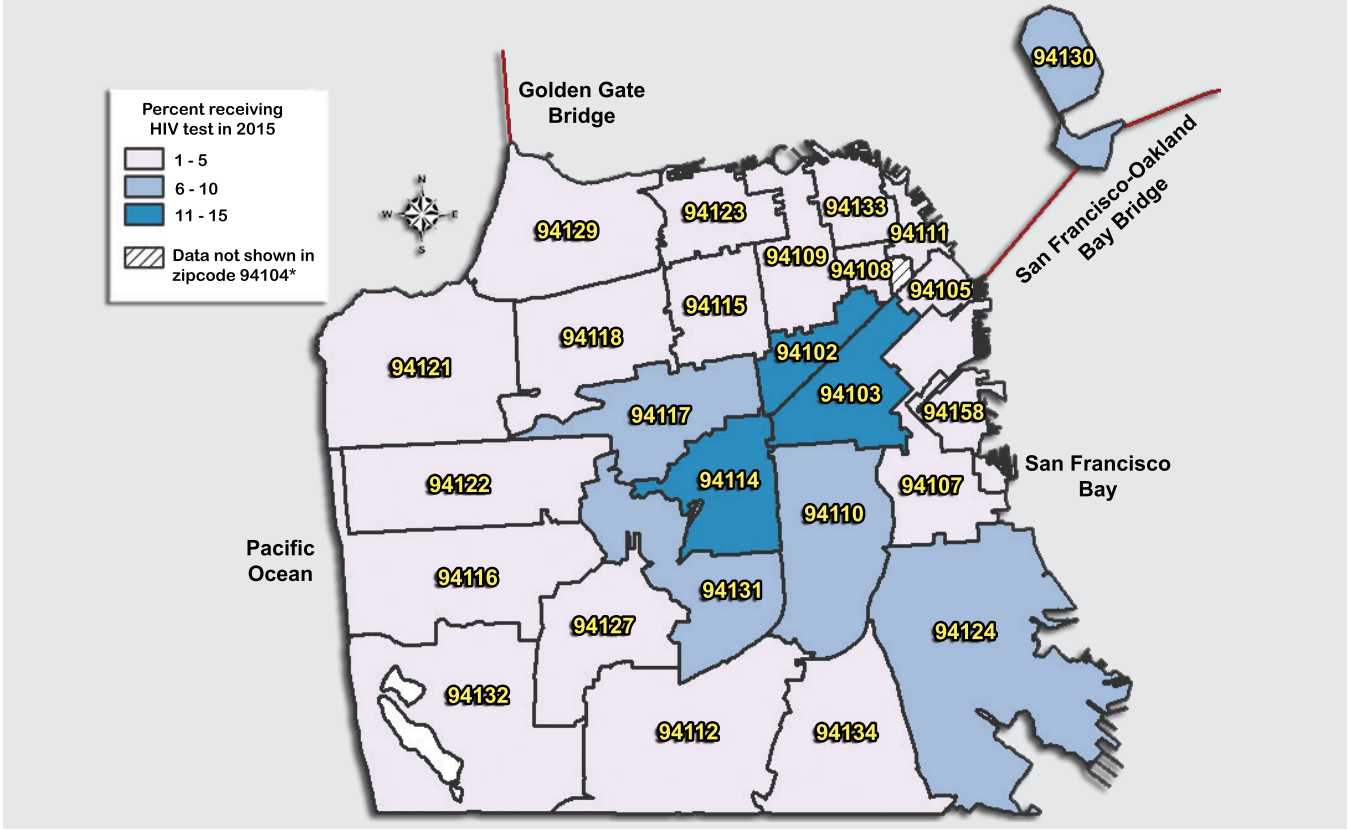
Map 16.5 Geographic distribution of proportion of persons newly diagnosed with HIV infection in 2011-2014 who achieved viral suppression within 12 months of diagnosis, San Francisco



* Homeless HIV cases and those with unknown or invalid addresses are not displayed (N=71, 48% were virally suppressed and N=48, 44% achieved viral suppression within 12 months, respectively).

We examined male HIV testing rates in 2015 in San Francisco by zip code. The 2015 HIV testing data came from Evaluation Web, the CDC's HIV testing database. Tests in Evaluation Web include those performed in both community and medical settings. We used the 2010 Census data to establish the number of males who were 13 years old or older by zip code for the denominator and estimated the testing coverage among the male population. In three zip codes, 11% or more of the male population received an HIV test in 2015 (the darker colors on the map; Map 16.6): zip code 94102 (11%), 94103 (13%), and 94114 (15%). Unique testers could not be differentiated in the community settings therefore some men may have tested and been counted more than once and inflated the numerator resulting in an overestimate of the testing proportion.

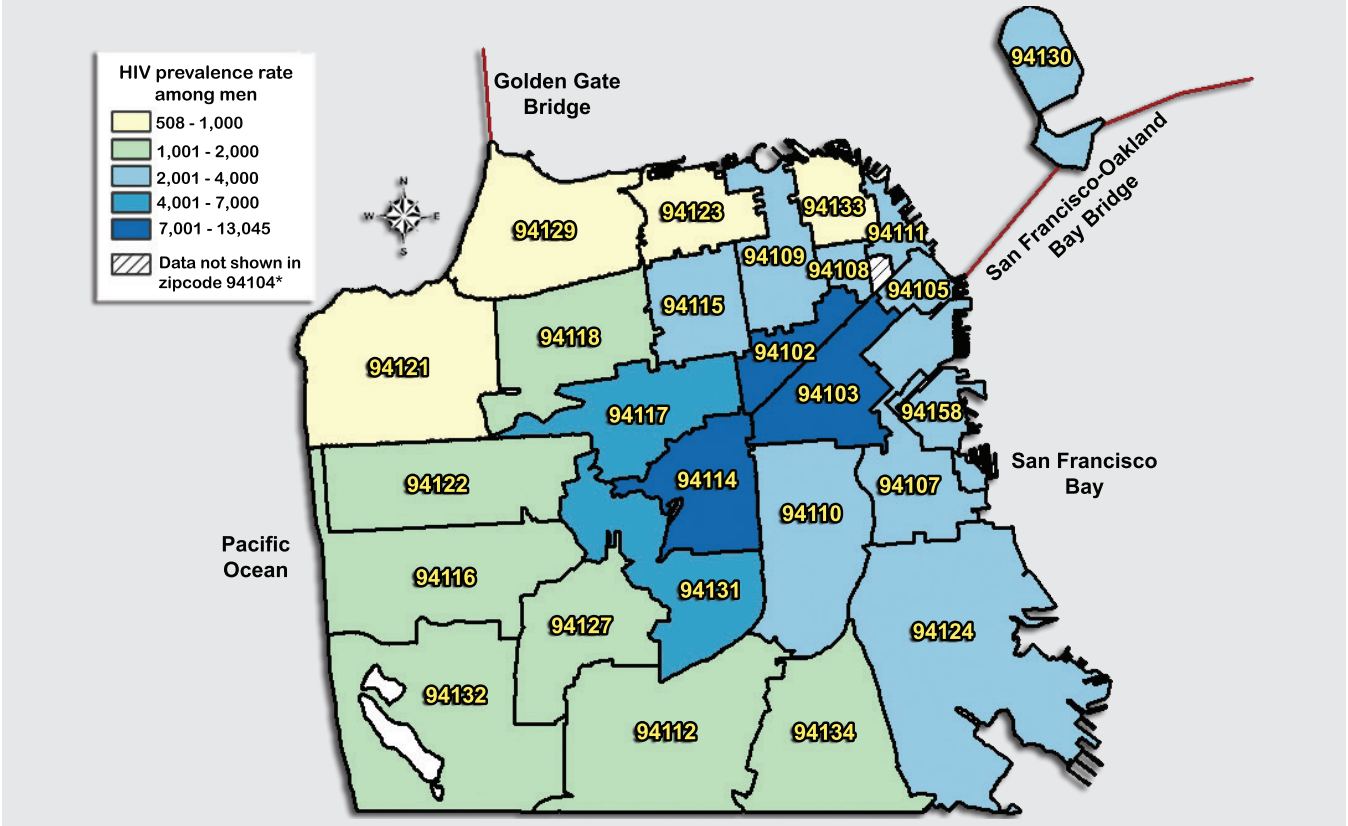
Map 16.6 Proportion of San Francisco male residents aged 13 years and older who received an HIV test by zip code, 2015



* The 94104 zip code is not displayed because the total population in this zip code is less than 500.

The HIV prevalence rates by zip code among males aged 13 and older as of December 31, 2015 is displayed in Map 16.7. The 94114 zip code had the highest HIV prevalence of 13,045 per 100,000, followed by zip codes 94102 and 94103 (7,688 per 100,000 and 7,216 per 100,000, respectively). By comparing the data contained in Map 16.6 and Map 16.7, we can identify areas with discordant HIV prevalence and HIV testing rates to target and improve testing efforts.

Map 16.7 HIV prevalence rates[1] per 100,000 population among men aged 13 years and older by zip code, 2015, San Francisco



1 See Technical Notes "HIV Prevalence Rates by Zip Code."

* The 94104 zip code is not displayed because the total population in this zip code is less than 500.

Technical Notes

HIV Surveillance Methods

San Francisco HIV cases are reported primarily through active surveillance activities in which public health personnel review laboratory and pathology reports and medical records to identify cases and complete the case report forms. HIV cases are also identified through passive reporting, review of death certificates, validation studies using secondary data sources such as hospital billing records or other disease registries, and reports from other health departments. The surveillance system is evaluated regularly for completeness, timeliness, and accuracy.

Completeness of HIV case reporting in San Francisco was evaluated for cases diagnosed in 2014 using capture-recapture methods[1] as recommended by the Centers for Disease Control and Prevention HIV Incidence and Case Surveillance Branch. The completeness of case reporting of HIV diagnoses in 2014 was found to be 99% (evaluated at 12 months after the end of the diagnosis period based on the capture-recapture log-linear models). In terms of timeliness, 96% of expected cases were reported within six months of the HIV diagnosis date.

The HIV data in this report include persons who were residents of San Francisco at the time they were diagnosed with HIV (all stages of infection) including San Francisco residents who were diagnosed in other jurisdictions. San Francisco started name-based case reporting for HIV cases in April 2006, as mandated by California law. Only cases reported confidentially by name are included in this report.

Stage of Disease at Diagnosis of HIV Infection

In 2014, the United States surveillance case definition[2] for HIV infection among adults and adolescents aged ≥13 years and children age<13 years was revised to expand the HIV infection classification staging system to five stages of HIV infection as described below. With the new case definition, stages 1-3 are classified on the basis of the first CD4 T-lymphocyte count and age on date of CD4 T-lymphocyte test, unless there is a stage-3-defining opportunistic illness. The CD4 T-lymphocyte percentage of total lymphocytes is only used when the corresponding CD4 T-lymphocyte count is unknown.

- HIV infection stage 0: This stage is early HIV infection and is established by a sequence of discordant HIV test results indicative of early HIV infection in which a negative or indeterminate result was within 180 days of a positive result. This sequence of discordant results may be based on testing history (previous documented negative/indeterminate results), or by a HIV testing algorithm. If the criteria for stage 0 are met, the stage is 0 (supersedes other stages) regardless of criteria for other stages (CD4 T-lymphocyte test results and opportunistic illness diagnoses).

1 Hall HI, Song R, Gerstel JE. Assessing the completeness of reporting human immunodeficiency virus diagnoses in 2002-2003: Capture recapture methods. American Journal of Epidemiology. 2006; 164:391-397.

2 Selik RE, Mokotoff ED, Branson B, Owen SM, Whitmore S, Hall HI. Revised Surveillance Case Definitions for HIV Infection -- United States, 2014. MMWR 2014;63(No. RR-3):1-10.

- HIV infection stage 1-3: HIV infection stage 1-3 is based on age-specific CD4 T-lymphocyte count or CD4 T-lymphocyte percentage of total lymphocytes.

	Age on date of CD4 T-lymphocyte test					
	<1 year		1-5 years		≥6 years	
Stage	Cells/ µL	%	Cells/ µL	%	Cells/ µL	%
1	≥1,500	≥34	≥1,000	≥30	≥500	≥26
2	750-1,499	26-33	500-999	22-29	200-499	14-25
3	<750	<26	<500	<22	<200	<14

Data on persons with HIV infection, stage 3 (AIDS) include persons whose infection has ever been classified as stage 3 (AIDS).

- HIV infection, stage unknown: No information available on CD4 count or percentage and no reported information on AIDS-defining conditions (every effort is made to collect CD4 counts or percentages at time of diagnosis).

Date of Initial HIV Diagnosis

The date of HIV diagnosis for newly diagnosed cases is determined based on the earliest date of any of the following: positive HIV antibody test, positive HIV antigen/antibody combination test, detectable viral load test, or physician-documented diagnosis in absence of sufficient laboratory evidence. The date of initial HIV diagnosis for assessing trends in new HIV diagnoses takes into account patient self-report of a positive HIV test as noted in the medical record that was prior to the confirmed HIV diagnosis made by laboratory or clinical evidence. However, CD4 or undetectable viral load tests prior to the confirmed HIV diagnosis are not used to determine date of initial HIV diagnosis.

HIV Case Rates and HIV Mortality Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. Annual race-specific mortality rates are calculated as the number of deaths (including all causes of death) for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. The annual populations are not available for transgender persons. Population denominators by year are obtained from the State of California, Department of Finance, Demographic Research Unit, in two sources: the California Intercensal Population Estimates[3] and California Population Projections[4] (http://www.dof.ca.gov/research/demographic/).

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

4 State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, December 2014.

Transgender Status

In September 1996, SFDPH began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. The majority of transgender HIV cases are male-to-female (transfemale). Due to the small number of transmale cases and potential small population size, their data are included with transfemale cases to protect confidentiality. Please note that there are several limitations of our transgender data. We believe that our report likely underestimated the number of transgender persons affected by HIV because data collected for HIV reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of HIV case reporting.

Grouping of Data Categories

Data in certain racial/ethnic or risk categories are grouped together when the number of persons with HIV in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown in some tables or figures represents Asian/Pacific Islander, Native American, and people of mixed race. Whenever possible, this report presents the expanded racial/ethnic categories rather than aggregating into the group "Other." The label "Other" in the Transmission Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring HIV perinatally, or persons of unidentified risk.

Medical Monitoring Project

The Medical Monitoring Project (MMP) is an ongoing CDC-funded national HIV/AIDS supplemental surveillance project. San Francisco is one of 23 project areas currently conducting MMP. Multi-stage probability proportional-to-size sampling is used to recruit HIV-infected adults receiving care at health facilities in San Francisco. Information about care utilization, clinical outcomes, resource needs, and HIV risk behaviors is collected through patient interviews and medical chart review. Interview and medical record abstraction data from 1,113 participants from the 2009-2013 San Francisco MMP cycles was used in this report. Data were weighted for the probability of selection based on known probabilities of selection at each sampling stage. In addition, data were weighted to adjust for non-response using predictors of patient level response, including facility size, race/ethnicity, time since HIV diagnosis and age group. Prevalence estimates (weighted percentages) were calculated using information from participants who completed both the standard questionnaire and also had their medical record abstracted. Percentages are weighted percentages and might not sum to 100 because of rounding.

Out-of-Jurisdiction Cases

Routine HIV case surveillance assigns case ownership by residence at diagnosis. HIV cases residing in San Francisco at time of diagnosis are considered San Francisco cases. HIV cases receiving care in San Francisco but who resided elsewhere at time of diagnosis are considered out-of-jurisdiction (OOJ) cases.

HIV Infection Stage 3 (AIDS) Survival

Survival was calculated as the time between the date of AIDS diagnosis and the date of death. This analysis included persons who met the case definition for HIV infection stage 3 (AIDS). The follow-up information for cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI) and Social Security death files. The most recent NDI and Social Security death file matches included deaths that occurred through December 31, 2013. Persons not known to have died were censored on the date of their last known follow-up or on December 31, 2013, whichever was more recent.

Causes of Death

Cause of death information on death certificates is summarized and coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths that occurred since 1999. A single cause of death is identified from all reported conditions that began the chain of events that resulted in death; this is known as the underlying cause of death. All conditions (including the underlying cause of death) listed on the death certificate are known as the multiple causes of death (http://www.cdc.gov/nchs/icd/icd10.htm). We obtained the ICD codes from annual matches to the National Death Index from 1999 to 2013. Deaths classified as B20-B24 and all AIDS-related opportunistic infections listed on the death certificate were included in the HIV-related classification.

The Vital Record Business Intelligence System (VRBIS) is a secure, web based electronic database of California's vital records and permits county health departments to access such data for purposes of official government business including epidemiologic analysis, surveillance, and program evaluation. The information in VRBIS is updated every 30 minutes and therefore contains more current data than national death registries.

Estimate of ART Use

Information on ART use is obtained from medical chart review. Using surveillance data to estimate use of ART will most likely result in an underestimate of ART use. The underestimate occurs because use of ART is collected at the time a person with HIV infection is reported (which is often close to the time that they are diagnosed), a time when some people have not yet begun treatment. The SFDPH collects follow-up information from selected health care facilities. For persons who receive care at these sites, treatment data are likely to be more complete because it allows us to capture the use of ART after diagnosis and the date the case report was completed. Follow-up information is not available for persons who have moved away from San Francisco or who receive ongoing care outside of the city. Surveillance data provide information that indicates when a person was prescribed ART but does not provide information on adherence. Persons whose medical records indicate that they were prescribed ART are assumed to have received it.

The lower level estimate of ART use (Table 3.6 on page 27) was calculated among all cases living with HIV.

The upper level estimate (Table 3.6 on page 27, Figure 3.4 on page 86) was calculated among cases who had follow-up information within the last two years and whose chart review was completed between January 2014 and April 2016.

Female Presumed Heterosexual Contact

In 2010 the CDC HIV Incidence Case Surveillance Branch accepted a definition for female presumed heterosexual contact to reclassify the transmission category for adult female cases who would otherwise be reported with no identified risk. The definition for female presumed heterosexual contact was first proposed by the Council of State and Territorial Epidemiologists[5]. Like other transmission categories, the definition uses patient history variables collected on the HIV adult case report form. The female presumed heterosexual contact definition includes the following components: (1) the patient's sex at birth is female, (2) the patient had sex with male(s), (3) the patient had no indication of injection drug use, and (4) there is no other known information that would suggest a likely alternative source of HIV infection.

HIV Prevalence Rates by Zip Code

The HIV prevalence rate among men is calculated using the number of living male HIV cases by their most current zip code divided by the male population aged 13 and older, multiplied by 100,000. Updated current address information and their corresponding zip codes are collected as part of routine surveillance including medical chart reviews and laboratory reports for all San Francisco cases. Population data used in the denominator is from the U.S. Census Bureau 2010 for Zip Code Tabulation Areas (ZCTAs). Rates were suppressed for a zip code if the case count was less than five or the population size was less than 500.

5 Council of State and Territorial Epidemiologists Positions statements 2007: Heterosexual HIV transmission classification. Available from http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PS/07-ID-09.pdf

Data Tables

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
HIV infection stage 3 cases	3	26	99	274	558	860	1236	1632	1763	2161
HIV infection stage 3 deaths	0	8	32	111	273	534	807	878	1040	1279
Persons living with HIV infection stage 3	3	21	88	251	536	862	1291	2045	2768	3650

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
HIV infection stage 3 cases	2046	2286	2329	2069	1784	1557	1076	803	694	578
HIV infection stage 3 deaths	1364	1512	1641	1602	1601	1485	993	424	402	353
Persons living with HIV infection stage 3	4332	5106	5794	6261	6444	6516	6599	6978	7270	7495

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
HIV infection stage 3 cases	557	514	493	561	483	480	449	446	435	325
HIV infection stage 3 deaths	350	324	323	303	309	312	289	271	229	211
Persons living with HIV infection stage 3	7702	7892	8062	8320	8494	8662	8822	8997	9203	9317

Year	2010	2011	2012	2013	2014	2015
HIV infection stage 3 cases	299	251	240	187	136	116
HIV infection stage 3 deaths	195	188	184	192	172	160
Persons living with HIV infection stage 3	9421	9484	9540	9535	9499	9455

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	290	272	254	229	220	220	227	174	134	106
African American	76	79	79	66	63	66	46	49	33	43
Latino	111	105	119	112	109	82	109	96	84	67
Asian/Pacific Islander	32	48	41	38	38	34	53	47	42	31
Other	19	27	21	23	23	17	18	16	16	8

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	151	137	132	119	113	112	121	88	68	52
African American	238	226	229	203	203	192	151	168	131	140
Latino	170	146	171	144	149	103	144	132	110	83
Other	34	47	40	41	37	31	48	38	38	24

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	**10**	**11**	**9**	**6**	**8**	**9**	**2**	**5**	**4**	**5**
African American	47	64	65	42	39	66	31	31	4	31
Latina	7	13	9	18	12	15	17	7	6	8
Other	3	5	2	1	4	2	1	2	1	2

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
MSM	360	328	360	309	282	291	347	288	225	177
PWID	19	20	18	14	22	12	13	11	13	6
MSM-PWID	85	82	59	69	64	47	44	40	36	25
Other	16	29	22	23	35	13	20	11	16	17

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PWID	18	20	15	11	14	16	5	10	8	11
Heterosexual	13	24	17	16	17	19	17	10	2	11
Other	4	4	6	3	4	6	1	2	2	2

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White	123	122	117	111	109	89	89	88	75	85	84
African American	245	249	333	223	282	216	199	172	212	178	179
Latino	75	90	74	62	75	59	56	50	56	55	58
Other	15	19	18	24	16	10	12	14	15	9	19

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White	7	4	6	11	8	8	5	2	2	5	6
African American	73	70	82	68	64	75	51	58	58	47	73
Latino	7	10	10	22	5	2	2	2	4	2	10
Other	2	2	2	2	2	1	2	6	1	1	1

White	2011	2012	2013	2014	2015
Public	23%	15%	17%	18%	30%
Private	41%	46%	48%	50%	41%
None	21%	26%	26%	24%	19%
Missing	15%	13%	9%	8%	10%

African American	2011	2012	2013	2014	2015
Public	47%	43%	47%	55%	51%
Private	21%	24%	18%	18%	12%
None	24%	20%	24%	12%	23%
Missing	8%	13%	10%	15%	14%

Latino	2011	2012	2013	2014	2015
Public	32%	28%	19%	31%	23%
Private	28%	26%	42%	31%	33%
None	23%	38%	34%	31%	36%
Missing	17%	8%	5%	7%	8%

Other	2011	2012	2013	2014	2015
Public	22%	25%	22%	22%	18%
Private	39%	35%	38%	36%	38%
None	24%	31%	27%	28%	31%
Missing	16%	8%	13%	14%	13%

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	261	240	229	208	193	198	211	158	119	89
African American	50	42	42	43	35	39	33	35	25	31
Latino	101	91	107	94	84	70	89	88	70	57
Asian/Pacific Islander	28	38	38	36	32	31	49	45	40	26
Other	16	23	19	20	17	15	15	12	13	5

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male Rectal Gonorrhea (HIV+)	214	215	183	158	157	209	273	314	282	347
Male Rectal Gonorrhea (HIV-)	236	181	182	203	242	323	439	425	500	644
Male Gonococcal Proctitis (HIV+)	24	25	18	10	6	11	12	14	15	21
Male Gonococcal Proctitis (HIV-)	16	9	17	16	12	13	12	18	22	20

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Primary (HIV+)	41	27	49	50	71	64	83	83	74	86
Secondary (HIV+)	83	73	119	106	134	138	178	144	144	137
Early Latent (HIV+)	101	80	99	99	151	190	231	269	287	301
Early syphilis among HIV+	225	180	267	255	356	392	492	496	505	524

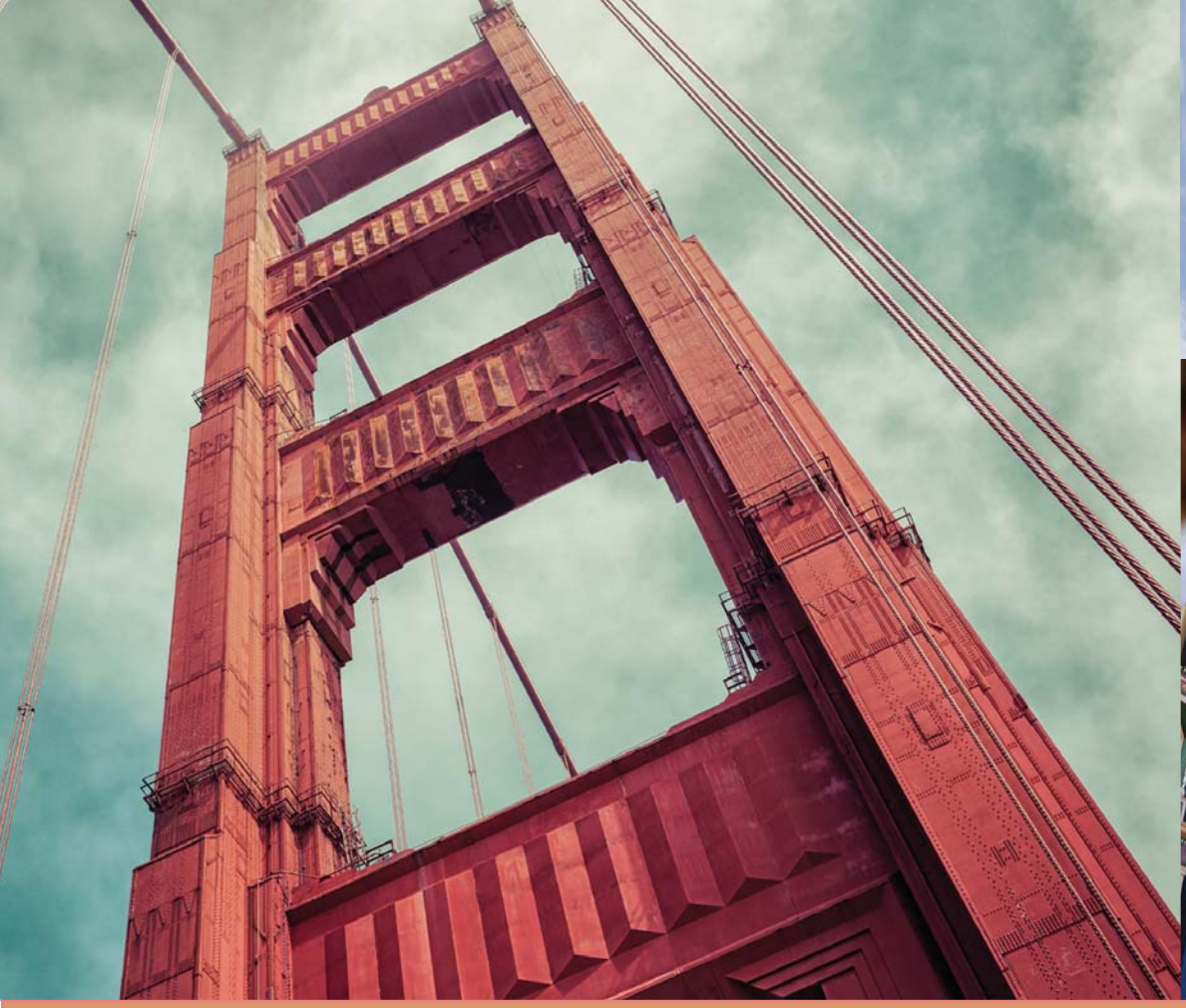
Primary (HIV-)	28	26	52	47	55	65	74	97	76	103
Secondary (HIV-)	45	42	56	67	62	50	87	82	94	81
Early Latent (HIV-)	32	40	48	62	58	53	69	116	127	160
Early syphilis among HIV-	105	108	156	176	175	168	230	295	297	344

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	16	22	17	10	17	12	4	11	11	10
African American	15	13	12	9	15	11	6	6	3	3
Latino	3	2	2	5	1	5	4	2	5	2
Other	3	3	2	1	3	0	4	2	2	2

Age in years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
18-24	2	1	1	1	3	2	1	2	0	0
25-29	4	7	6	3	1	4	0	1	2	5
30-39	6	11	7	3	9	1	2	1	5	5
40-49	13	13	11	6	12	10	10	9	5	4
50+	12	8	8	12	11	11	5	8	9	3

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	8	7	4	5	6	9	7	3	2	3
African American	9	19	19	10	10	10	6	5	2	6
Latino	6	8	8	9	14	6	10	5	3	4
Other	3	9	2	1	6	2	2	3	2	2

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
White	15	18	14	9	12	14	4	8	6	9
African American	12	16	16	10	9	15	7	7	1	7
Latina	4	7	5	10	7	9	10	4	4	5
Other	4	7	3	1	7	3	2	3	1	3



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