San Francisco Department of Public Health

HIV Epidemiology Annual Report

HIV Epidemiology Section

2013

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Abbreviations

ART	Antiretroviral therapy
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
HSF	Healthy San Francisco
KS	Kaposi's sarcoma
NHAS	National HIV/AIDS Strategy
NHBS	National HIV Behavioral Surveillance
MMP	Medical Monitoring Project
MSM	Men who have sex with men
PWID	People who inject drugs
MSM-PWID	Men who have sex with men and who also inject drugs
OOJ	Out-of-jurisdiction
SFDPH	San Francisco Department of Public Health
STD	Sexually transmitted diseases
UAI	Unprotected anal intercourse

Executive Summary

The San Francisco Department of Public Health (SFDPH) is developing a strategic plan for the population health of the city. During the first phase of this plan, a new Population Health Division (PHD) was established; within this division a new branch, the Applied Research, Community Health Epidemiology and Surveillance Branch (ARCHES), was created. ARCHES is responsible for collecting, managing, analyzing and interpreting data related to the health of people living in San Francisco and unifies all disease surveillance for SFDPH, including HIV.

Phase two of the SFDPH PHD strategic planning process focused on developing health indicators in six key focus areas. The six focus areas were chosen as those resulting in the greatest disparities and inequities in health outcomes for San Franciscans. People at risk of HIV infection or living with HIV are one focus population. ARCHES is responsible for developing and monitoring key health indicators for this population and data collected through HIV surveillance activities are used to track progress overtime.

Three headline health indicators to monitor the well-being of people at risk for or living with HIV were prioritized: 1) the number of new HIV diagnoses, 2) the proportion of persons newly diagnosed with HIV who are linked to HIV care within 3 months of diagnosis, and 3) the proportion of people newly diagnosed with HIV who achieve viral suppression within 12 months of diagnosis. These three health indicators are monitored through HIV surveillance data and are presented in Figure 3.1 "Continuum of HIV care among persons diagnosed with HIV, 2009-2012, San Francisco" on page 13 of this report.

These health indicators are consistent with the White House Office of National AIDS Policy's National HIV/AIDS Strategy (NHAS) which set goals for increasing access to care for people living with HIV, optimizing their health outcomes and reducing HIV-related health disparities. In this report, we summarize the impact of the NHAS and highlight successes in San Francisco.

San Francisco continues to make progress towards decreasing the numbers of persons newly infected, increasing access to care and improving health outcomes for persons with HIV, and is poised to meet the goals of NHAS. For example, the NHAS goals for 2010-2015 are to reduce late stage HIV diagnosis by 25%, to increase linkage to care to 85%, and to increase viral suppression among persons in HIV care by 10%. HIV surveillance data presented in this report show that substantial progress has been made in each of these outcomes in our city. However, there are noticeable differences in these care indicators by demographic and risk characteristics. For example, African Americans, younger persons, transgendered persons and people who inject drugs often experience worse outcomes in many of the key health indicators. We will continue to use HIV surveillance data to monitor these trends and inform future prevention and care efforts to eliminate these disparities and inequities.

1 Overview of HIV in San Francisco

Since the epidemic began, HIV/AIDS surveillance has been conducted in San Francisco through active and passive methods and evaluated routinely. The following terms are new in this report. The term "injection drug user" and acronym "IDU" are replaced by "people who inject drugs" and "PWID", respectively. The term "exposure category" is replaced by "transmission category" to be consistent with national HIV case surveillance reports.

As of December 31, 2013, there were 15,901 San Francisco residents diagnosed with HIV infection who were alive (Table 1.1). These persons comprised 13% of California's living HIV cases and 2% of persons living with HIV reported nationally. Compared to cases reported in California and the United States, San Francisco living HIV cases were more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM-PWID).

Compared to all living HIV cases in San Francisco, newly diagnosed HIV cases in San Francisco had a similar distribution by gender, a greater proportion of Latinos and Asian/Pacific Islanders, and a smaller proportion of MSM-PWID. Compared to newly diagnosed national HIV cases, newly diagnosed HIV cases in San Francisco were more likely to be male, white, and MSM.

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

	Living HIV Cases			Newly Diagnosed HIV Cases	
	San Francisco[1] (N = 15,901) %	California[2] (N = 120,480) %	United States[3] (N = 898,529) %	San Francisco[1], 2013 (N = 359) %	United States[3], 2011 (N = 42,842) %
Gender					
Male	92%	87%	75%	91%	79%
Female	6%	12%	25%	6%	21%
Transgender[4]	2%	1%	--	3%	--
Race/Ethnicity					
White	61%	43%	33%	46%	28%
African American	13%	18%	43%	12%	46%
Latino	18%	33%	20%	25%	21%
Asian/Pacific Islander	6%	4%	1%	14%	2%
Native American	1%	<1%	<1%	1%	<1%
Other/Unknown	2%	1%	2%	3%	2%
Transmission Category					
MSM	74%	66%	43%	77%	50%
PWID	6%	7%	13%	6%	4%
MSM-PWID	15%	8%	5%	9%	2%
Heterosexual	3%	9%	19%	4%	15%
Other/Unidentified	2%	10%	20%	4%	29%

1 San Francisco data are reported through March 11, 2014 for cases diagnosed through December 31, 2013.
2 California data are reported through December 2013. California data on newly diagnosed HIV cases are not available.
3 U.S. data are reported through June 30, 2012 and reflect cases diagnosed through December 31, 2011. U.S. data reflect unadjusted numbers for 50 states and 6 dependent areas and may be found in the CDC HIV Surveillance Report, 2011; vol.23.
4 Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

HIV infection stage 3 (AIDS) cases diagnosed each year among San Francisco residents reached a peak of 2,331 cases in 1992 and declined since then (Figure 1.1). Deaths among HIV infection stage 3 (AIDS) cases decreased dramatically beginning in 1995 due to the impact of combination antiretroviral therapies (ART). From 1999 and on, both cases and deaths have shown slight declines, however, reporting delays affect the numbers for recent years. Therefore, the numbers of cases and deaths for 2012 and 2013 may be revised upward in future reports.

The number of San Franciscans living with HIV infection stage 3 (AIDS) has continued to rise every year since 1980. This is due to effective ART and a lower number of deaths than new cases each year. There were 9,634 San Francisco residents living with HIV infection stage 3 (AIDS) by the end of 2013.

Figure 1.1 HIV infection stage 3 (AIDS) cases, deaths, and prevalence, 1980-2013, San Francisco

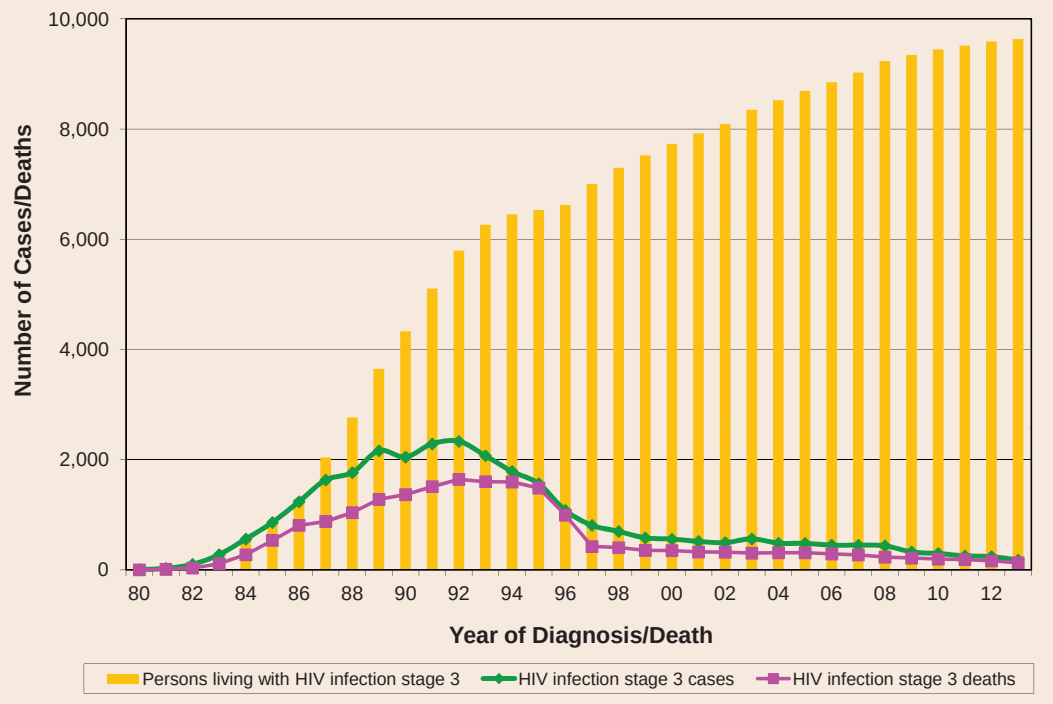


Figure 1.2 illustrates the number of persons newly diagnosed with HIV infection (green line), number of deaths each year (red line), and number of persons living with HIV infection between 2006 and 2013 (yellow bars). The date of HIV diagnosis for newly diagnosed cases was determined based on the earliest date of any of the following: positive HIV antibody test, viral load or CD4 test, initiation of ART, or patient self-report of a positive HIV test. The number of new HIV diagnoses shown by year includes persons who were diagnosed in that year with HIV, persons initially diagnosed with HIV infection Stage 3 (AIDS), and persons initially diagnosed with HIV (stage 1, 2, unknown) and developed stage 3 in a later year.

The number of new HIV diagnoses declined between 2007 and 2011, stabilized in 2012, and continued to decline in 2013. The number of deaths was steady from 2006 to 2007 and has declined slightly each year since. For recent years, the number of cases diagnosed and deaths may be underestimated due to reporting delays.

The number of living cases by year 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. Persons living with HIV increased from 14,469 in 2006 to 15,901 in 2013. The increasing number of living cases is a reflection of a steady addition of newly diagnosed cases over time coupled with a decline in deaths in each year. These data only include persons who have been diagnosed and reported to the health department. HIV-infected persons who are unaware of their infection and persons diagnosed with an anonymous HIV test are not included unless they also tested confidentially or entered care in San Francisco. These figures therefore underestimate the true prevalence and incidence of HIV in the city.

Figure 1.2 New HIV diagnoses, deaths, and prevalence, 2006-2013, San Francisco

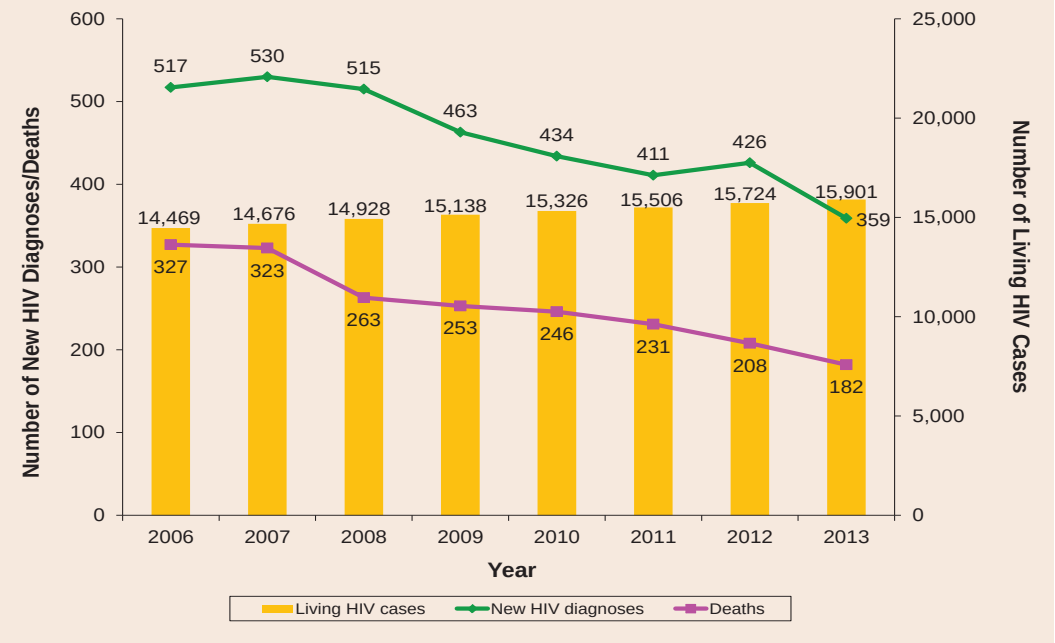


Table 1.2 shows the characteristics of persons diagnosed with HIV between 2009 and 2013. The majority were male, white, age 30-49 years and MSM. Race/ethnicity distributions were fairly similar year to year from 2009 to 2013, but data for recent years suggest small increases in proportions of Latinos and Asian/Pacific Islanders. The proportion of new diagnoses among persons aged 25-29 years also increased in recent years. No children (<13 years) were diagnosed with HIV during these years. Proportions of diagnoses among MSM-PWID, the second largest transmission category, declined from 2009 to 2012 and remained stable in 2013.

Table 1.2 Trends in persons diagnosed with HIV infection by demographic and risk characteristics, 2009-2013, San Francisco

	Year of Initial HIV Diagnosis[1]				
	2009	2010	2011	2012	2013
Total Number	463	434	411	426	359
Gender					
Male	91%	90%	88%	94%	91%
Female	5%	8%	10%	5%	6%
Transfemale[2]	4%	3%	2%	<1%	3%
Race/Ethnicity					
White	52%	48%	52%	49%	46%
African American	15%	14%	16%	11%	12%
Latino	21%	25%	20%	25%	25%
Asian/Pacific Islander	8%	9%	8%	12%	14%
Native American	0%	1%	0%	2%	1%
Other/Unknown	5%	4%	4%	2%	3%
Age at HIV Diagnosis (years)					
0 - 12	0%	0%	0%	0%	0%
13 - 17	<1%	<1%	<1%	0%	0%
18 - 24	12%	12%	10%	13%	12%
25 - 29	13%	13%	15%	16%	22%
30 - 39	31%	31%	27%	31%	29%
40 - 49	27%	28%	31%	29%	25%
50+	17%	15%	17%	12%	12%
Transmission Category					
MSM	72%	65%	71%	79%	77%
PWID	5%	8%	7%	3%	6%
MSM-PWID	15%	14%	11%	9%	9%
Heterosexual	5%	8%	6%	5%	4%
Other/Unidentified	3%	5%	5%	4%	4%

1 Data include persons diagnosed with HIV infection in any stage and reported as of March 11, 2014. Percentages may not add to 100% due to rounding.

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 persons living with HIV continues to increase due to ongoing incidence of HIV combined with an increase in survival 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. As of December 31, 2013, 15,901 San Francisco residents were living with HIV (Table 1.3). Demographic and risk characteristics of persons living with HIV remained mostly stable between 2010 and 2013; cases were predominately white, age 50 years and older, and MSM (including MSM-PWID). This table demonstrates aging of persons living with HIV: the proportion of persons aged 50 years and older increased from 45% to 54% between 2010 and 2013, while the proportions of persons aged 30-39 and 40-49 years decreased.

Table 1.3 Trends in persons living with HIV by demographic and risk characteristics, 2010-2013[1], San Francisco

	2010		2011		2012		2013	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	14,090	(92)	14,244	(92)	14,462	(92)	14,638	(92)
Female	878	(6)	902	(6)	907	(6)	906	(6)
Transfemale[2]	358	(2)	360	(2)	355	(2)	357	(2)
Race/Ethnicity								
White	9,531	(62)	9,617	(62)	9,696	(62)	9,760	(61)
African American	2,014	(13)	2,027	(13)	2,033	(13)	2,038	(13)
Latino	2,607	(17)	2,656	(17)	2,732	(17)	2,795	(18)
Asian/Pacific Islander	772	(5)	799	(5)	847	(5)	894	(6)
Native American	80	(1)	82	(1)	89	(1)	90	(1)
Other/Unknown	322	(2)	325	(2)	327	(2)	324	(2)
Age in Years (at end of each year)								
0 - 12	5	(<1)	4	(<1)	3	(<1)	3	(<1)
13 - 17	13	(<1)	12	(<1)	8	(<1)	4	(<1)
18 - 24	167	(1)	153	(1)	153	(1)	138	(1)
25 - 29	443	(3)	442	(3)	455	(3)	459	(3)
30 - 39	2,135	(14)	1,987	(13)	1,916	(12)	1,869	(12)
40 - 49	5,658	(37)	5,451	(35)	5,133	(33)	4,778	(30)
50+	6,905	(45)	7,457	(48)	8,056	(51)	8,650	(54)
Transmission Category								
MSM	11,153	(73)	11,316	(73)	11,533	(73)	11,708	(74)
PWID	1,025	(7)	1,016	(7)	992	(6)	972	(6)
MSM-PWID	2,396	(16)	2,384	(15)	2,382	(15)	2,380	(15)
Heterosexual	469	(3)	491	(3)	507	(3)	519	(3)
Transfusion/Hemophilia	25	(<1)	25	(<1)	25	(<1)	25	(<1)
Other/Unidentified	258	(2)	274	(2)	285	(2)	297	(2)
Total	**15,326**		**15,506**		**15,724**		**15,901**	

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."

Over half of living male HIV cases diagnosed in San Francisco were white and MSM (Table 1.4). White and African American male HIV cases had similar age distributions at the end of 2013, while Latino, Asian/Pacific Islander, and Native American males were younger.

Among living female HIV cases, African Americans and whites 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.

Age 50 years and older was the largest age category for both men and women living with HIV (55% and 51%, respectively).

Table 1.4 Characteristics of persons living with HIV as of December 2013, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number[1]
Male									
Transmission Category									
MSM	7,665	(81)	879	(57)	2,047	(82)	726	(83)	11,520
PWID	194	(2)	238	(15)	59	(2)	22	(3)	522
MSM-PWID	1452	(15)	316	(20)	298	(12)	92	(11)	2,217
Heterosexual	30	(<1)	70	(5)	50	(2)	11	(1)	165
Transfusion/Hemophilia	6	(<1)	3	(<1)	2	(<1)	3	(<1)	14
Other/Unidentified	77	(1)	43	(3)	49	(2)	18	(2)	200
Age in Years (at end of 2013)									
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)	1
13 - 17	0	(0)	1	(0)	1	(0)	0	(0)	2
18 - 24	28	(<1)	26	(2)	40	(2)	16	(2)	114
25 - 29	163	(2)	49	(3)	131	(5)	46	(5)	401
30 - 39	802	(9)	136	(9)	472	(19)	188	(22)	1661
40 - 49	2,664	(28)	426	(28)	878	(35)	325	(37)	4,402
50+	5,767	(61)	911	(59)	983	(39)	297	(34)	8,057
Male Subtotal	**9,424**		**1,549**		**2,505**		**872**		**14,638**
Female									
Transmission Category									
PWID	157	(59)	205	(56)	58	(32)	17	(23)	450
Heterosexual	78	(30)	131	(36)	91	(51)	45	(61)	348
Transfusion/Hemophilia	5	(2)	2	(1)	2	(1)	2	(3)	11
Other/Unidentified	24	(9)	28	(8)	28	(16)	10	(14)	97
Age in Years (at end of 2013)									
0 - 12	0	(0)	1	(0)	1	(1)	0	(0)	2
13 - 17	0	(0)	0	(0)	2	(1)	0	(0)	3
18 - 24	2	(1)	5	(1)	10	(6)	1	(1)	19
25 - 29	10	(4)	6	(2)	12	(7)	1	(1)	29
30 - 39	32	(12)	41	(11)	31	(17)	17	(23)	130
40 - 49	88	(33)	95	(26)	45	(25)	25	(34)	258
50+	132	(50)	218	(60)	78	(44)	30	(41)	465
Female Subtotal	**264**		**366**		**179**		**74**		**906**
Transfemale[2]	**72**		**123**		**111**		**38**		**357**
Total	**9,760**		**2,038**		**2,795**		**984**		**15,901**

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."

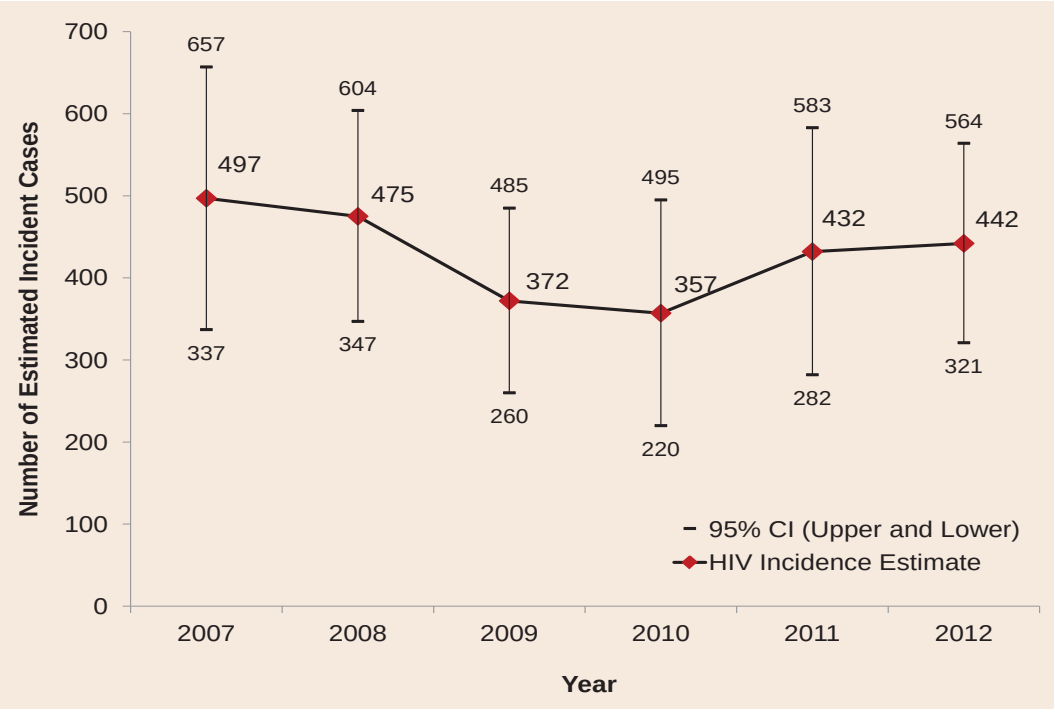
HIV incidence estimates

The SFDPH serves as one of the 25 national HIV incidence surveillance sentinel sites monitoring the number and rates of new HIV infections. 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 newly diagnosed HIV individuals is retested using a laboratory assay (called BED) that classifies individuals as having either a recently acquired HIV infection 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 2007-2012 data.

Overall, the estimated number of new HIV infections has remained relatively stable since 2007 (Figure 1.3). 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.

Figure 1.3 Estimated number of new HIV infections, 2007-2012, San Francisco



CI: Confidence Interval.

Table 1.5 presents the estimated rate per 100,000 of new infections by demographic and risk characteristics. The rate of infection among MSM is disproportionately high: 796 new infections per 100,000 MSM in 2012 compared to an overall rate of 62 in San Francisco. With caution given to the large margin of error, the data suggest higher incidence among African Americans and Latinos compared to whites for the years we are able to provide an estimate.

Table 1.5 Estimated rate of new HIV infections per 100,000 population by demographic and risk characteristics in San Francisco, 2007-2012

	2007 Rate per 100,000 (95% CI)	2008 Rate per 100,000 (95% CI)	2009 Rate per 100,000 (95% CI)	2010 Rate per 100,000 (95% CI)	2011 Rate per 100,000 (95% CI)	2012 Rate per 100,000 (95% CI)
Overall	71 (48 - 94)	68 (49 - 86)	53 (37 - 69)	51 (31 - 70)	61 (40 - 82)	62 (45 - 80)
Sex at Birth						
Male	129 (86 - 172)	127 (92 - 163)	101 (70 - 132)	88 (52 - 125)	114 (73 - 155)	116 (84 - 149)
Female	**	**	**	**	**	**
Race/Ethnicity						
White	88 (52 - 123)	83 (56 - 111)	63 (38 - 88)	52 (25 - 80)	72 (40 - 104)	68 (43 - 93)
African American	**	104 (26 - 183)	116 (33 - 198)	**	**	**
Latino	105 (32 - 178)	135 (70 - 200)	68 (22 - 112)	109 (30 - 189)	90 (23 - 159)	116 (56 - 175)
Other	33 (9 - 58)	**	**	**	**	**
Age (years)						
13-29	134 (68 - 199)	110 (62 - 159)	103 (54 - 152)	95 (33 -157)	120 (50 -189)	135 (77 -194)
30-39	92 (46 - 137)	90 (55 - 126)	69 (37 - 101)	55 (19 - 92)	66 (26 - 106)	71 (38 - 104)
40-49	74 (21 - 127)	103 (54 - 151)	58 (22 - 94)	84 (33 - 135)	83 (33 - 134)	74 (37 - 110)
50+	**	**	**	**	**	**
Transmission Category[1]						
MSM	845 (561 - 1,129)	826 (592 - 1,061)	677 (468 - 887)	589 (342 - 835)	777 (494 - 1,059)	796 (595 - 1,020)
Non-MSM	9 (2 - 17)	**	**	**	**	**

** Incidence estimate not calculated due to incomplete data.

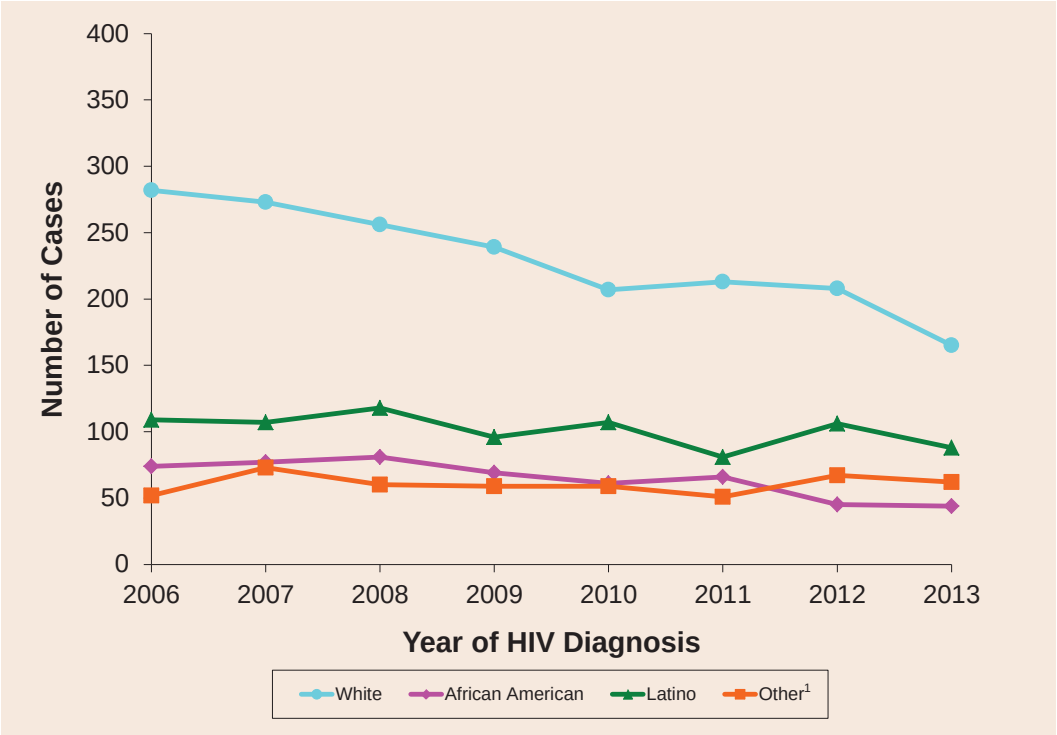
1 MSM includes MSM-PWID; Non-MSM includes heterosexuals, non-MSM PWID, and other.

2 Trends in HIV Diagnoses

Race/ethnicity

Trends by racial/ethnic category for cases diagnosed with HIV infection show that, from 2006 to 2013, whites accounted for the majority of diagnosed cases (Figure 2.1). The number of white HIV cases declined for most of this time period, leveled off between 2010 and 2012, and continued to decline in 2013. The number of African American cases declined in 2012 and 2013 compared to previous years. Numbers of HIV cases for other racial/ethnic groups remained fairly stable.

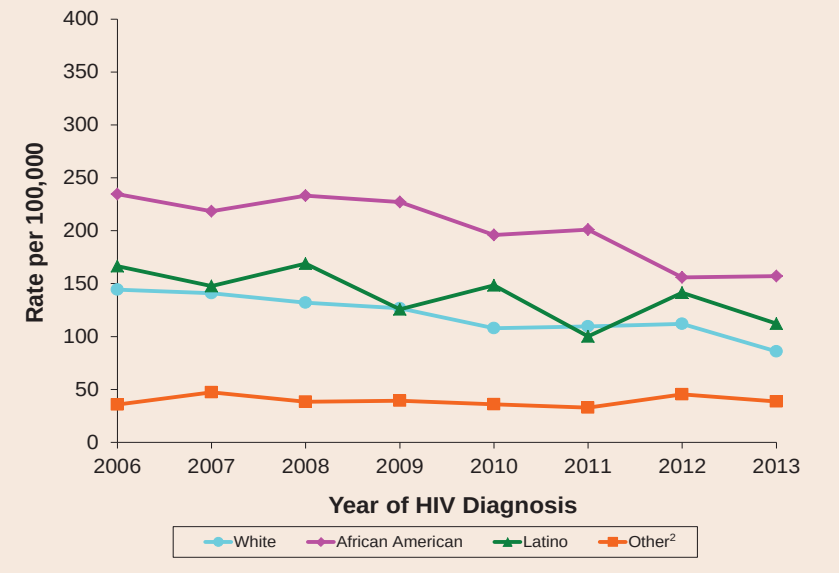
Figure 2.1 Number of cases diagnosed with HIV infection by race/ethnicity, 2006-2013, San Francisco



1 Cases in the "Other" racial/ethnic category include 68% Asian/Pacific Islanders, 5% Native Americans, 23% Multi-race, and 4% unknown.

Among men, the annual rates of HIV diagnosis are highest in African Americans; rates declined from 2006 to 2012 and leveled in 2013 (Figure 2.2). There was also a declining trend in rates of HIV diagnosis for white men during 2006 to 2010, and the rate has been fairly stable since 2010. HIV rates for Latino men have decreased since 2008. Men of other racial/ethnic groups remained fairly level in this time period but also show indications of increase in the most recent two years. In 2013, the rate of HIV diagnosis per 100,000 population was 157 among African American men, 112 among Latino men, and 86 among white men.

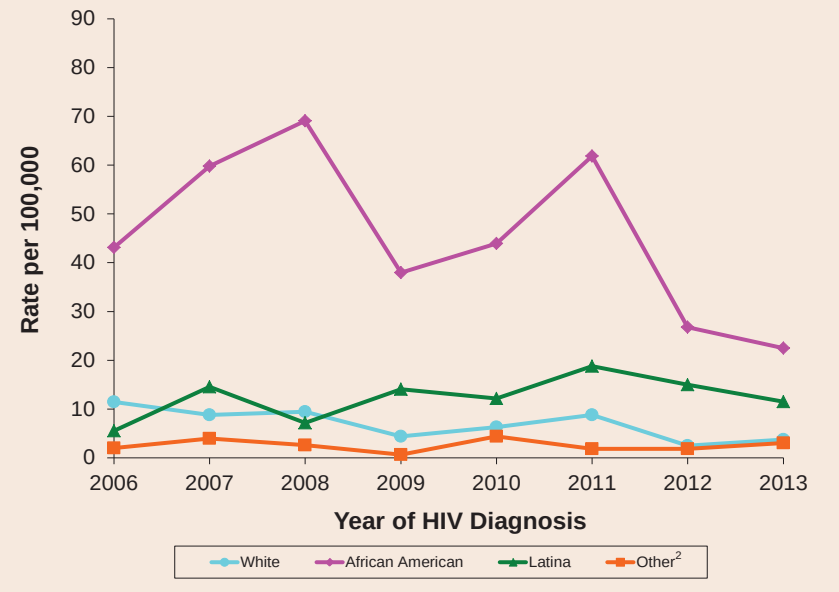
Figure 2.2 Annual rates[1] of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2013, San Francisco



1 See Technical Notes "HIV Case Rates and HIV Mortality Rates."
2 Cases in the "Other" racial/ethnic category include 69% Asian/Pacific Islanders, 5% Native Americans, 22% Multi-race, and 4% unknown.

In San Francisco rates of HIV diagnosis are significantly lower among women compared to men. For the period of 2006 to 2013, although annual rates of HIV diagnosis were higher for African American women compared to other racial/ethnic groups, they declined to their lowest in 2012 and 2013 (Figure 2.3). Rates for white women were similarly at the lowest points in 2012 and 2013. Rates for Latina women increased in 2011 and have been declining since then. In 2013, the rate of HIV diagnosis per 100,000 population was 23 for African American women, 12 for Latina women, and 4 for white women.

Figure 2.3 Annual rates[1] of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2013, San Francisco

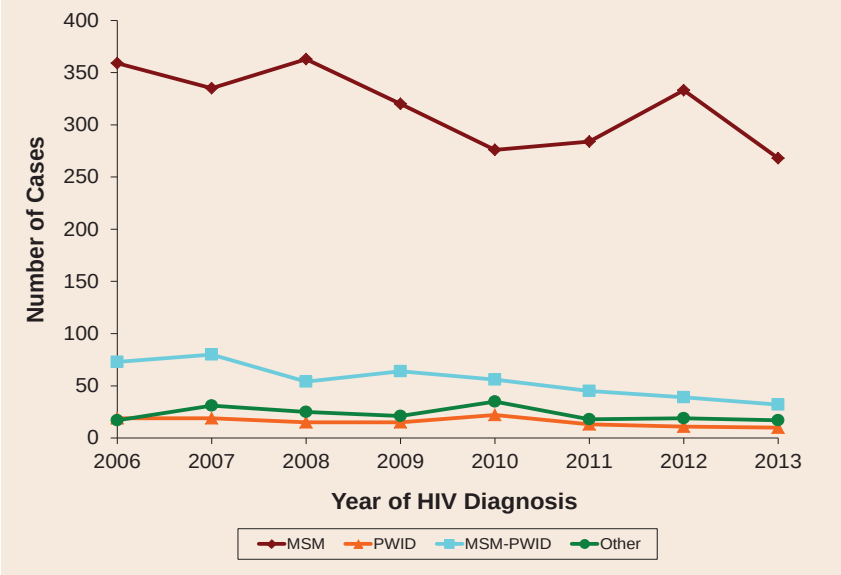


1 See Technical Notes "HIV Case Rates and HIV Mortality Rates."
2 Cases in the "Other" racial/ethnic category include 59% Asian/Pacific Islanders, 6% Native Americans, 28% Multi-race, and 6% unknown.

Transmission category

Most males diagnosed with HIV infection in San Francisco are MSM. After declines in the numbers of MSM non-PWID diagnosed in 2009 to 2011 the number increased in 2012 (Figure 2.4). In recent years, trends in the number of male PWID cases (both MSM and heterosexual) declined. In 2013, 82% of male HIV cases were MSM non-PWID, 10% were MSM-PWID, and 3% were heterosexual PWID.

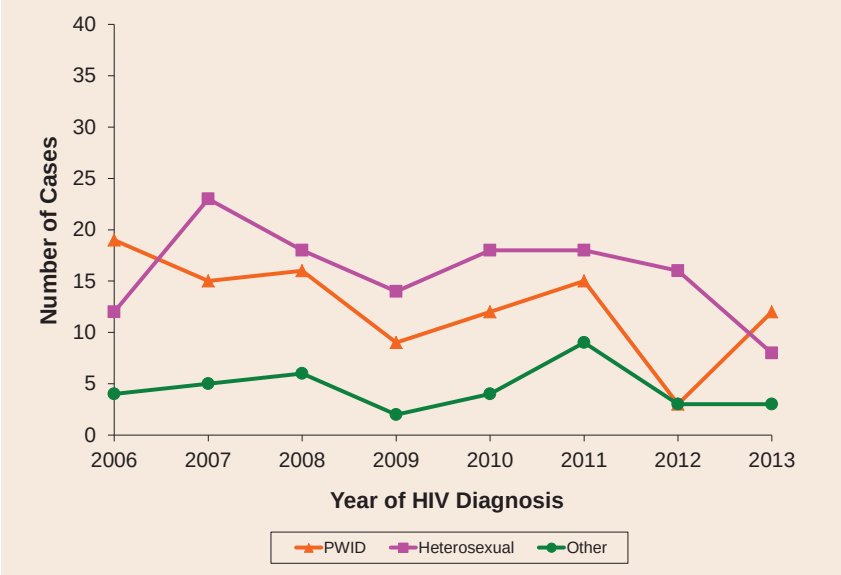
Figure 2.4 Number of male cases diagnosed with HIV infection[1] by transmission category, 2006-2013, San Francisco



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

Beginning in 2007, the number of annual female cases diagnosed with HIV infection due to heterosexual contact showed a trend similar to that for PWID cases, with heterosexual cases slightly exceeding PWID cases most years (Figure 2.5). In 2013, 52% of female cases acquired HIV through heterosexual contact and 35% through injecting drugs.

Figure 2.5 Number of female cases diagnosed with HIV infection[1] by transmission category, 2006-2013, 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 2010 and 2013 by gender and age at HIV diagnosis. Among males, the proportion of cases in the 25-29 years age group increased 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.

The age distribution among female cases diagnosed annually differs sharply from males, with more than 60% of annual diagnoses occurring in women aged 40 years and older. Few women under 30 years of age were newly diagnosed with HIV in recent years.

Table 2.1 Cases diagnosed with HIV infection by gender[1] and age at diagnosis, 2010-2013, San Francisco

	Year of Initial HIV Diagnosis							
	2010		2011		2012		2013	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in years)								
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)
13 - 17	2	(1)	1	(0)	0	(0)	0	(0)
18 - 24	46	(12)	36	(10)	51	(13)	43	(13)
25 - 29	50	(13)	57	(16)	66	(16)	72	(22)
30 - 39	127	(33)	101	(28)	131	(33)	96	(29)
40 - 49	109	(28)	109	(30)	111	(28)	80	(24)
50+	55	(14)	56	(16)	43	(11)	36	(11)
Male Subtotal	**389**	**(100)**	**360**	**(100)**	**402**	**(100)**	**327**	**(100)**
Female (Age in years)								
0 - 12	0	(0)	0	(0)	0	(0)	0	(0)
13 - 17	0	(0)	0	(0)	0	(0)	0	(0)
18 - 24	3	(9)	4	(10)	2	(9)	0	(0)
25 - 29	3	(9)	4	(10)	1	(5)	3	(13)
30 - 39	5	(15)	5	(12)	2	(9)	6	(26)
40 - 49	12	(35)	16	(38)	11	(50)	6	(26)
50+	11	(32)	13	(31)	6	(27)	8	(35)
Female Subtotal	**34**	**(100)**	**42**	**(100)**	**22**	**(100)**	**23**	**(100)**

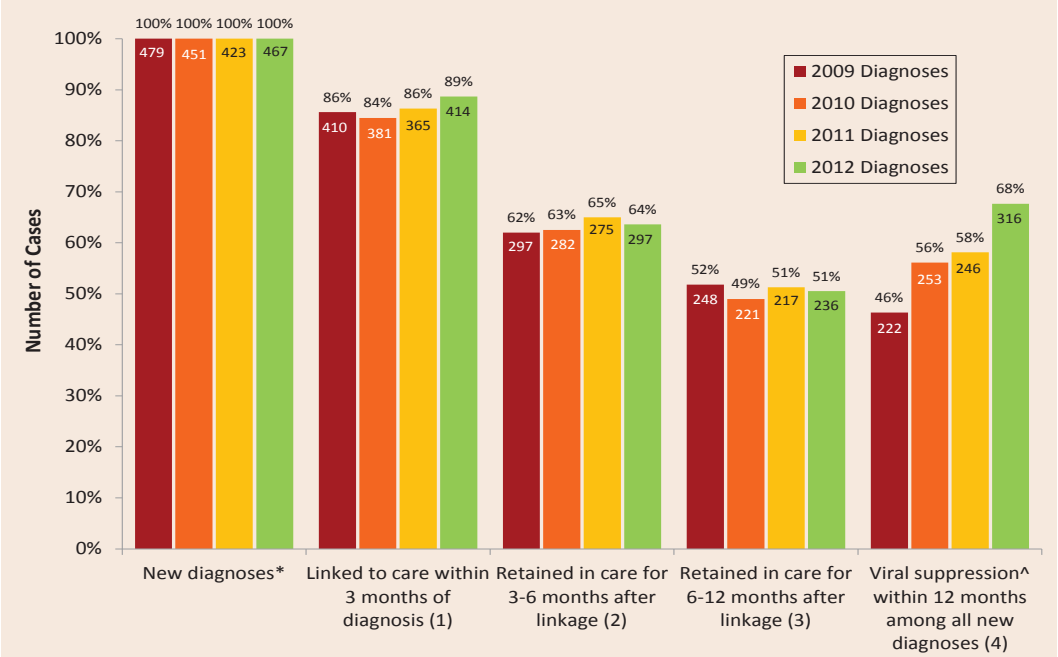
1 Transgender data by age are not presented in the table due to small numbers and potential small population.

3 Spectrum of Engagement in HIV Prevention and Care

Continuum of HIV care among persons newly diagnosed with HIV

To improve health outcomes for HIV-infected persons, rapid entry into care, ongoing engagement in care, and use of ART to achieve viral suppression are required. The SFDPH monitors these outcomes using reports of CD4 and viral load tests. For the four years from 2009 to 2012, the number of persons newly diagnosed with HIV has been relatively stable, between 423 and 479 (Figure 3.1). Over these years, the proportion of newly diagnosed persons who entered care within three months of diagnosis has increased to 89% in 2012[1]. However, not all persons who entered care continued to receive care; 62%-65% of persons diagnosed in 2009 to 2012 remained in care three to six months after initial linkage to care (i.e., had a second visit after their first medical visit)[2], and 49%-52% retained in care 6-12 months after linkage (i.e., had three visits)[3]. Of note, the four-year period has seen a substantial increase, from 46% to 68%, in the proportion of newly diagnosed persons who achieved viral suppression within 12 months[4]. Because not all newly diagnosed persons enter or remain in care and others move outside of San Francisco, our ability to measure these outcomes is partly impeded.

Figure 3.1 Continuum of HIV care among persons diagnosed with HIV, 2009-2012, San Francisco



* 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.

^ Defined as the latest viral load test during the specified period ≤ 200 copies/mL.

HIV care and prevention indicators

In July 2010, the White House Office of National AIDS Policy released its National HIV/AIDS Strategy (NHAS) setting goals for increasing access to care for people living with HIV, optimizing their health outcomes and reducing HIV-related health disparities. To monitor the impact of the NHAS, HIV surveillance data are used for core outcome measures and indicators.

Table 3.1 shows key HIV care and prevention indicators among persons with HIV in San Francisco. Between 2010 and 2012, late stage HIV diagnosis defined as the proportions of new cases who developed HIV infection stage 3 (AIDS) within three months of HIV diagnosis decreased. The proportion of new cases linked to care within three months of diagnosis increased from 84% to 89%. Early treatment initiation in San Francisco is evident as the median CD4 count at ART initiation increased from 560 cells/uL in 2010 to 654 cells/uL in 2012 among newly diagnosed persons with a CD4 count greater than 500 cells/uL. The proportions of persons who were virally suppressed within 12 months of their HIV diagnosis increased from 56% in 2010 to 68% in 2012. Among persons living with HIV and in care (with at least one viral load test), the proportion who were virally suppressed increased from 84% in 2010 to 88% in 2012.

San Francisco continues to make progress towards improving access to HIV care and health outcomes, and our city is poised to meet the goals of NHAS. For example, the NHAS goals for 2010 to 2015 are to reduce late stage HIV diagnosis by 25%, to increase linkage to care to 85%, and to increase viral suppression among persons in HIV care by 10%. In San Francisco, we have met or made substantial progress on these goals in the first few years: between 2010 and 2012, the proportion of persons with late HIV diagnosis decreased by 19% (from 26% to 21%); the proportion of persons linked to care within three months of diagnosis has exceeded 85% and was 89% in 2012; and the proportion of persons in care who were virally suppressed between 2010 and 2012 has increased by 5% (from 84% to 88%).

Table 3.1 Care and prevention indicators among new HIV diagnoses and living HIV cases, 2010-2012, San Francisco

Indicators	Year		
	2010	2011	2012
New HIV diagnoses[1]	**N=451**	**N=423**	**N=467**
Proportion developed AIDS within 3 months of diagnosis	26%	24%	21%
Proportion linked to care within 3 months of diagnosis	84%	86%	89%
Proportion virally suppressed[2] within 12 months of diagnosis	56%	58%	68%
Median CD4 count (cells/uL) at treatment initiation among those diagnosed with a CD4 count>500 cells/uL	560	652	654
Living HIV cases[3]	**N=14,304**	**N=14,533**	**N=14,751**
Proportion of cases who had ≥1 CD4/viral load test	74%	74%	73%
Proportion received ≥2 tests among those with ≥1 test	80%	78%	78%
Proportion virally suppressed[2] among living cases	61%	62%	62%
Proportion virally suppressed among those with ≥1 viral load test	84%	87%	88%

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 during the specified period ≤ 200 copies/mL.
3 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 persons who were diagnosed with HIV in 2012, a lower proportion of African Americans, younger persons, and MSM-PWID were linked to and retained in care and achieved viral suppression (Table 3.2). Among women newly diagnosed with HIV in 2012, a higher proportion were linked to care within three months of diagnosis compared to men, retention in care among women and men was similar, but the proportion of women who achieved viral suppression was lower than men.

Table 3.2 Care indicators among persons newly diagnosed with HIV in 2012 by demographic and risk characteristics, San Francisco

Characteristics	Number of diagnoses[1]	% Linked to care within 3 months of diagnosis[2]	% Retained in care 3-6 months after linkage[2]	% Virally suppressed within 12 months of diagnosis[2]
Total	**467**	**89%**	**64%**	**68%**
Gender				
Male	438	89%	64%	68%
Female	27	93%	63%	59%
Race/Ethnicity				
White	230	90%	63%	70%
African American	49	82%	51%	51%
Latino	118	89%	68%	68%
Asian/Pacific Islander	50	92%	68%	74%
Other/Unknown	20	85%	60%	60%
Age at Diagnosis				
13-24	56	88%	59%	59%
25-29	71	82%	54%	61%
30-39	146	90%	70%	75%
40-49	137	90%	65%	69%
50+	57	93%	61%	63%
Transmission Category				
MSM	367	90%	64%	71%
PWID	16	88%	75%	69%
MSM-PWID	40	85%	60%	50%
Heterosexual	29	93%	66%	62%
Other/Unidentified	15	60%	47%	47%

1 Includes persons diagnosed in 2012 based on a confirmed HIV test and does not take into account patient self-report of HIV infection. Numbers are used as the denominator for all proportion calculation.
2 Percent of total diagnoses.

Among all persons living with HIV, the proportion who achieved viral suppression was lower among women, transgendered persons, African Americans, younger persons, and people who inject drugs (Table 3.3).

Table 3.3 Care indicators among persons living with HIV in 2012 by demographic and risk characteristics, San Francisco

Characteristics	Number of living cases[1]	% with >= 1 lab test in 2012[2]	% with >=2 lab tests in 2012[2]	% Virally suppressed (most recent viral load test in 2012)[2]
Total	**14,751**	**73%**	**57%**	**62%**
Gender				
Male	13,568	72%	56%	63%
Female	854	77%	60%	57%
Transgender	329	77%	62%	55%
Race/Ethnicity				
White	9,204	73%	56%	64%
African American	1,894	75%	59%	58%
Latino	2,517	71%	56%	61%
Asian/Pacific Islander	777	74%	58%	66%
Other/Unknown	359	76%	56%	62%
Age as of 12/31/2012				
13-24	96	73%	52%	39%
25-29	357	72%	51%	49%
30-39	1,651	68%	50%	54%
40-49	4,809	71%	53%	60%
50+	7,838	75%	60%	67%
Transmission Category				
MSM	10,837	72%	56%	64%
PWID	942	73%	59%	54%
MSM-PWID	2,221	75%	58%	58%
Heterosexual	465	77%	60%	61%
Other/Unidentified	286	58%	43%	49%

1 Includes persons living with HIV at year-end 2012 and diagnosed by year-end 2011. Excludes persons who were non-SF residents at time of HIV diagnosis but SF residents at AIDS diagnosis. Numbers are used as the denominator for all proportion calculation.
2 Percent of total living cases.

Comparison of San Francisco HIV indicators with California and the United States

Table 3.4 displays the available HIV prevention and care indicators data in 2010 for San Francisco, California, and the United States (U.S.). These indicators are derived from data collected through HIV case and incidence surveillance, HIV behavioral surveillance and the Medical Monitoring Project (MMP). HIV behavioral surveillance data show that awareness of one's HIV infection is very high in San Francisco, 94% compared to 84% in the U.S., and a lower proportion of PWID in San Francisco reporting syringe sharing than in the U.S. The proportion of persons with a late HIV diagnosis in San Francisco is comparable to that in the U.S. in 2010. A slightly higher proportion of persons in HIV care reported unprotected sex in San Francisco compared to in the U.S. according to the MMP data. The HIV transmission rate per 100 persons living with HIV in San Francisco (2.6%) is lower than that in California (4.3%) and the U.S. (4.2%). The level of access to HIV care and viral suppression are higher in San Francisco compared to California and the U.S. The higher proportion of persons with laboratory tests in San Francisco may reflect greater completeness of reporting CD4 and viral load test results.

Table 3.4 Comparison of HIV prevention and care indicators for San Francisco, California, and the United States, 2010

Indicators[1]	San Francisco 2010	California[2] 2010	United States[3] 2010
Awareness of HIV status			
Estimated % aware of HIV infection (NHBS)	94%	n/a	84%
Late HIV diagnosis			
% diagnosed with AIDS within 3 months of HIV diagnosis	26%	n/a	25%
HIV sexual and injection risk behavior			
% MSM reporting unprotected anal sex with a discordant/unknown HIV status partner during last sex (NHBS)	14% (2011)	n/a	14% (2011)
% PWID reporting syringe sharing in last 12 months (NHBS)	15% (2009)	n/a	34% (2009)
% persons in HIV care reporting unprotected sex with negative/unknown status partner in last 12 months (MMP)	16%	n/a	13% (2009)
HIV transmission			
HIV transmission rate per 100 persons living with HIV	2.6%	4.3%	4.2%
HIV care access and outcome			
% linked to care within 3 months of HIV diagnosis	84%	79%	80%
% living HIV cases who had >=1 laboratory test (in care)	74%	61%	63%
% living HIV cases who had >=2 laboratory tests among those in care	80%	74%	80%
% virally suppressed among all living HIV cases	61%	44%	43%
% virally suppressed among those in care	84%	72%	69%

1 Data sources: data are derived from the National HIV Surveillance System unless otherwise noted as National HIV Behavioral Surveillance (NHBS) or Medical Monitoring Project (MMP).

2 California data are from two reports published in December 2013: a) California Addresses the National HIV/AIDS Strategy Goals and Objectives, b) The Continuum of HIV Care in California. http://www.cdph.ca.gov/programs/aids/Pages/tOASurv.aspx.

3 U.S. data are from the following reports: a) CDC HIV Surveillance Supplemental Report 2013; 18(No.5); published October 2013, b) CDC HIV Surveillance Supplemental Report 2013; 18(No.2, part B); published January 2013, c) CDC National HIV Prevention Progress Report, 2013; published December 2013.

Use of antiretroviral therapy

Table 3.5 shows estimates of antiretroviral therapy (ART) use among persons living with HIV as of December 31, 2013. Information on ART use is obtained from medical chart review and persons with a medical record indicating that they were prescribed ART are 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=15,901). The upper level estimate was calculated among living cases for whom a chart review was completed between January 2012 and March 2014 (N=7,258). 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, 84%-91% of persons living with HIV received ART. ART use was lower among women, persons with race/ethnicity other than white, PWID, heterosexuals, the homeless, and persons without health insurance.

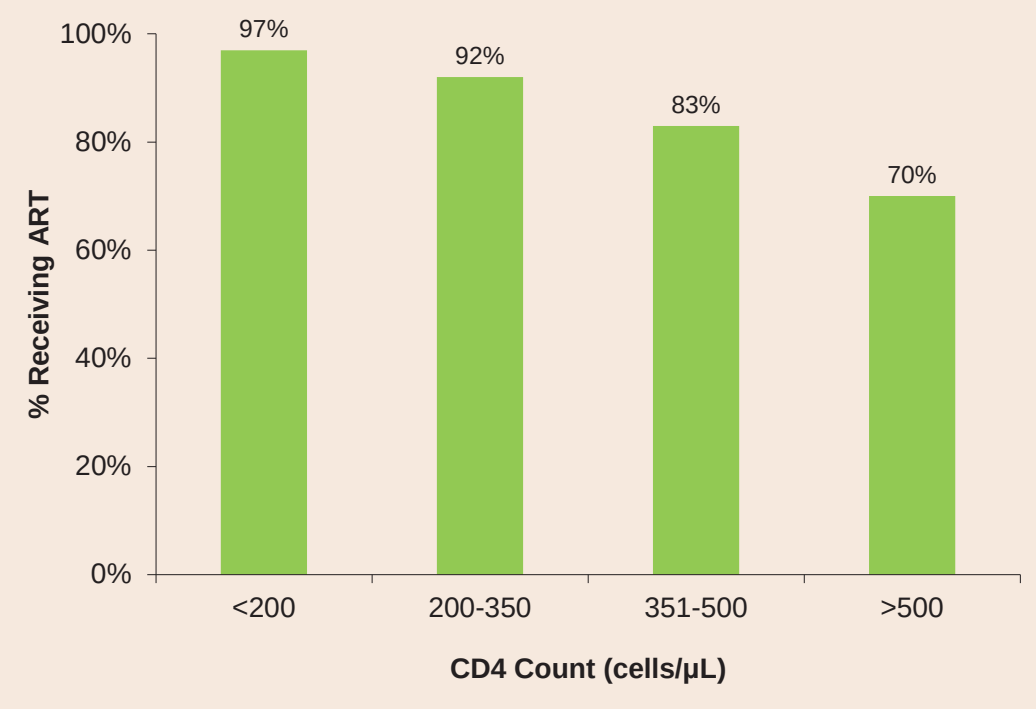
Table 3.5 Estimate of ART use among persons living with HIV by demographic, risk, and socioeconomic characteristics, December 2013, San Francisco

	Percent Receiving ART	
	Lower Level Estimate	Upper Level Estimate
Overall	**84%**	**91%**
Gender		
Male	84%	91%
Female	81%	86%
Transfemale[1]	84%	90%
Race/Ethnicity		
White	86%	92%
African American	81%	87%
Latino	82%	90%
Asian/Pacific Islander	79%	88%
Native American	71%	80%
Multiple race	79%	85%
Transmission Category		
MSM	85%	91%
PWID	81%	90%
MSM-PWID	85%	90%
Heterosexual	82%	84%
Housing Status, Most Recent		
Housed	86%	91%
Homeless	63%	76%
Insurance at HIV/AIDS Diagnosis		
Private	89%	94%
Public	84%	88%
None	80%	89%

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."

Figure 3.2 shows ART use by the lowest CD4 count ever reported ("nadir CD4") among persons living with HIV who have had follow-up information within the last two years and whose chart review was completed between January 2012 and March 2014 (N=7,258). The proportion receiving ART was greater among persons with lower CD4 count: 97% of cases with a CD4 count below 200 cells/μL, 92% with a CD4 count between 200-350 cells/μL, 83% with a CD4 count between 351-500 cells/μL, and 70% with a CD4 count above 500 cells/μL received ART.

Figure 3.2 Estimate of ART use[1] among living HIV cases with chart review by nadir CD4 level, December 2013, San Francisco



1 See Technical Notes "Estimate of ART Use."

Among persons diagnosed with HIV between 2007 and 2012, the median CD4 count at HIV diagnosis increased from 368 cells/μL in 2007 to 424 cells/μL in 2012 (Table 3.6). The median CD4 count at ART initiation increased from 352 cells/μL in 2007 to 437 cells/μL in 2012 among persons whose CD4 count at diagnosis was between 351-500 cells/μL, and increased from 531 cells/μL in 2007 to 654 cells/μL in 2012 among persons whose CD4 count at diagnosis was >500 cells/μL. Among persons whose CD4 count at diagnosis was <351 cells/μL, the median CD4 count at ART initiation did not change significantly.

Table 3.6 Trends in median CD4 count at time of diagnosis and at time of ART initiation among persons newly diagnosed with HIV, 2007-2012, San Francisco

Year of HIV diagnosis	Number of total cases[1]	Median CD4 count at HIV diagnosis[2] (cells/μL)	Median CD4 count at ART initiation by CD4 count at diagnosis (cells/μL) among persons initiating ART[3]			
			<200	200-350	351-500	>500
2007	543	368	90	271	352	531
2008	528	384	102	281	395	525
2009	479	407	72	277	409	542
2010	452	411	103	294	433	560
2011	423	437	82	274	430	652
2012	467	424	102	284	437	654

1 Includes persons diagnosed each year based on a confirmed HIV test and does not take into account patient self-report of HIV infection (N=2,892).
2 Median CD4 count at HIV diagnosis was calculated among persons whose CD4 count at HIV diagnosis was available (N=2,447).
3 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=1,616).

Trends in HIV viral suppression

Viral suppression is associated with improved health and prevention outcomes including greater survival and reduced onward HIV transmission. The treatment goal for HIV-infected persons is rapid achievement and sustained viral suppression (HIV concentrations less than or equal to 200 copies/mL). The time from HIV diagnosis to viral suppression has significantly decreased among persons diagnosed in more recent years. Among persons who were diagnosed with HIV in 2008, half achieved viral suppression within 13 months following diagnosis (Figure 3.3). The median number of months between diagnosis and viral suppression decreased steadily in each of the following years: 11 months among persons diagnosed in 2009, eight months for persons diagnosed in 2010, six months for persons diagnosed in 2011, and five months among persons diagnosed in 2012.

Figure 3.3 Kaplan-Meier estimates of time from HIV diagnosis to viral suppression among persons diagnosed with HIV by year of diagnosis, 2008-2012, San Francisco

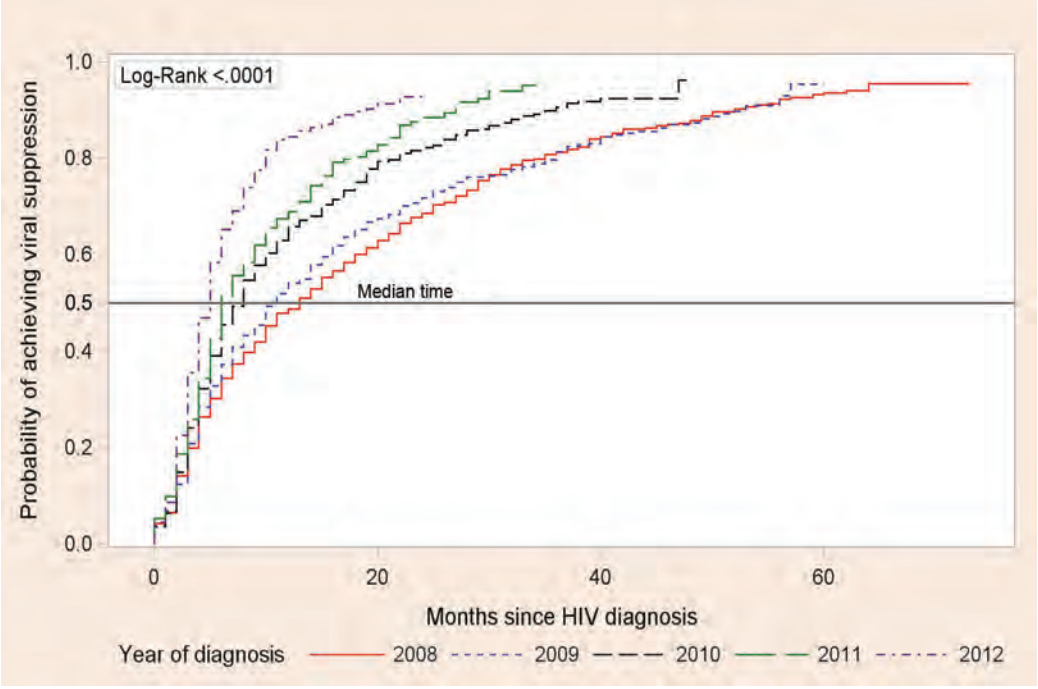
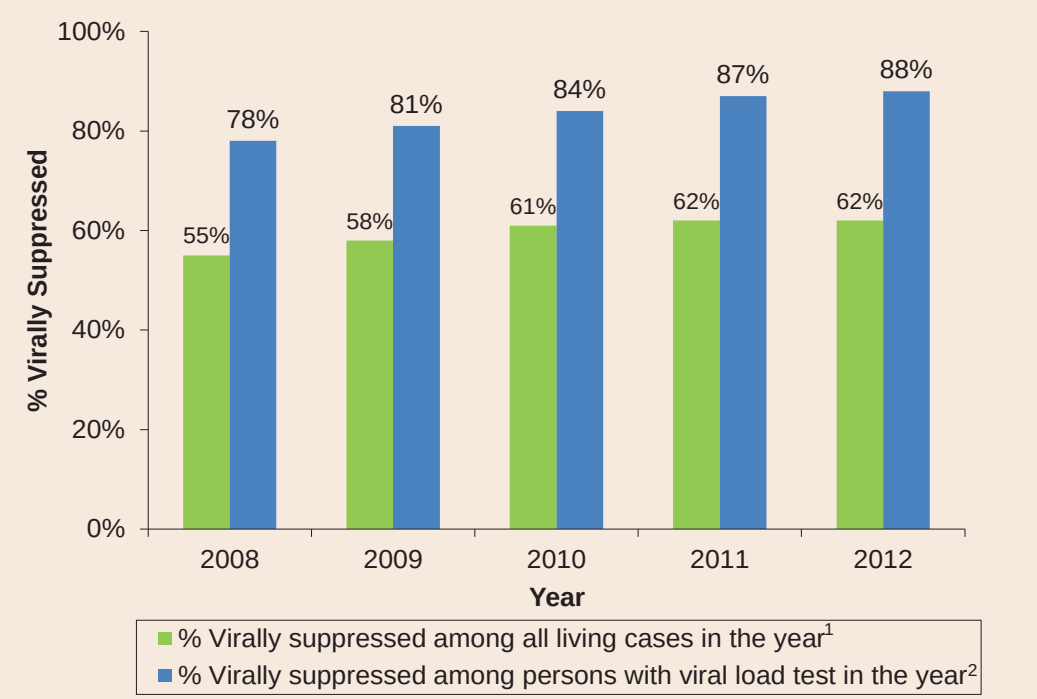


Figure 3.4 shows the proportion of persons living with HIV who achieved viral suppression by year using two population denominators. The data displayed in the green bars reflect the proportion of all persons living with HIV with at least 12 months follow up time after diagnosis (to allow time to initiate treatment and to reach viral suppression) who were suppressed in that year. This includes persons regardless of whether or not their last viral load test was done in that year. Individuals without a viral load test may have moved or transferred care outside of San Francisco or may no longer be receiving care. The data displayed in the blue bars is restricted to only persons who had a viral load test in that year. The trends remain the same in both populations. The proportion of persons living with HIV who were suppressed within each year increased, demonstrating continued improvement in community-wide clinical management of HIV and wide-spread use of antiretroviral therapy.

Figure 3.4 Proportion of persons living with HIV infection who achieved viral suppression by year, 2008-2012, San Francisco



1 Numerator includes persons who were alive at the end of each year and diagnosed as of the end of the previous year and whose most recent viral load in the year was ≤ 200 copies/mL. Denominator includes persons who were alive at the end of each year and diagnosed as of the end of the previous year.

2 Numerator includes persons who were alive at the end of each year and diagnosed as of the end of the previous year and whose most recent viral load in the year was ≤ 200 copies/mL. Denominator includes persons who were alive at the end of the year, diagnosed as of the end of the previous year, and had at least one viral load in that year.

In- and out- migration for HIV care

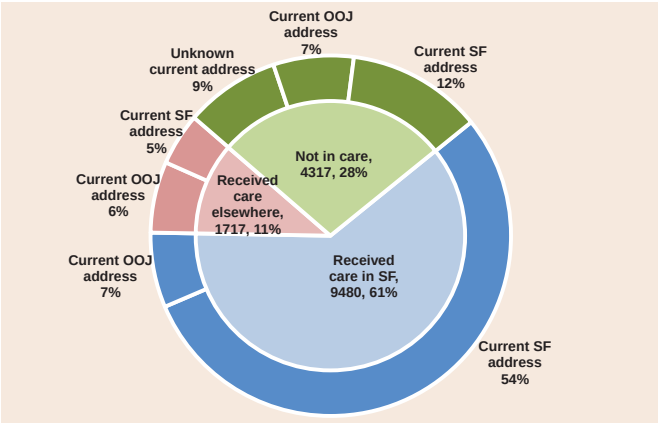
We used surveillance data to assess 1) out-migration: San Francisco cases (residents at time of HIV diagnosis) who moved out of San Francisco following their diagnosis, and 2) in-migration: non-San Francisco cases, or out-of-jurisdiction (OOJ) cases (see Technical Notes), who received care in San Francisco. Residence information is collected at time of diagnosis and periodically updated through medical chart reviews and from laboratory reports that include patient address.

To estimate out-migration, we examined the 15,514 San Francisco HIV cases who were diagnosed through December 31, 2012 and alive as of December 31, 2013. Those who had at least one CD4 or viral load test in 2013 were considered to be in care. Among San Francisco cases not in care, if the most recent address documented in the medical record obtained from 2011 to 2013 corresponds to a residence outside of San Francisco we classify that individual as having moved outside of the city. Overall, 72% had received care in 2013 (61% received care in San Francisco and 11% received care elsewhere) (Figure 3.5). Among the 4,317 (28%) cases not in care, 1,106 (7%) moved out of San Francisco, 1,874 (12%) still have a current San Francisco address and the remaining 1,337 (9%) do not have current address information (lost-to-follow-up). A substantial number of cases not in care have a known San Francisco address in recent years and should be prioritized for re-engagement in care.

To estimate in-migration, we examined HIV-related laboratory tests conducted in 2013 in San Francisco to calculate the proportion of OOJ cases among persons receiving care in San Francisco. The laboratory tests were matched with the case registry to determine the case residency at time of diagnosis. Among the 13,699 cases who received care in 2013, 3,869 (28%) were OOJ cases. That is, greater than one-fourth of persons receiving HIV care in San Francisco were non-residents. The full extent of care utilization and HIV case migration patterns cannot be fully understood until there is more complete and current laboratory and residence information collected and shared between jurisdictions.

Figure 3.5 Living San Francisco HIV cases[1] by care and current residence status, 2013

N=15,514



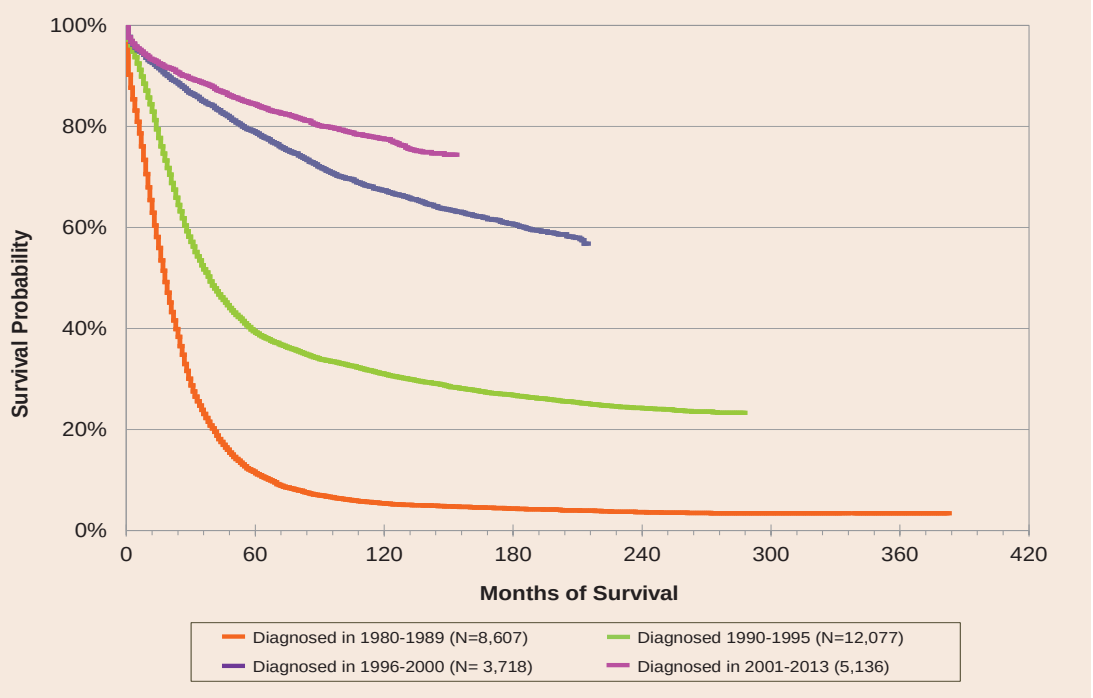
1 Include persons who are alive as of December 2013 and have been diagnosed as of December 2012.

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. Survival was poor for persons diagnosed in the first ten years of the epidemic (1980-1989) with the median survival time (survival probability of 50%) at 18 months after HIV infection stage 3 (AIDS). Between 1990 and 1995, survival improved; median survival time was 38 months.

Survival among HIV infection stage 3 (AIDS) cases diagnosed in the two time periods after 1995 continued to improve with the widespread availability of highly active ART. For AIDS diagnoses from 1996 to 2000, the survival probability at 60 months (five years) after AIDS diagnosis was 79%. HIV infection stage 3 (AIDS) diagnoses in the most recent time period, 2001 to 2013, had a survival probability of 84% at 60 months.

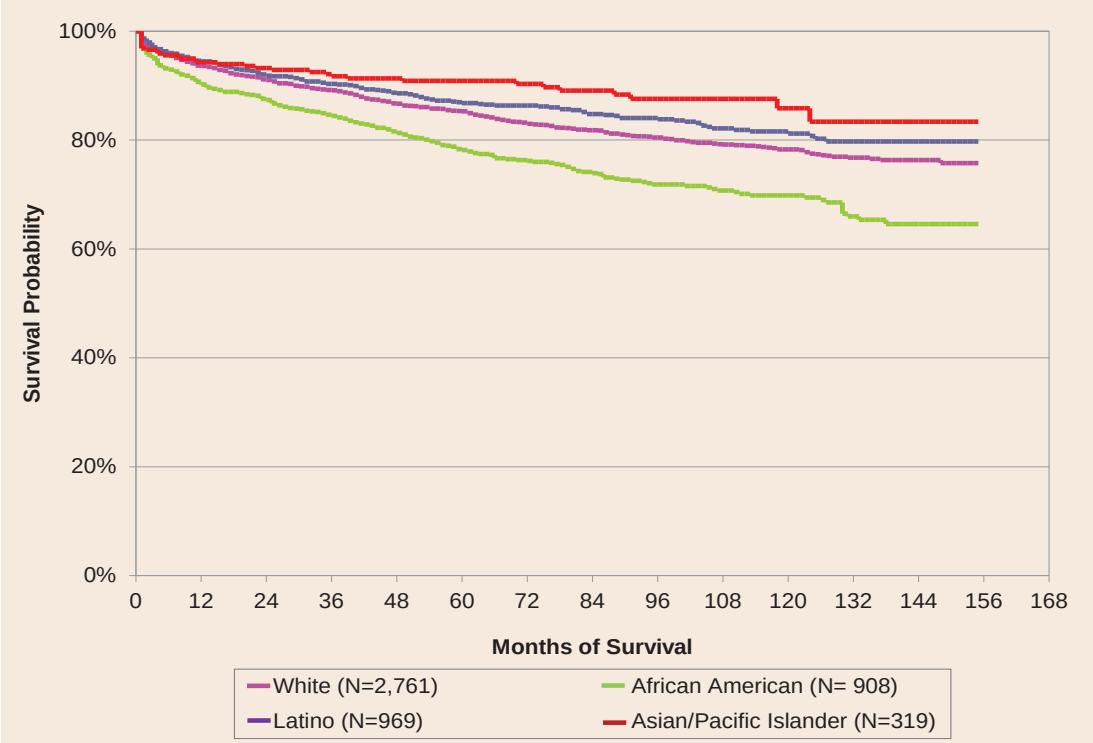
Figure 4.1 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) in four time periods, San Francisco



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

Survival after HIV infection stage 3 (AIDS) diagnosis is worse for African Americans than for other racial/ethnic groups (Figure 4.2). Among persons diagnosed between 2001 and 2013, the five-year survival probability of African Americans after AIDS was 78%, compared to 85% for whites, 87% for Latinos, and 91% for Asian/Pacific Islanders.

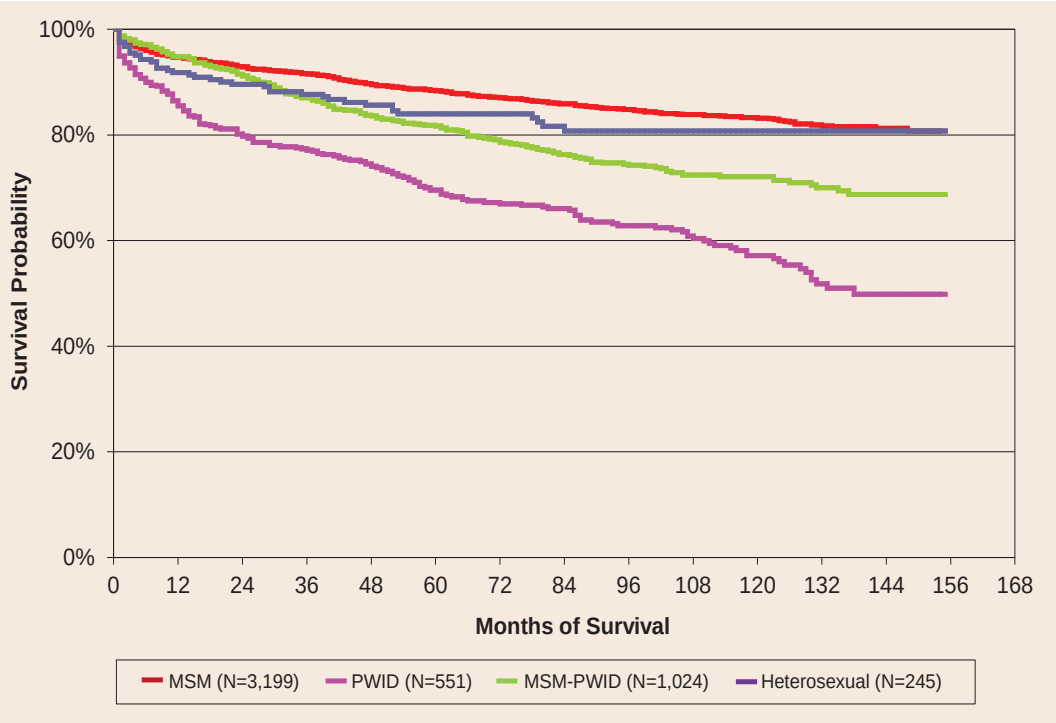
Figure 4.2 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2001 and 2013 by race/ethnicity, San Francisco



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

Survival after HIV infection stage 3 (AIDS) diagnosis has been better for MSM and heterosexuals compared to MSM-PWID and heterosexual PWID. For HIV infection stage 3 (AIDS) cases diagnosed from 2001 to 2013, the five-year survival probability was 88% for MSM, 84% for heterosexuals, 82% for MSM-PWID, and 70% 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.

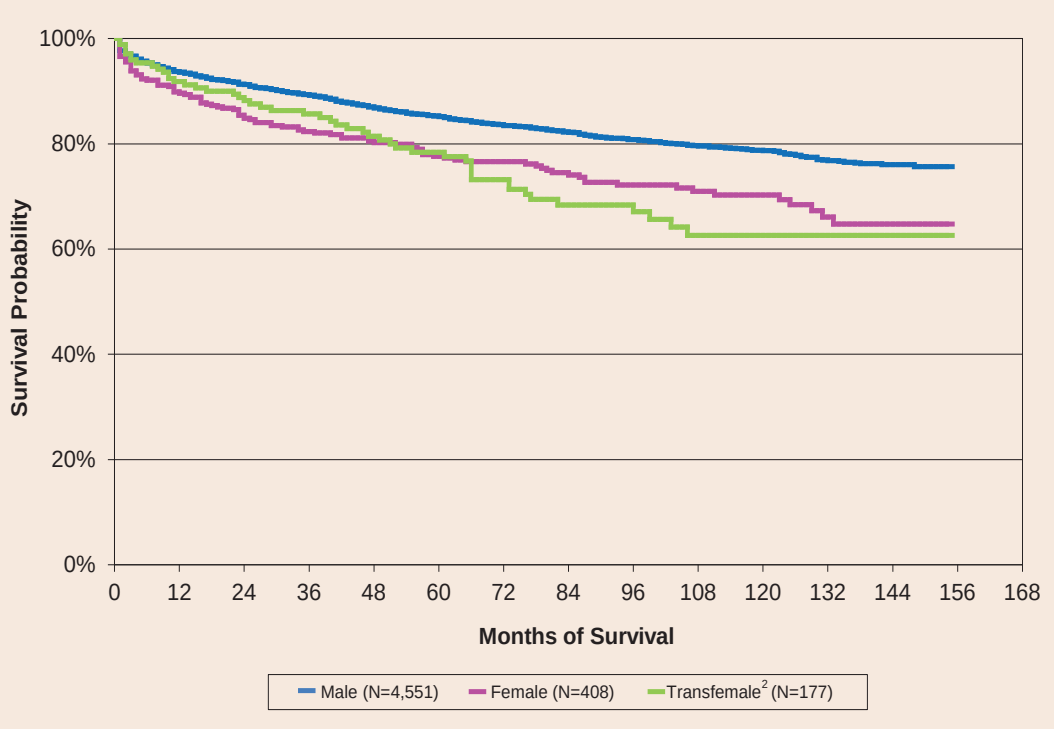
Figure 4.3 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2001 and 2013 by transmission category, San Francisco



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

Male HIV infection stage 3 (AIDS) cases have better survival than female and transfemale cases (Figure 4.4). The five-year survival probability among cases diagnosed from 2001 to 2013 was 85% for men, and 78% for both females and transfemales . The differences in survival by gender are consistent with lower use of highly active ART among female and transfemale HIV infection stage 3 (AIDS) cases.

Figure 4.4 Kaplan-Meier survival[1] curves for persons diagnosed with HIV infection stage 3 (AIDS) between 2001 and 2013 by gender, San Francisco

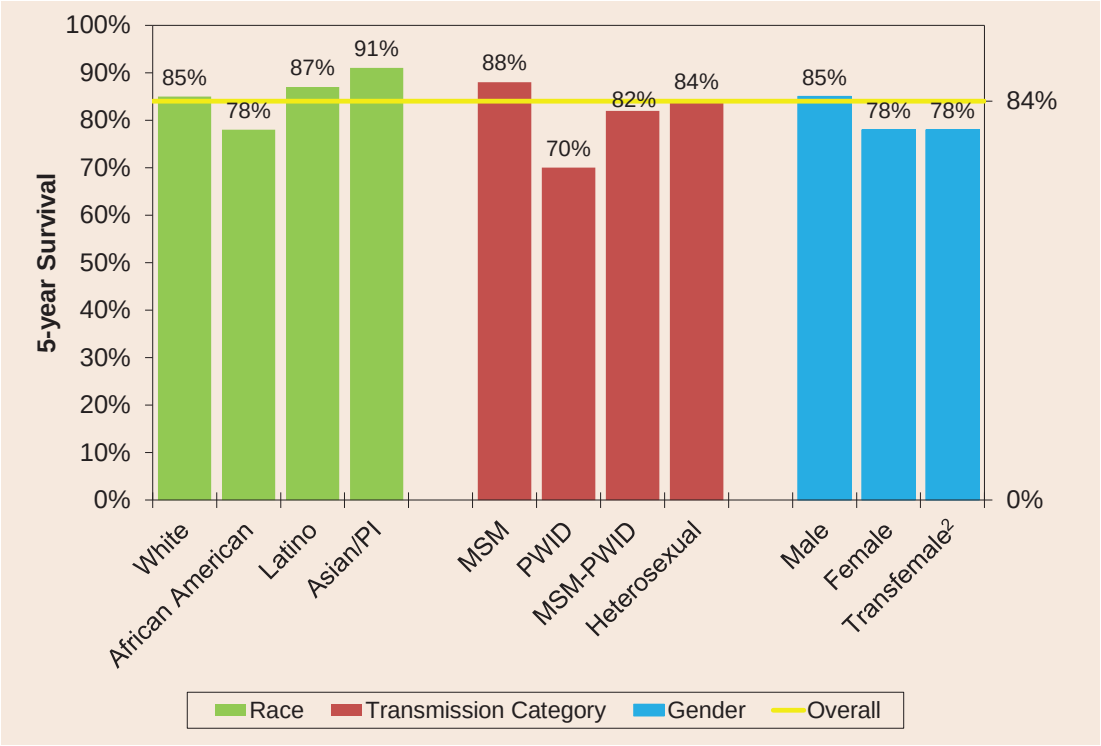


1 See Technical Notes "HIV infection stage 3 (AIDS) Survival."

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 five-year survival probability after HIV infection stage 3 (AIDS) for persons diagnosed between 2001 and 2013 was 84% (Figure 4.5). Differences in survival occurred across race/ethnicity, transmission category, and gender groups. African Americans, PWID, MSM-PWID, women, and transfemale persons had lower five-year survival probabilities compared to other groups.

Figure 4.5 Five-year survival probability[1] after HIV infection stage 3 (AIDS) for persons diagnosed between 2001 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, 2013, the cumulative number of deaths that have occurred among San Francisco HIV cases was 20,436 (Table 5.1). The proportion of deaths was stable by gender and racial/ethnic groups. While the proportion of deaths among heterosexual PWID increased between 2010 and 2013, the majority of deaths during these years continue to occur among persons aged 50 years and older (62% to 76%) and persons with HIV infection stage 3 (AIDS) (75% to 86%).

Table 5.1 Deaths in persons with HIV infection, by demographic and risk characteristics, 2010-2013, San Francisco

	Year of Death								Cumulative Totals as of 12/31/2013
	2010		2011		2012[1]		2013[1]		
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	
Gender									
Male	213	(87)	206	(89)	184	(88)	151	(83)	19,387
Female	23	(9)	18	(8)	17	(8)	24	(13)	796
Transfemale[2]	10	(4)	7	(3)	7	(3)	7	(4)	253
Race/Ethnicity									
White	148	(60)	127	(55)	129	(62)	101	(55)	14,962
African American	46	(19)	53	(23)	39	(19)	39	(21)	2,564
Latino	27	(11)	32	(14)	30	(14)	25	(14)	2,134
Other	25	(10)	19	(8)	10	(5)	17	(9)	776
Transmission Category									
MSM	130	(53)	128	(55)	118	(57)	100	(55)	15,002
PWID	35	(14)	37	(16)	38	(18)	42	(23)	1,654
MSM-PWID	64	(26)	59	(26)	41	(20)	36	(20)	3,247
Heterosexual	9	(4)	4	(2)	7	(3)	2	(1)	219
Other/Unidentified	8	(3)	3	(1)	4	(2)	2	(1)	314
Age at Death (years)									
0 - 29	5	(2)	3	(1)	2	(1)	3	(2)	1,099
30 - 39	10	(4)	25	(11)	12	(6)	11	(6)	7,311
40 - 49	62	(25)	61	(26)	49	(24)	29	(16)	7,514
50 - 59	103	(42)	83	(36)	74	(36)	69	(38)	3,179
60+	66	(27)	59	(26)	71	(34)	70	(38)	1,333
HIV Disease Stage									
Stage 1, 2, or unknown	42	(17)	33	(14)	38	(18)	45	(25)	444
Stage 3 (AIDS)	204	(83)	198	(86)	170	(82)	137	(75)	19,992

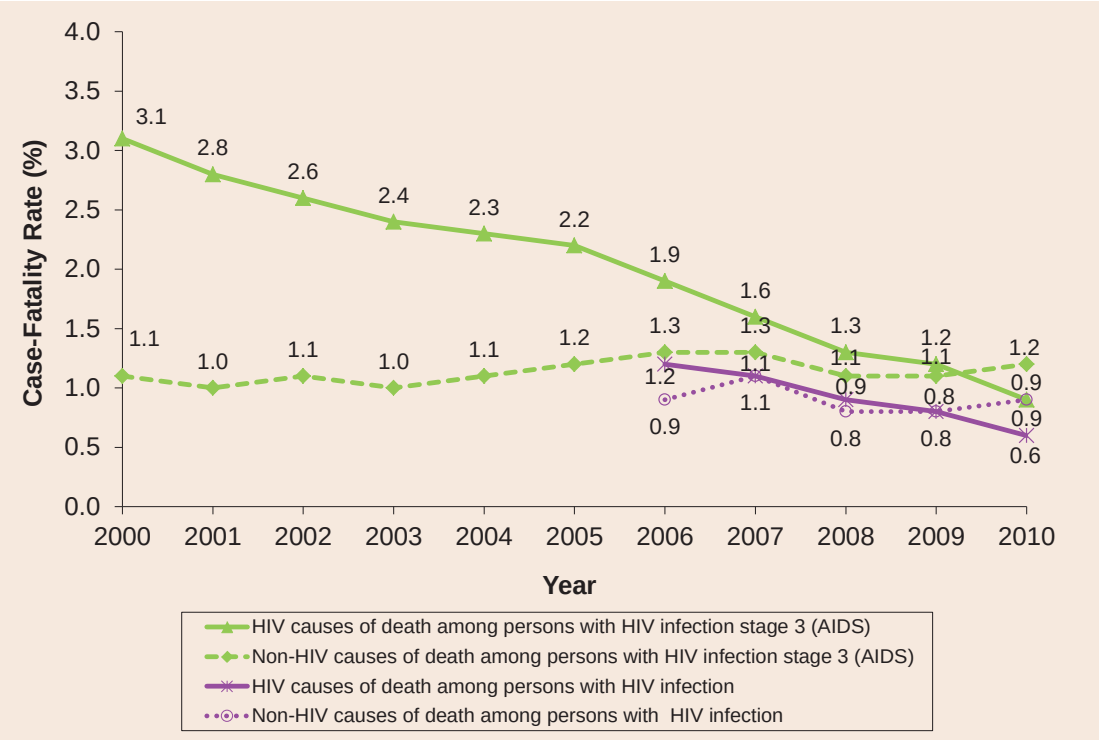
1 Data in recent years are incomplete due to reporting delays. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI) which is complete only through December 31, 2011.

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 trend in case-fatality rates in persons diagnosed with HIV infection was examined by the single, underlying cause of death for each person. Cause of death information for year 2011 deaths is not yet available. The case-fatality rate due to HIV-related causes among persons with HIV infection stage 3 (AIDS) declined from 3.1 per 100 persons in 2000 to 0.9 per 100 persons for 2010 (Figure 5.1). Non-HIV-related causes of death among persons with HIV infection stage 3 (AIDS) fluctuated between 1.0 and 1.3 deaths per 100 persons from 2000 to 2010.

When deaths in all stages of HIV infection were evaluated, case-fatality rates for HIV-related causes declined steadily since 2006; the rate was 0.6 per 100 persons in 2010. Case-fatality rates for non-HIV causes were fairly stable.

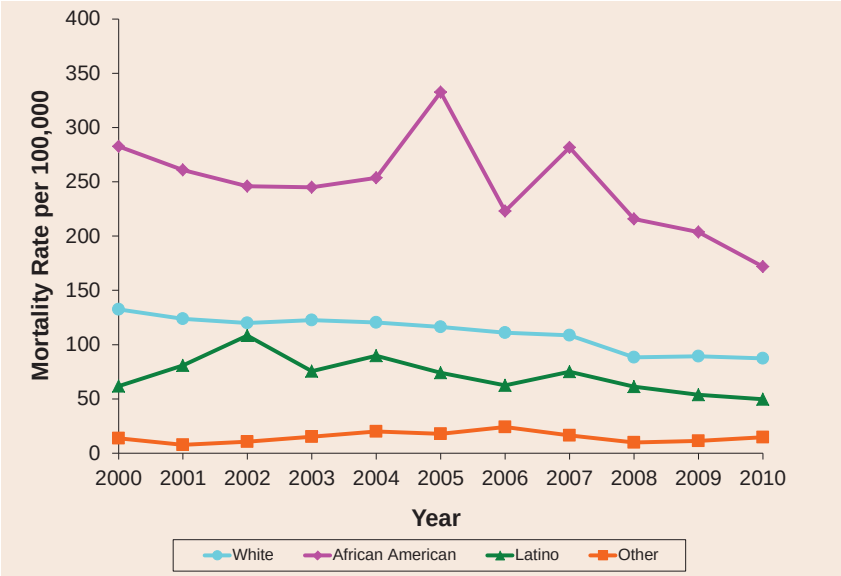
Figure 5.1 Case-fatality rates[1] due to HIV-related and non-HIV-related causes among persons with HIV infection, 2000-2010, San Francisco



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 HIV mortality rates in San Francisco show African Americans continue to experience much higher HIV mortality than all other racial/ethnic groups despite overall decreases in mortality from 2000 to 2010. The male African American mortality rate peaked in 2005 with 333 deaths per 100,000 before it fell by almost half to 172 deaths per 100,000 five years later in 2010 (Figure 5.2). The HIV mortality rate among African American men in 2010 was still 1.9 times higher than white men and 3.5 times higher than Latino men.

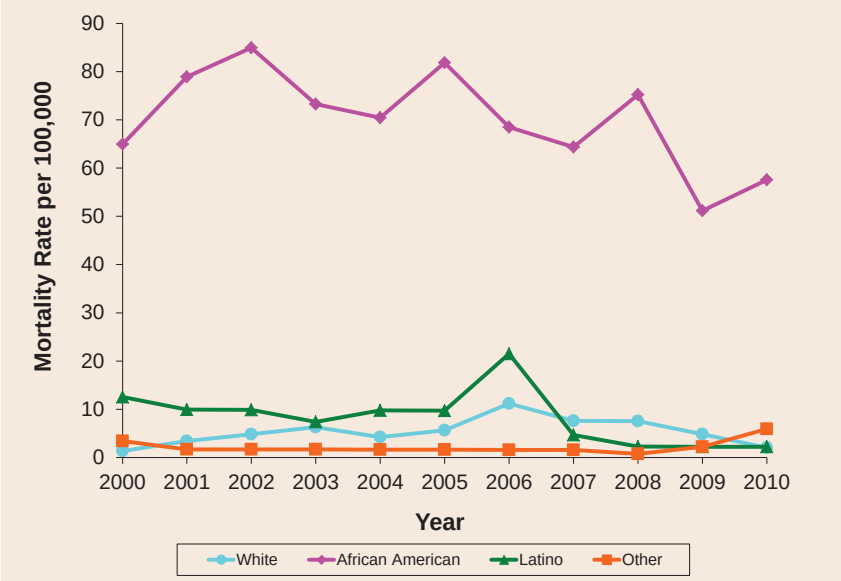
Figure 5.2 Mortality rates[1] among male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2000-2010, San Francisco



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."

Female HIV mortality rates are significantly lower in comparison to their male counterparts. However, a large disparity remains between the mortality rates of African American women and all other racial/ethnic groups; in 2010, African American women had the highest mortality rate with 58 deaths per 100,000, at least ten times higher than any other group.

Figure 5.3 Mortality rates[1] among female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2000-2010, 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."

Underlying causes of death among persons with HIV continue to shift towards non-HIV related causes. The proportion of deaths in which HIV was listed as the underlying cause of death decreased from 70.5% of deaths among HIV cases occurring in 1999-2002 to 48.2% in 2007-2010 (Table 5.2). Other frequently occurring underlying causes of death in 2007-2010 include non-AIDS cancers (11.2%), drug overdose (9.1%), heart disease (8.0%), and suicide (4.3%). The proportions of these non-HIV-related causes increased over the three time periods.

Table 5.2 Underlying causes of death among persons with HIV infection[1], 1999-2010, San Francisco

	Year of Death					
	1999-2002 N=1,357		2003-2006 N=1,300		2007-2010 N=1,060	
Underlying Cause of Death[2]	Number	(%)	Number	(%)	Number	(%)
HIV	957	(70.5)	821	(63.2)	511	(48.2)
Non-AIDS cancer	89	(6.6)	126	(9.7)	119	(11.2)
Lung cancer	25	(1.8)	41	(3.2)	40	(3.8)
Liver cancer	20	(1.5)	24	(1.8)	19	(1.8)
Anal cancer	7	(0.5)	5	(0.4)	8	(0.8)
Colon cancer	2	(0.1)	6	(0.5)	7	(0.7)
Hodgkins lymphoma	1	(0.1)	0	(0.0)	1	(0.1)
Drug overdose	33	(2.4)	46	(3.5)	96	(9.1)
Heart disease	64	(4.7)	87	(6.7)	85	(8.0)
Coronary heart disease	43	(3.2)	51	(3.9)	40	(3.8)
Cardiomyopathy	8	(0.6)	10	(0.8)	4	(0.4)
Suicide	23	(1.7)	34	(2.6)	46	(4.3)
Liver disease	34	(2.5)	27	(2.1)	24	(2.3)
Liver cirrhosis	15	(1.1)	17	(1.3)	13	(1.2)
Alcoholic liver disease	16	(1.2)	9	(0.7)	9	(0.8)
Chronic obstructive lung disease	16	(1.2)	23	(1.8)	22	(2.1)
Mental disorders due to substance use	24	(1.8)	32	(2.5)	20	(1.9)
Cerebrovascular disease	13	(1.0)	10	(0.8)	11	(1.0)
Viral hepatitis	14	(1.0)	9	(0.7)	9	(0.8)
Renal disease	3	(0.2)	4	(0.3)	8	(0.8)
Diseases of arteries	4	(0.3)	1	(0.1)	5	(0.5)
Septicemia	2	(0.1)	4	(0.3)	3	(0.3)
Diabetes	3	(0.2)	7	(0.5)	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."

Table 5.3 shows both underlying and contributory causes of death among persons diagnosed with HIV infection. Similar to the trend in underlying causes of death, the proportion of deaths with HIV-related causes fell from 85% in 1999-2002 to 63% in 2007-2010. Causes of death that had persistent proportional increases across the three time periods include heart disease, non-AIDS cancers, drug overdose, suicide, and chronic obstructive lung disease. Deaths due to drug overdose showed the largest percentage increase between recent time periods 2003-2006 and 2007-2010.

Table 5.3 Multiple causes of death among persons with HIV infection[1], 1999-2010, San Francisco

	Year of Death					
	1999-2002 N=1,357		2003-2006 N=1,300		2007-2010 N=1,060	
Multiple Causes of Death[2]	Number	(%)	Number	(%)	Number	(%)
HIV	1,157	(85.3)	1,040	(80.0)	662	(62.5)
Heart disease	265	(19.5)	267	(20.5)	235	(22.2)
Coronary heart disease	69	(5.1)	84	(6.5)	67	(6.3)
Cardiomyopathy	31	(2.3)	26	(2.0)	17	(1.6)
Non-AIDS cancer	127	(9.4)	179	(13.8)	157	(14.8)
Lung cancer	27	(2.0)	45	(3.5)	44	(4.2)
Liver cancer	24	(1.8)	27	(2.1)	24	(2.3)
Anal cancer	9	(0.7)	9	(0.7)	10	(0.9)
Colon cancer	4	(0.3)	6	(0.5)	8	(0.8)
Hodgkins lymphoma	6	(0.4)	4	(0.3)	8	(0.8)
Pneumonia	211	(15.5)	167	(12.8)	119	(11.2)
Liver disease	224	(16.5)	178	(13.7)	116	(10.9)
Liver cirrhosis	86	(6.3)	84	(6.5)	54	(5.1)
Alcoholic liver disease	19	(1.4)	12	(0.9)	10	(0.9)
Drug overdose	45	(3.3)	53	(4.1)	104	(9.8)
Viral hepatitis	180	(13.3)	180	(13.8)	99	(9.3)
Mental disorders due to substance use	83	(6.1)	105	(8.1)	87	(8.2)
Renal disease	115	(8.5)	137	(10.5)	85	(8.0)
Septicemia	133	(9.8)	149	(11.5)	79	(7.5)
Chronic obstructive lung disease	46	(3.4)	67	(5.2)	65	(6.1)
Suicide	23	(1.7)	34	(2.6)	46	(4.3)
Diabetes	30	(2.2)	36	(2.8)	36	(3.4)
Cerebrovascular disease	43	(3.2)	39	(3.0)	30	(2.8)
Diseases of arteries	12	(0.9)	4	(0.3)	12	(1.1)
Aspergillosis	17	(1.3)	7	(0.5)	4	(0.4)

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."

6 Health Insurance Status at Time of HIV Diagnosis

Insurance status at time of initial HIV diagnosis differs by racial/ethnic group. Over 40% of whites had private insurance in all years examined. In 2011, the proportion of whites without insurance increased while the proportion of those with public insurance decreased. In contrast, over 40% of African Americans were publicly insured throughout 2009-2013. Neither type of insurance was predominant for Latinos or other racial/ethnic groups, although among Latinos there was an increasing trend in the proportion with private insurance between 2009 and 2013 (20% to 39%). One pattern consistent across whites, African Americans and Latinos is the increasing proportion of cases since 2010 with no insurance coverage. Future reports may see changes due to implementation of the Affordable Care Act.

Figure 6.1 Trends in health insurance status at time of HIV diagnosis by race/ethnicity, 2009-2013, San Francisco

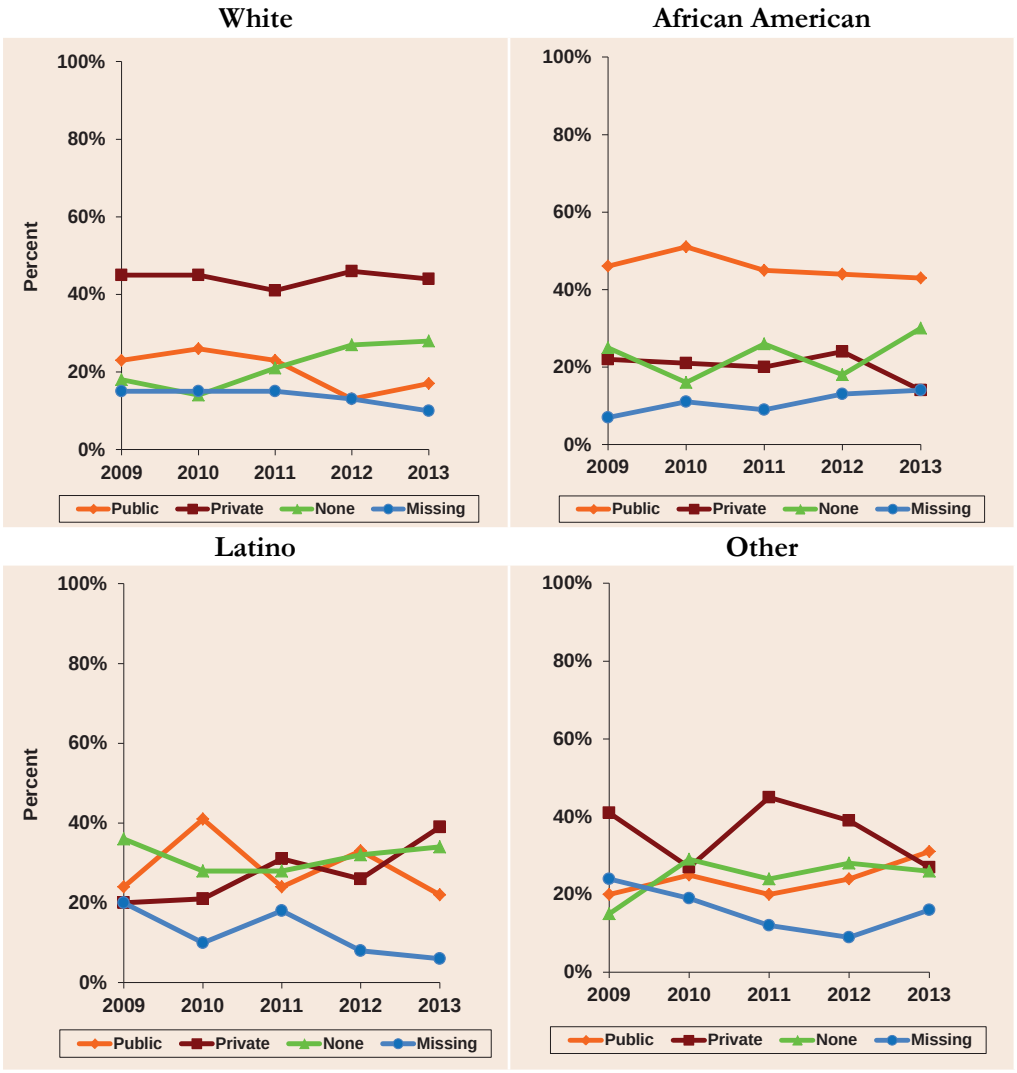
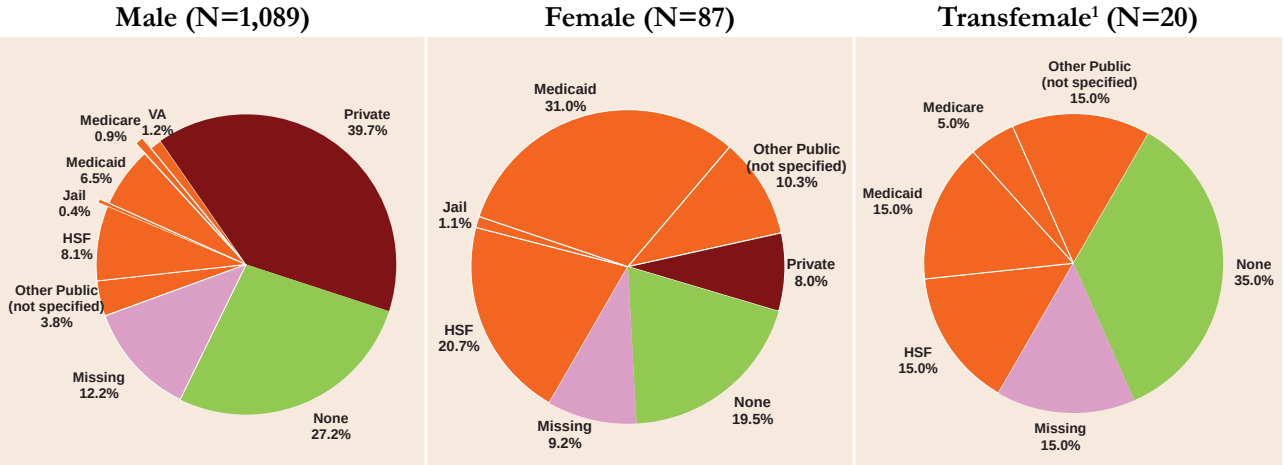


Figure 6.2 shows the distribution of insurance types by gender for HIV cases diagnosed between 2011 and 2013. Compared to males, female and transfemale cases diagnosed during this time period had higher proportions with public insurance. At diagnosis, females had the highest proportion using Medicaid, a state-sponsored insurance for persons meeting financial criteria, followed by transfemales. In addition, Healthy San Francisco (HSF), the county-sponsored health care program for residents that became available in 2008, was used by close to 21% of females at time of diagnosis. More than one-third of transfemales had no health insurance at time of diagnosis.

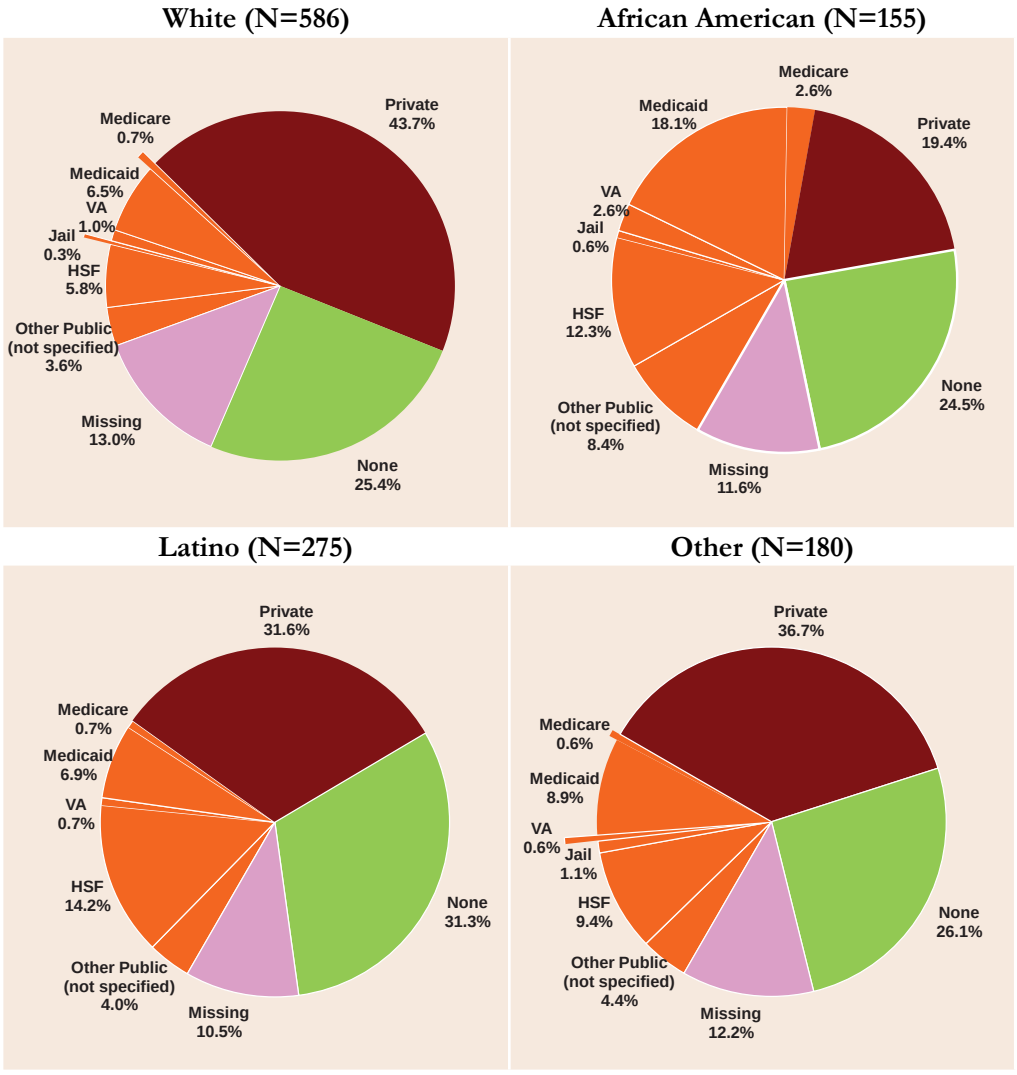
Figure 6.2 HIV cases by gender and health insurance status at time of HIV diagnosis, 2011-2013, San Francisco



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 race/ethnicity groups for HIV cases diagnosed between 2010 and 2013. Whites had 62% of cases insured, African Americans, 64% insured, and other race/ethnicity groups had 62% of cases insured at diagnosis, with African American cases utilizing publicly-funded insurance types more. Latino cases had the highest proportion with no health care coverage at time of diagnosis (31%). Latinos and African Americans had highest proportions using HSF for health care coverage at time of diagnosis (14% and 12%, respectively).

Figure 6.3 HIV cases by race/ethnicity and health insurance status at time of HIV diagnosis, 2011-2013, San Francisco

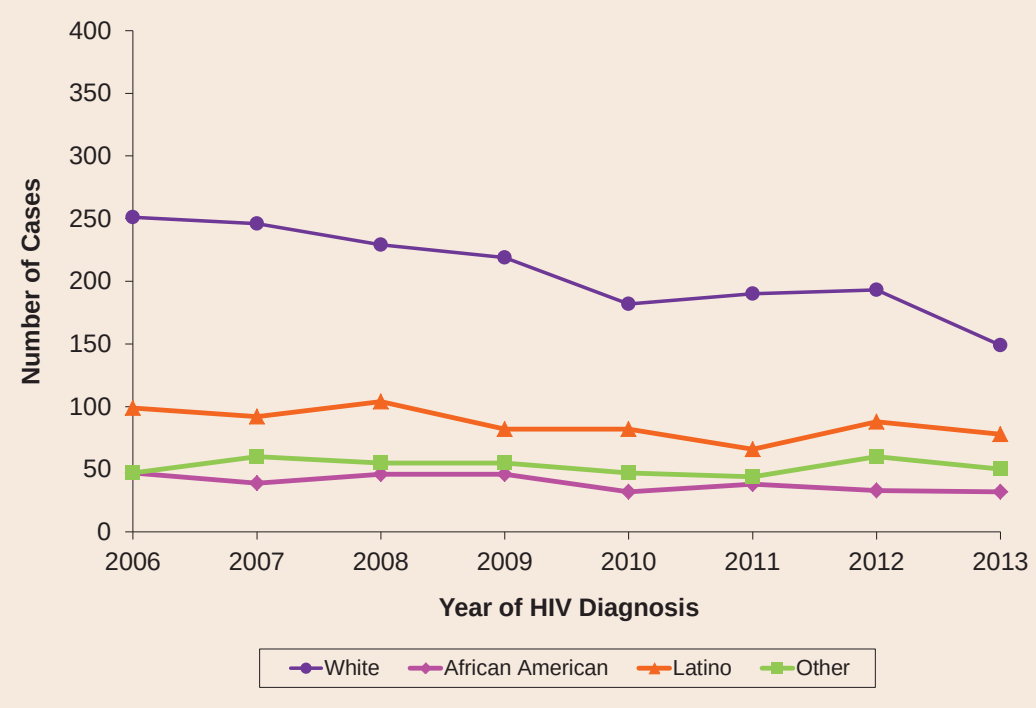


7 HIV among Men who Have Sex with Men

HIV surveillance data

Whites account for the largest number of HIV cases by race/ethnicity among MSM in San Francisco (Figure 7.1). Newly diagnosed white MSM cases declined from 2006 to 2010, leveled off, and continued to decline in 2013. Diagnoses among Latinos, African Americans and other racial/ethnic groups were fairly stable between 2006 and 2013.

Figure 7.1 Cases diagnosed with HIV infection[1] among MSM by race/ethnicity, 2006-2012, San Francisco



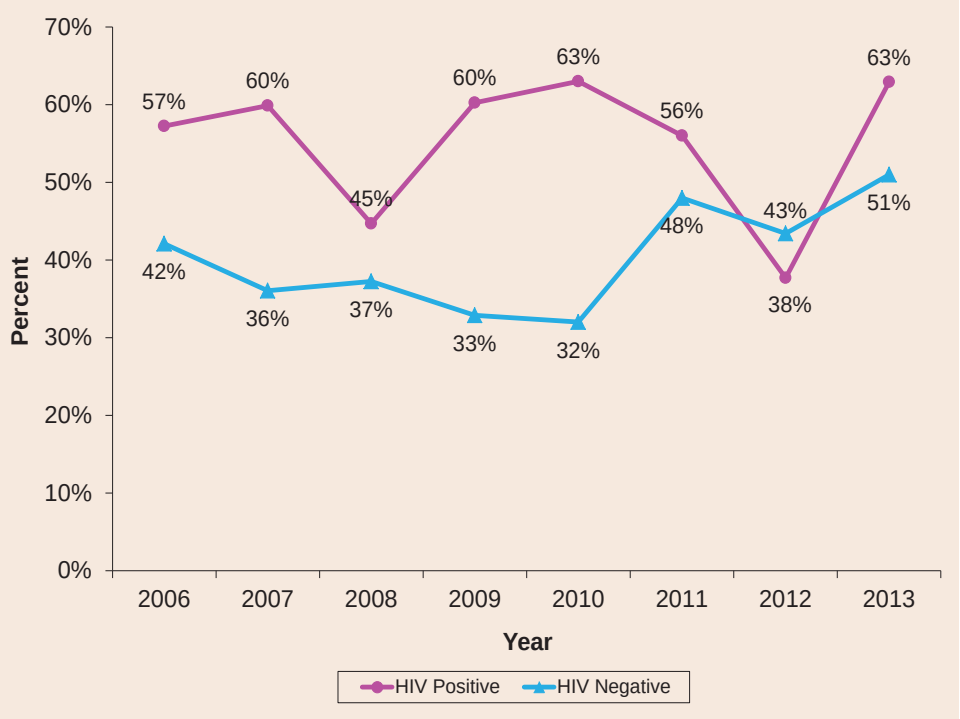
1 Includes MSM and MSM-PWID with HIV infection by year of their initial HIV diagnosis.

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 and shared with the SFDPH 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 unprotected anal intercourse (UAI) 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 reported UAI (either insertive or receptive) by self-reported HIV serostatus. Between 2006 and 2013, the percent of HIV-negative MSM who reported UAI steadily declined from 42% in 2006 to 32% in 2010, but rose to a high of 51% in 2013. Among HIV-positive men, the percent UAI has remained between 57% and 63% except for two lows, 45% in 2008 and 38% in 2012. 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 unprotected anal intercourse in the last six months by self-reported HIV status, the STOP AIDS Project, 2006-2013, San Francisco



Sexually transmitted diseases among MSM

The impact of sexually transmitted diseases (STD) on HIV transmission is complex. On the one hand, increases in STD incidence may be markers for increased potential to transmit HIV through increased unprotected sex and multiple sex partners. On the other hand, the potential increase in HIV transmission may be mitigated by higher ART coverage and serosorting, situations where increases in STDs may not translate to increases in HIV.

Figure 7.3 shows trends in male rectal gonorrhea and male gonococcal proctitis among MSM in San Francisco from 2003 through 2013 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 unprotected receptive anal sex.

The last five years has seen an increase in reported cases of male rectal gonorrhea. The 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, under reporting, and a large proportion of cases who do not manifest symptoms.

Figure 7.3 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2004-2013, San Francisco

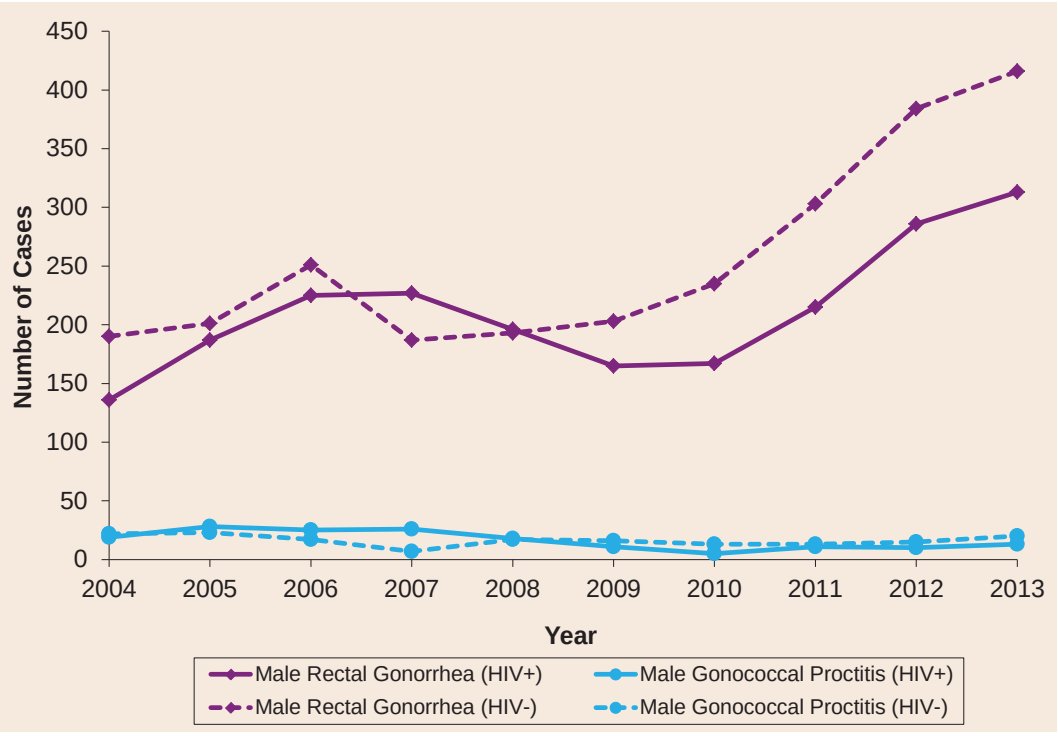
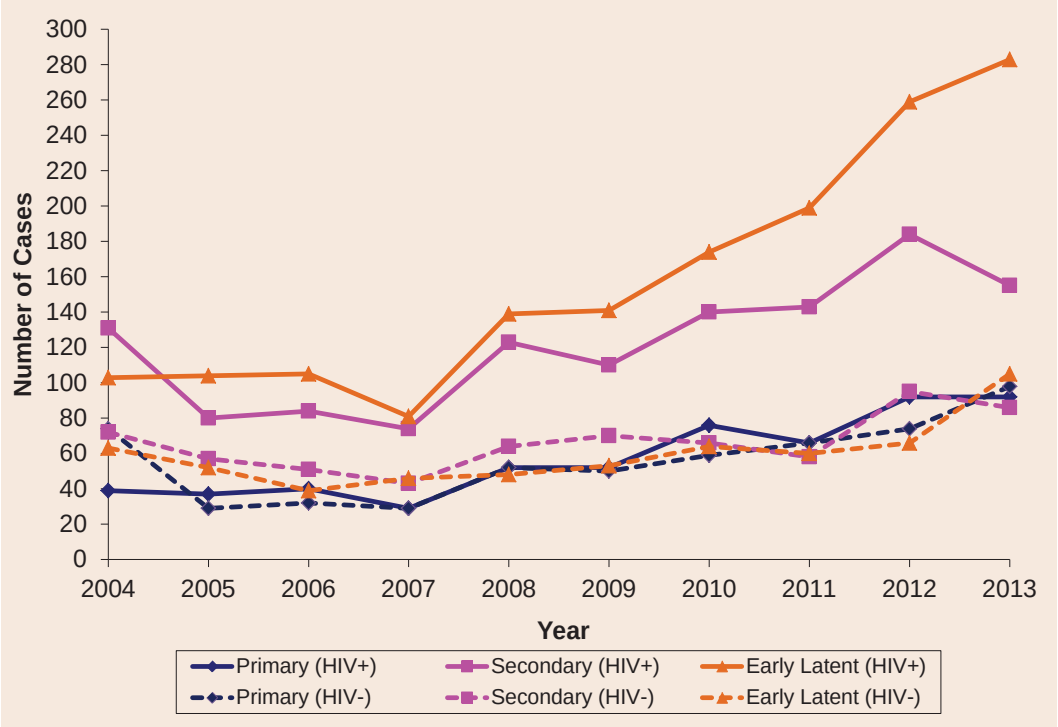


Figure 7.4 shows trends in early syphilis cases (primary, secondary, and early latent) among MSM in San Francisco from 2004 through 2013 by HIV serostatus. Data originate from case reporting by laboratories and health providers throughout the city and from the municipal STD clinic, the site where most of the patients were diagnosed. Like gonorrhea, syphilis is a biological marker for unprotected sex. The increase from 2007 to 2013 in early syphilis is dramatic, especially among HIV-positive MSM who account for a greater proportion of early syphilis cases than HIV-negative MSM.

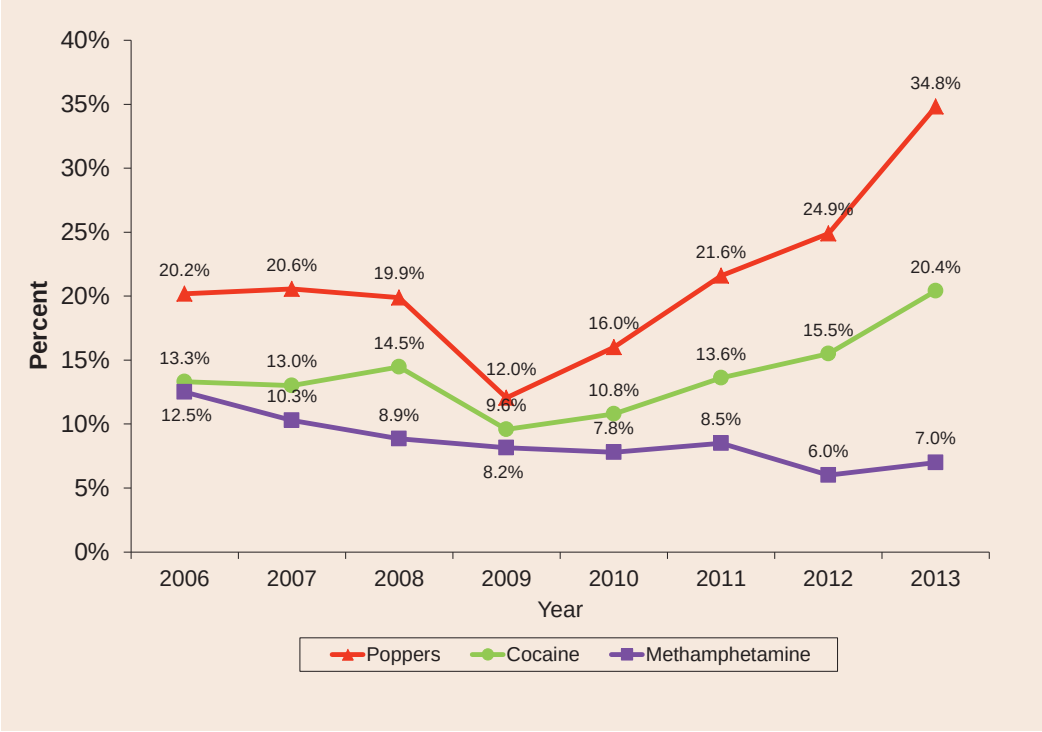
Figure 7.4 Early syphilis among MSM by HIV serostatus, 2004-2013, San Francisco



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 2006 to 2013. The most recent years show an increase in poppers use rising to 34.8% and cocaine use to 20.4% while methamphetamine use remains steady at 7.0% in 2013.

Figure 7.5 Substance use among MSM, the STOP AIDS Project, 2006-2013, San Francisco

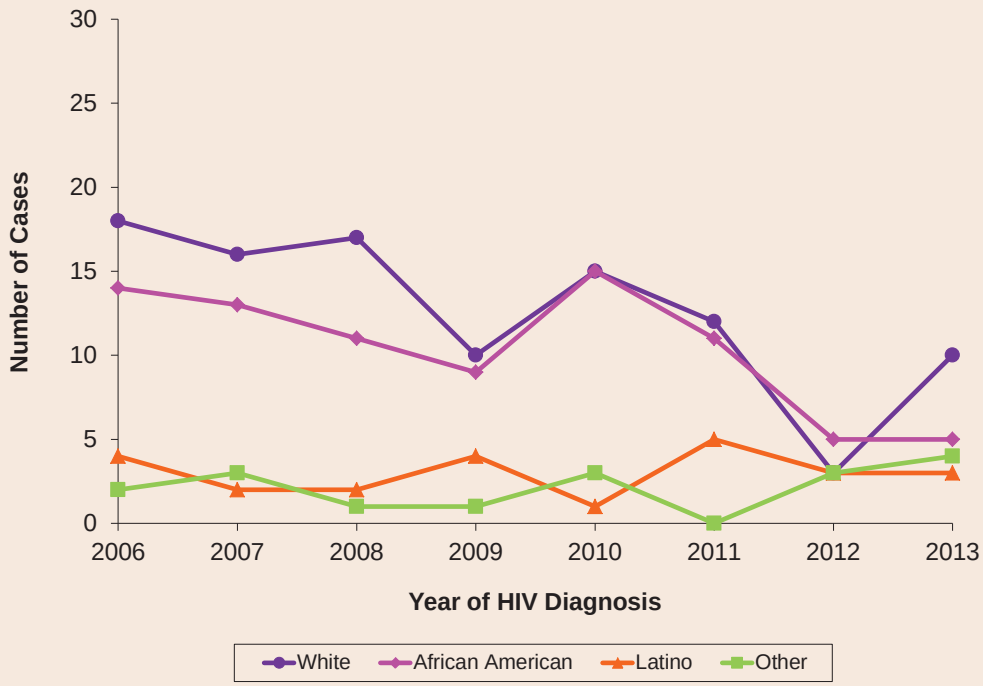


8 HIV among People who Inject Drugs

HIV surveillance data

In recent years, the number of HIV diagnoses among PWID who are non-MSM has accounted for less than 10% of HIV cases diagnosed annually. Within this transmission category, whites accounted for the largest number of cases diagnosed with HIV infection each year between 2006 and 2008 (Figure 8.1). From 2009 to 2012, the numbers of HIV cases among white and African American PWID have been similar. In 2013, the number of white PWID increased but remains low.

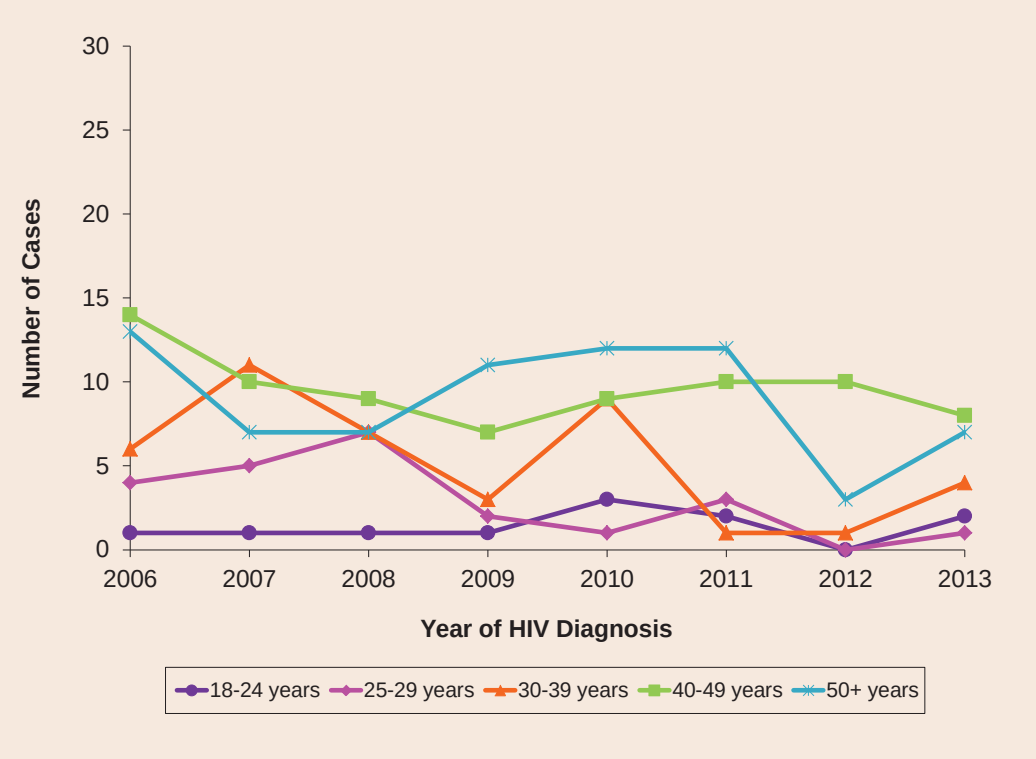
Figure 8.1 Cases diagnosed with HIV infection[1] among non-MSM PWID by race/ethnicity, 2006-2013, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis.

By age, the majority of non-MSM PWID diagnosed with HIV were persons aged 40 years and older at time of diagnosis. Between 2006 and 2013, persons aged 40 years and older accounted for two-thirds of PWID diagnosed. There was a decreasing trend in persons aged 30-39 years since 2007, while persons aged 25-29 years showed a decreasing trend since 2008. There were very few PWID aged 18-24 years and no PWID under age 18 years diagnosed in this time period.

Figure 8.2 Cases diagnosed with HIV infection[1] among non-MSM PWID by age group at HIV diagnosis, 2006-2013, San Francisco



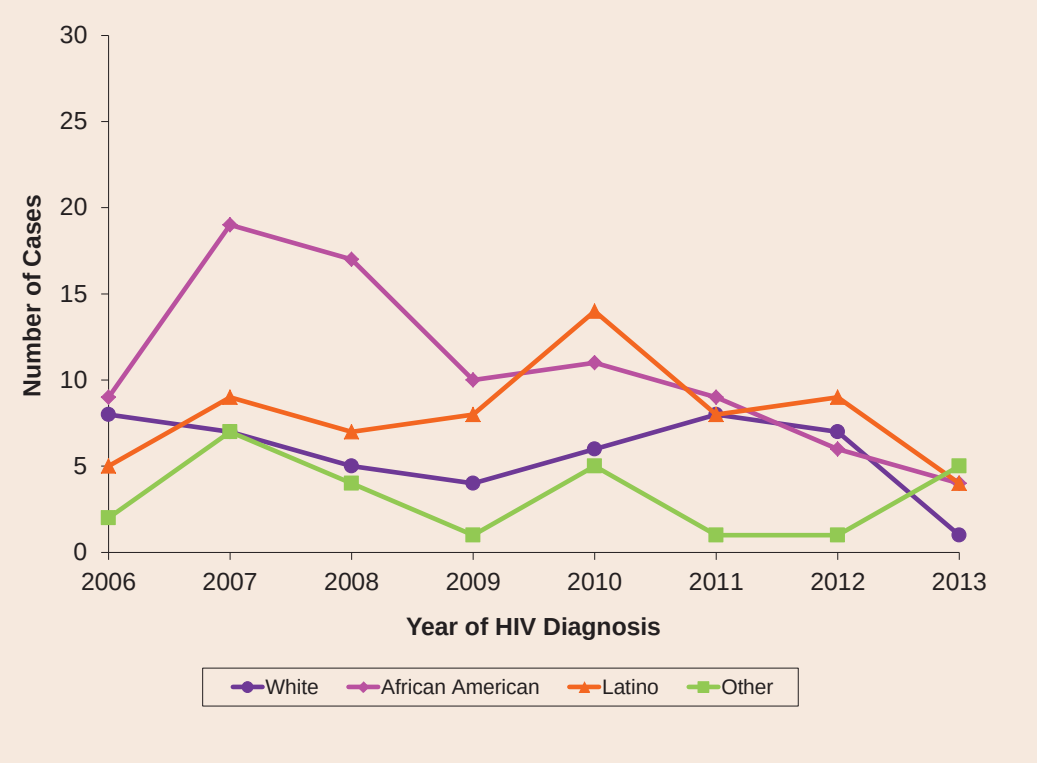
1 Includes persons with HIV infection by year of their initial HIV diagnosis.

9 HIV among Heterosexuals

HIV surveillance data

Trends in heterosexual HIV cases by race/ethnicity are difficult to characterize due to the small number of cases infected through heterosexual contact (Figure 9.1). African Americans accounted for the greatest number and proportion of heterosexual HIV cases from 2006 to 2013, although in the recent three years, whites, African Americans, and Latinos showed similar numbers of diagnoses each year.

Figure 9.1 Cases diagnosed with HIV infection[1] among heterosexuals by race/ethnicity, 2006-2013, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis.

Sexually transmitted diseases among heterosexuals

Figure 9.2 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 2004 through 2013. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Compared to MSM, syphilis among heterosexual men remains relatively low in recent years with some fluctuation.

Figure 9.2 Syphilis among heterosexual men, 2004-2013, San Francisco

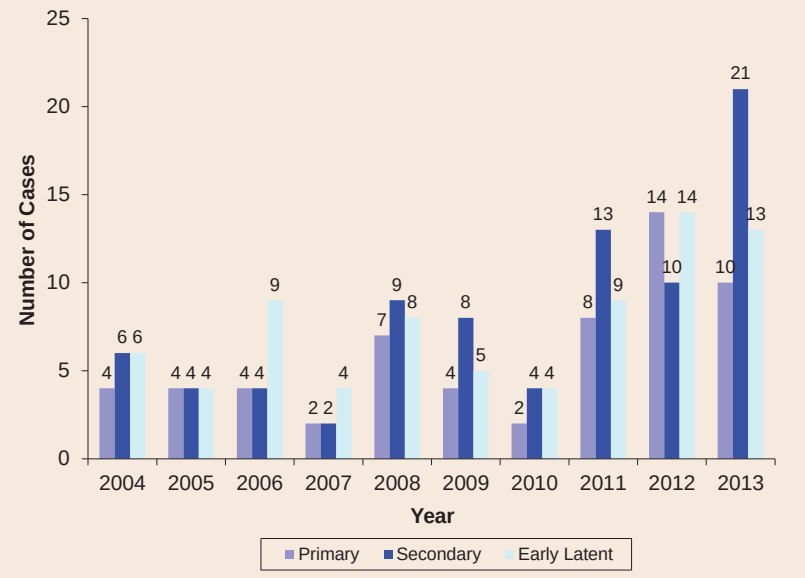
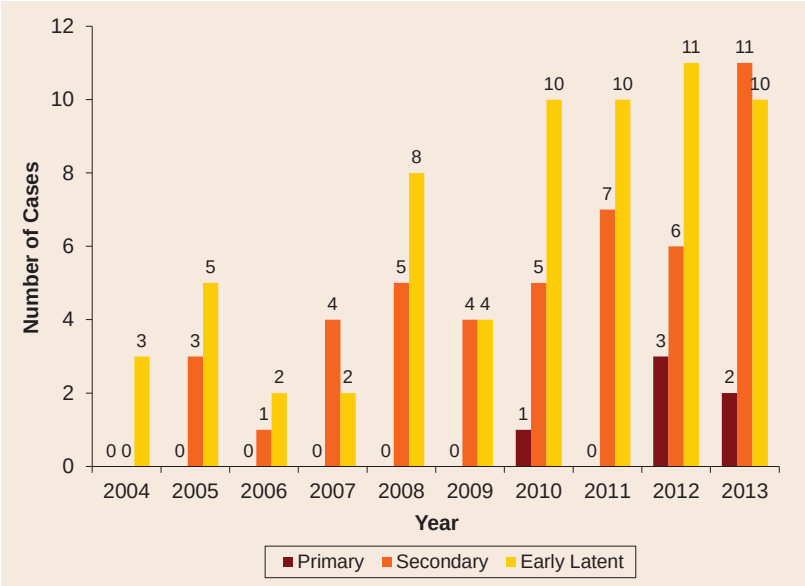


Figure 9.3 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 2004 through 2013. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable, with a potential increase in recent years.

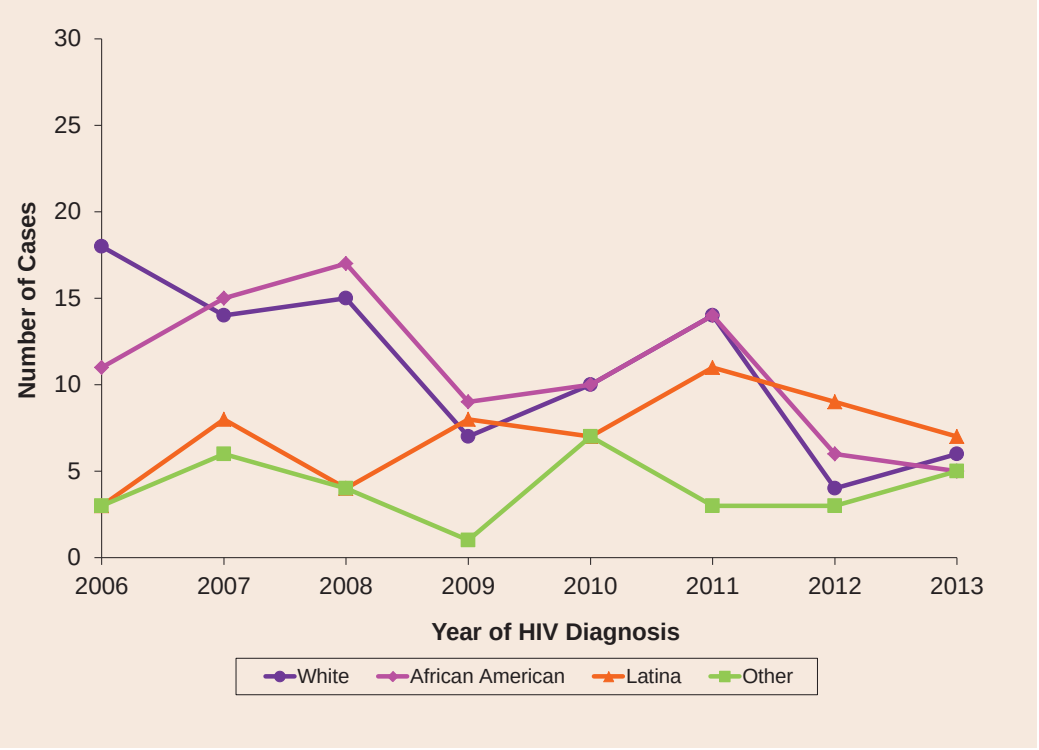
Figure 9.3 Syphilis among women, 2004-2013, San Francisco



10 HIV among Women

Among women diagnosed with HIV infection, white and African American women formerly comprised the two largest racial/ethnic groups. However, beginning in 2009, white, African American and Latina women showed similar annual numbers of cases. From 2006 to 2013, whites accounted for 33%, African Americans accounted for 33% and Latinas accounted for 22% of female cases diagnosed with HIV infection.

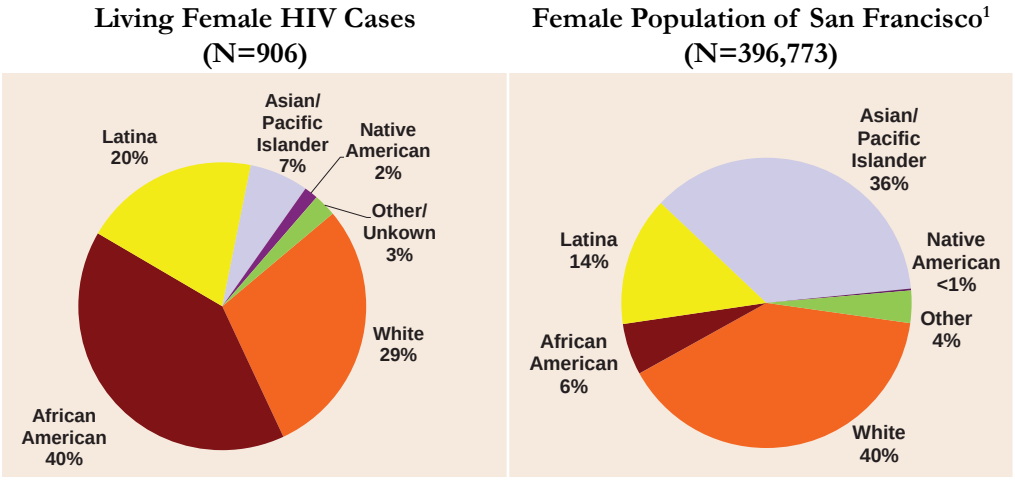
Figure 10.1 Female cases diagnosed with HIV infection[1] by race/ethnicity, 2006-2013, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis.

Compared to the female population of San Francisco, African American women are disproportionately affected by HIV (Figure 10.2). Although African American women represent 6% of the total female population, as of December 31, 2013 they accounted for 40% of the living female HIV cases in San Francisco.

Figure 10.2 Living female HIV cases diagnosed through December 2013 and female population by race/ethnicity, San Francisco

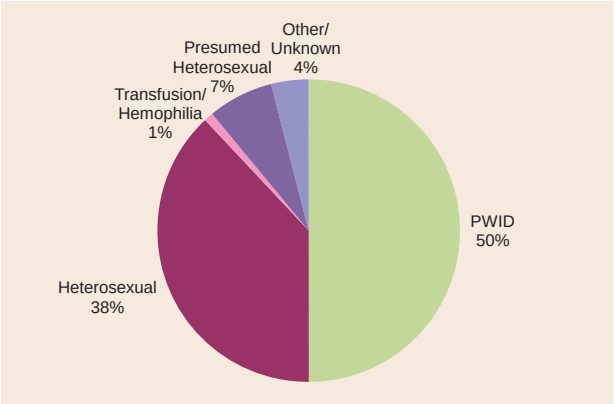


1 United States 2010 Census data.

The current transmission category definition for heterosexual contact does not adequately describe transmission for a large number of women who were likely 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, half acquired HIV infection through injecting drugs and 45% through heterosexual contact (Figure 10.3).

Figure 10.3 Females living with HIV diagnosed through December 2013 by transmission category, San Francisco

N=906



11 HIV among Children, Adolescents and Young Adults

Persons living with HIV in San Francisco who are adolescents (current age 13-17 years) or young adults (current age 18-24 years) make up less than 1% of all living HIV cases in the city. As of December 31, 2013 there were four adolescents and 138 young adults living with HIV. Among living young adult HIV cases, the majority were MSM (Table 11.1). Over one-third of living young adult cases were Latino, one-quarter were African American and 22% were white. Adolescent data are not displayed due to small numbers.

Table 11.1 Living young adult HIV cases by transmission category, gender, and race/ethnicity, December 2013, San Francisco

	18 - 24 Years Old	
	Number	(%)
Total	**138**	(100)
Transmission Category		
MSM	95	(69)
PWID	3	(2)
MSM-PWID	13	(9)
Heterosexual	6	(4)
Perinatal	16	(12)
Other/Unidentified	5	(4)
Gender		
Male	114	(83)
Female	19	(14)
Transfemale[1]	5	(4)
Race/Ethnicity		
White	30	(22)
African American	34	(25)
Latino	51	(37)
Asian/Pacific Islander	17	(12)
Other/Unknown	6	(4)

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. Compared to all U.S. cases, San Francisco cases had lower proportions of adolescent and young adult HIV diagnoses.

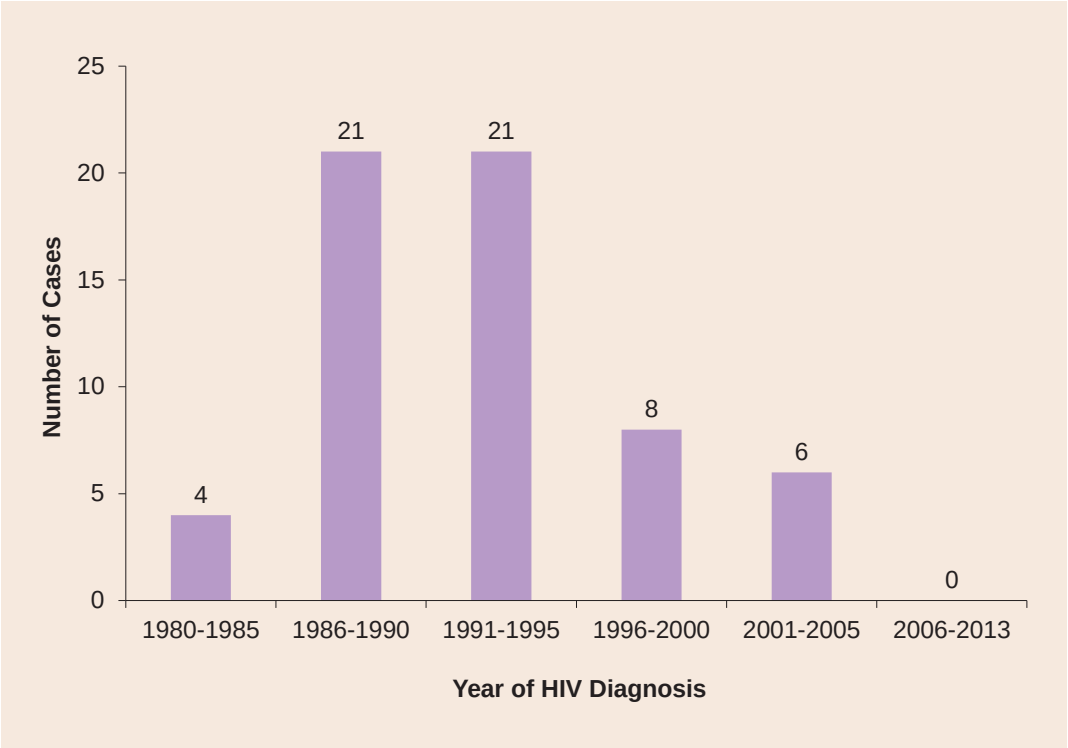
Table 11.2 Cases diagnosed with HIV infection among adolescents and young adults, 2010-2013, San Francisco and the United States

	Year of HIV Initial Diagnosis							
	2010		2011		2012		2013	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
San Francisco HIV Cases (All ages)	434		411		426		359	
Age 13-19 years at HIV diagnosis	4	(<1)	4	(<1)	6	(<1)	5	(1)
Age 20-24 years at HIV diagnosis	51	(12)	40	(10)	48	(11)	39	(11)
U.S. HIV Cases[1] (All ages)	43,806		42,842					
Age 13-19 years at HIV diagnosis	2,114	(5)	1,997	(5)	N/A		N/A	
Age 20-24 years at HIV diagnosis	7,047	(16)	7,005	(16)	N/A		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, 2011.

As of December 31, 2013, a cumulative total of 60 cases were diagnosed with HIV among children in San Francisco (less than 13 years old and 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 60 pediatric HIV cases reported, 25 (42%) have died, 32 (53%) have survived beyond childhood, and three (5%) were living pediatric HIV cases at the end of 2013.

Figure 11.1 Pediatric HIV cases by time period of HIV diagnosis, 1980-2013, San Francisco

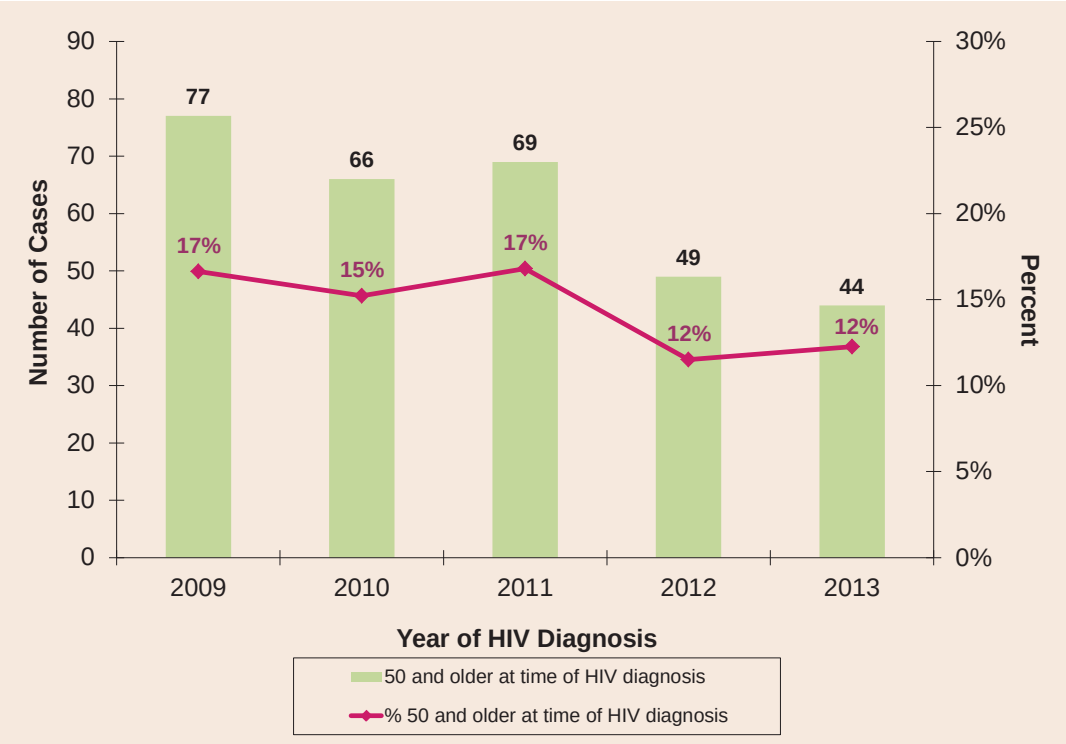


12 HIV in the Aging Population

With the advent of highly active ART, persons with HIV are living longer, and those aged 50 and older comprise a larger proportion of HIV cases over time. This group now represents more than 50% of the living HIV cases in San Francisco. Between 2009 and 2013, the number and proportion of living HIV cases aged 50 and older increased from 6,395 (42%) to 8,650 (54%).

The number of newly diagnosed persons aged 50 years and older peaked in 2009 with 77 new cases. Yet, in 2012, a decrease in newly diagnosed cases in this age group was noted. This smaller number and proportion of cases carried into 2013 where 12% of the newly diagnosed cases were aged 50 and older.

Figure 12.1 Number and percent of persons diagnosed with HIV infection[1] at age 50 years and older, 2009-2013, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis.

Persons diagnosed with HIV/AIDS in 2009-2013 at the age of 50 years and older differed slightly in demographic distribution when compared to younger persons diagnosed during the same time. A greater proportion of persons diagnosed at age of 50 years and older were female, African American, PWID, and heterosexual in comparison to younger diagnosed persons (Table 12.1).

Table 12.1 Characteristics of persons diagnosed with HIV infection in 2009-2013 by age at diagnosis, San Francisco

	Age ≥ 50 years (N=305)		Age < 50 years (N=1,788)	
	Number	(%)	Number	(%)
Gender				
Male	254	(83)	1,644	(92)
Female	49	(16)	97	(5)
Transgender	2	(1)	47	(3)
Race/Ethnicity				
White	172	(56)	860	(48)
African American	70	(23)	215	(12)
Latino	42	(14)	436	(24)
Other/Unknown	21	(7)	277	(15)
Transmission Category				
MSM	179	(59)	1,302	(73)
PWID	45	(15)	77	(4)
MSM-PWID	25	(8)	211	(12)
Heterosexual	33	(11)	89	(5)
Other/Unidentified	23	(8)	109	(6)

The majority of persons aged 50 years and older living with HIV/AIDS are male (93%), white (68%), and MSM (74%) (Table 12.2). The gender and transmission category characteristics of persons aged 50 years and older are similar to those under 50 years old. The aged 50 and older population are more likely to be white whereas those aged under 50 have a higher proportion of Latinos and Asian/Pacific Islanders.

Table 12.2 Characteristics of living HIV cases by age group, December 2013, San Francisco

	Age ≥ 50 years (N=8,650)		Age < 50 years (N=7,251)	
	Number	(%)	Number	(%)
Gender				
Male	8,058	(93)	6,585	(91)
Female	465	(5)	441	(6)
Transgender	127	(2)	225	(3)
Race/Ethnicity				
White	5,928	(68)	3,832	(53)
African American	1,181	(14)	857	(12)
Latino	1,092	(13)	1,703	(24)
Asian/Pacific Islander	306	(4)	588	(8)
Native American	35	(<1)	55	(1)
Other/Unknown	108	(1)	216	(3)
Transmission Category				
MSM	6,406	(74)	5,116	(71)
PWID	696	(8)	436	(6)
MSM-PWID	1,122	(13)	1,098	(15)
Heterosexual	229	(3)	284	(4)
Other/Unidentified	197	(2)	317	(4)

13 HIV among Transgender Persons

Transgender status relies on review of information in medical records. Information on transgender status has been collected since 1996. During 2006 to 2013, there were 103 transgender persons 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, transgender cases were more likely to be non-white, PWID, and younger.

Table 13.1 Characteristics of transgender[1] HIV cases compared to all HIV cases diagnosed in 2006-2013, San Francisco

	Transgender HIV Cases 2006-2013		HIV Cases 2006-2013	
	Number	(%)	Number	(%)
Total	**103**		**3,655**	
Race/Ethnicity				
White	20	(19)	1,843	(50)
African American	29	(28)	517	(14)
Latino	34	(33)	812	(22)
Other/Unknown	20	(19)	483	(13)
People who Injects Drugs				
Yes	31	(30)	699	(19)
No	72	(70)	2,956	(81)
Age at HIV Diagnosis (Years)				
13 - 17	0	(0)	11	(<1)
18 - 24	24	(23)	416	(11)
25 - 29	22	(21)	568	(16)
30 - 39	32	(31)	1,179	(32)
40 - 49	18	(17)	1,000	(27)
50+	7	(7)	481	(13)

1 See Technical Notes "Transgender Status."

As of December 31, 2013, there were 357 transgender persons living with HIV in San Francisco (Table 13.2). African Americans and Latinos were the largest racial/ethnic groups among living transgender HIV cases, and 46% of living transgender cases were PWID. Sixty-nine percent of living transgender cases were age 40 years and older at the end of 2013.

Table 13.2 Characteristics of transgender[1] persons living with HIV, December 2013, San Francisco

	Number	(%)
Race/Ethnicity		
White	72	(20)
African American	123	(34)
Latino	111	(31)
Asian/Pacific Islander	36	(10)
Native American	2	(1)
Other/Unknown	13	(4)
People who Injects Drugs		
Yes	163	(46)
No	194	(54)
Age in Years (at end of 2012)		
13 - 17	0	(0)
18 - 24	5	(1)
25 - 29	29	(8)
30 - 39	78	(22)
40 - 49	117	(33)
50+	128	(36)
Total Number	**357**	**(100)**

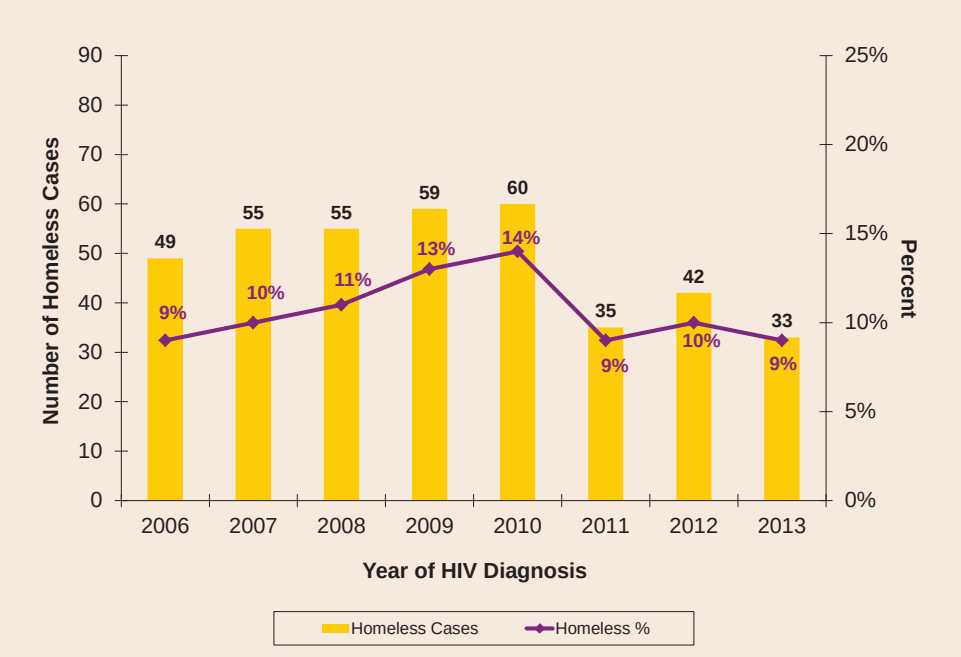
1 See Technical Notes "Transgender Status."

14 HIV among Homeless Persons

A case is defined as homeless if, at time of HIV or HIV infection stage 3 (AIDS) diagnosis, the medical record states that the patient is homeless or the patient's address is one of the following: (1) a known homeless shelter, (2) a health care clinic, or (3) a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence at diagnosis are not classified as homeless.

Among all cases diagnosed with HIV infection, the number of homeless cases increased from 2006 to 2010 and dropped thereafter (Figure 14.1). In 2010 the proportion of homeless among all cases diagnosed peaked at 14% and dropped to between 9% and 10% in years 2011 to 2013.

Figure 14.1 Number and percent of homeless cases diagnosed with HIV infection[1] by year of diagnosis, 2006-2013, San Francisco



1 Includes persons with HIV infection by year of their initial HIV diagnosis.

Compared to all HIV cases diagnosed in 2006 to 2013, persons who were homeless at time of HIV diagnosis were more likely to be female, transfemale, African American, and people who inject drugs (Table 14.1).

Table 14.1 Characteristics of homeless HIV cases compared to all HIV cases diagnosed in 2006-2013, San Francisco

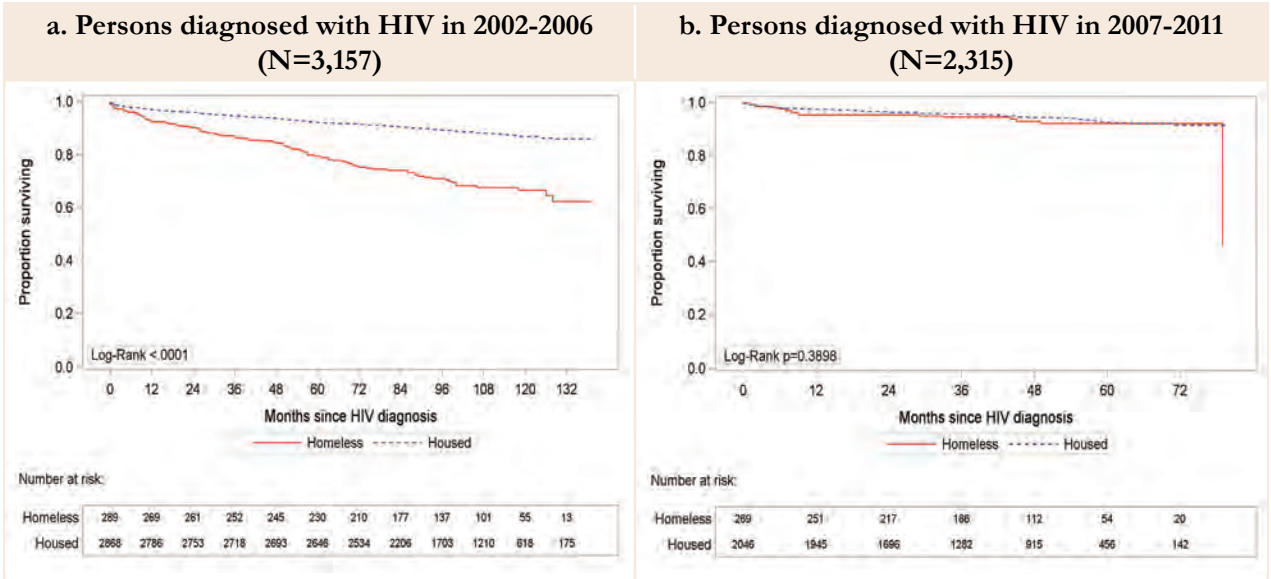
	Homeless HIV Cases 2006-2013		HIV Cases 2006-2013	
	Number	(%)	Number	(%)
Total	**388**		**3,655**	
Gender				
Male	294	(76)	3,288	(90)
Female	57	(15)	264	(7)
Transfemale[1]	37	(10)	103	(3)
Race/Ethnicity				
White	169	(44)	1,843	(50)
African American	111	(29)	517	(14)
Latino	68	(18)	812	(22)
Other/Unknown	40	(10)	483	(13)
Transmission Category				
MSM	136	(35)	2,607	(71)
PWID	95	(24)	225	(6)
MSM-PWID	116	(30)	474	(13)
Heterosexual	29	(7)	221	(6)
Other/Unidentified	12	(3)	128	(4)
Age at Diagnosis (Years)				
0 - 17	0	(0)	11	(<1)
18 - 24	54	(14)	416	(11)
25 - 29	69	(18)	568	(16)
30 - 39	101	(26)	1,179	(32)
40 - 49	100	(26)	1,000	(27)
50+	64	(16)	481	(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."

HIV-infected persons who are homeless have been shown to experience greater barriers to accessing care, delayed entry into HIV-specific care, worse medication adherence, and increased mortality compared to HIV-infected persons with housing. Over the last decade, a number of changes to funding and allocation of housing for the homeless and implementation of programs aimed at increasing access to health care and linkage to care for HIV-infected persons occurred in San Francisco. For example, in 2004, the "Care Not Cash" program was adopted, which provides homeless adults with housing in lieu of cash. In 2006, voters passed California Proposition 63, which allocated funds to counties that provided supportive housing to mentally ill homeless persons. During 2007 and 2008, the intake procedure to access the SFDPH's Direct Access to Housing inventory changed to prioritize people with serious medical conditions such as HIV/AIDS. In 2007 the SFDPH implemented "Healthy San Francisco" which provides health services for San Francisco residents including homeless persons who are unable to qualify for or afford public or private insurance.

In response to these changes we compared survival among homeless and housed persons diagnosed with HIV in San Francisco in two time periods; 2002-2006 and 2007-2011 (Figure 14.2). We found that in the earlier time period survival among those who were homeless at time of HIV diagnosis was significantly worse than survival among those who were housed (five-year survival after diagnosis, 79% and 92%, respectively) (Figure 14.2a). In more recent years survival was essentially the same for both homeless and housed persons (five-year survival after diagnosis, 92% and 93%, respectively) (Figure 14.2b). Although we cannot determine if or the extent to which, this improvement is due to changes in housing and access to health care for homeless persons with HIV, the timing of these changes and the improvement in survival suggest an association. Housing should be considered an essential component of comprehensive care for HIV-infected persons.

Figure 14.2 Kaplan-Meier survival curves for persons diagnosed with HIV in 2002-2006 and 2007-2011 by housing status at diagnosis, San Francisco



15 Persons Co-infected with HIV and STD

The occurrence of STD diagnosis among persons living with HIV is a marker for unprotected sex, which depending upon HIV treatment status and partner HIV serostatus, may cause an increased potential for HIV transmission. Diagnosis of STD among persons with HIV was determined through a computerized match of the HIV and STD case registries. Data from STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. The number of STD cases among persons living with HIV continues to rise from 928 cases in 2008 to 1,103 cases in 2012 (Figure 15.1). The increase coincided with the trend shown in early syphilis reported from 2008 through 2012, especially among MSM diagnosed with HIV (Figure 7.4). In 2012, rectal gonorrhea and male gonococcal procititis increased among HIV-positive MSM (Figure 7.3). All STD occurred after the HIV diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 15.1 Number of HIV cases diagnosed with an STD by year of STD diagnosis, 2008-2012, San Francisco

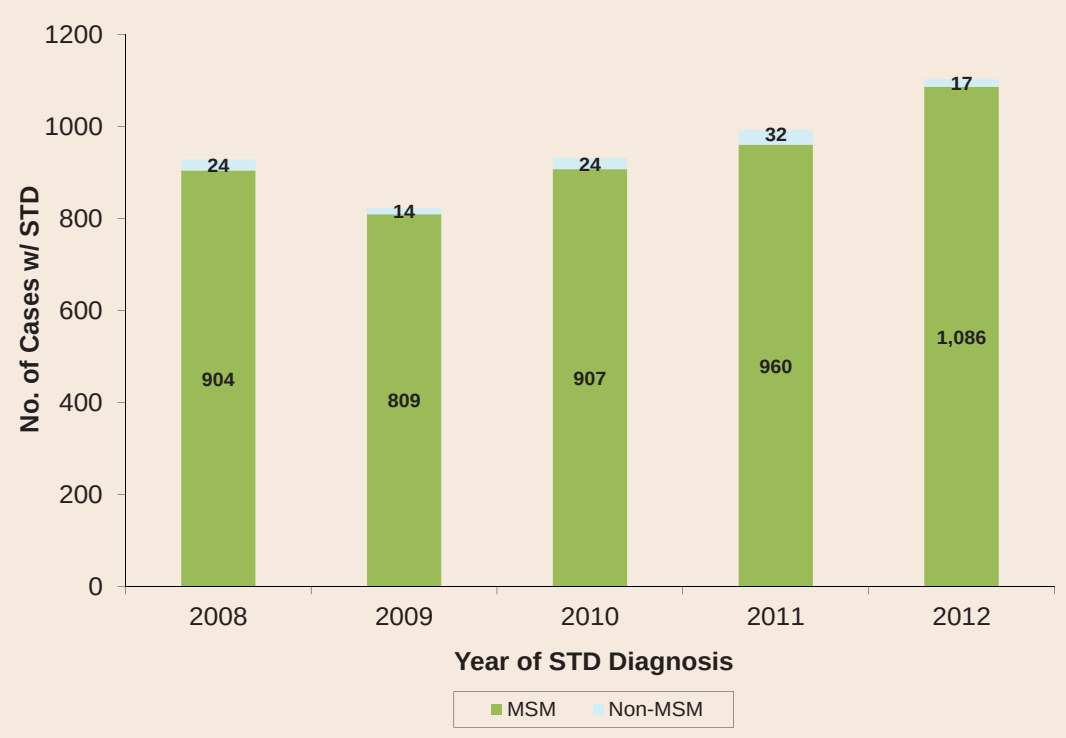


Table 15.1 shows the demographic characteristics of HIV cases diagnosed with an STD from 2008 through 2012. The majority of cases were male, white, and aged 40-49 years at time of STD diagnosis. Gender and race/ethnicity distributions were similar across five years. The proportion of HIV cases diagnosed with an STD in the 30-39 age group decreased from 2008 to 2012. In 2012, the proportion of HIV cases diagnosed with STD in 50-59 age group increased slightly from previous years.

Table 15.1 HIV cases diagnosed with an STD by demographic characteristics, 2008-2012, San Francisco

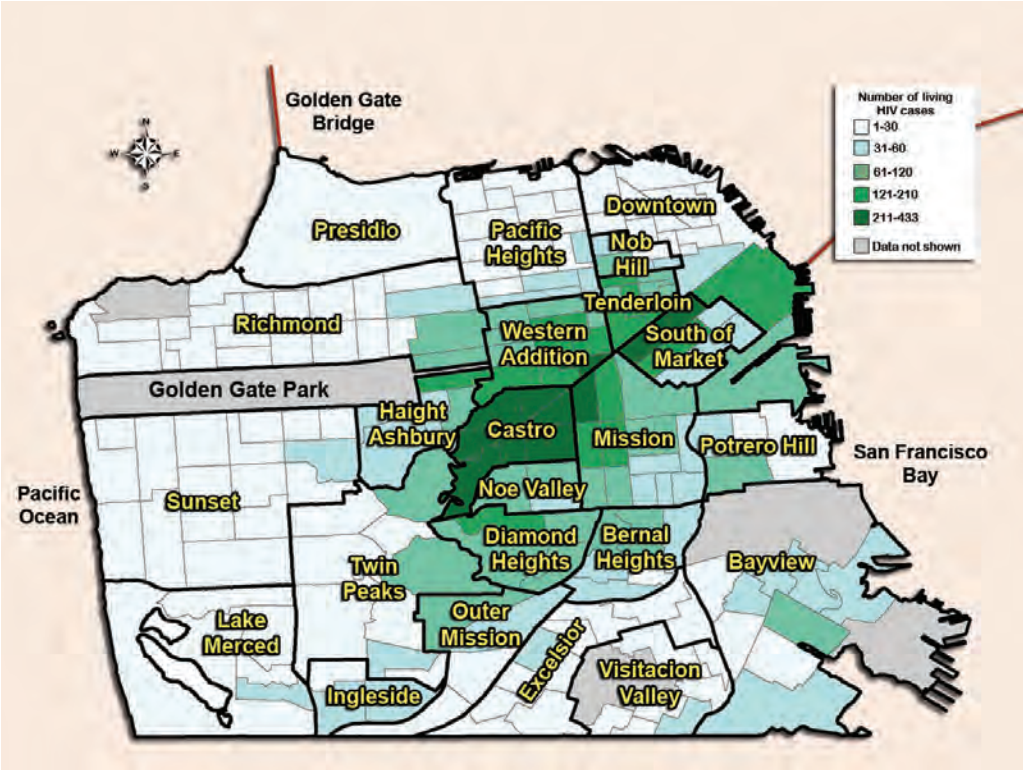
	Year of STD diagnosis									
	2008		2009		2010		2011		2012	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender										
Male	904	(97)	799	(97)	907	(97)	960	(97)	1,083	(98)
Female	12	(1)	8	(1)	8	(1)	11	(1)	8	(1)
Transfemale[1]	12	(1)	16	(2)	16	(2)	21	(2)	12	(1)
Race/Ethnicity										
White	549	(59)	487	(59)	590	(63)	598	(60)	671	(61)
African American	91	(10)	80	(10)	76	(8)	89	(9)	86	(8)
Latino	216	(23)	179	(22)	199	(21)	215	(22)	257	(23)
Asian/Pacific Islander	51	(6)	53	(6)	48	(5)	60	(6)	68	(6)
Other/Unknown	21	(2)	24	(3)	18	(2)	30	(3)	21	(2)
Age at STD Diagnosis										
15 - 29	106	(11)	97	(12)	101	(11)	110	(11)	132	(12)
30 - 39	286	(31)	267	(32)	252	(27)	245	(25)	265	(24)
40 - 49	400	(43)	321	(39)	415	(45)	415	(42)	461	(42)
50 - 59	108	(12)	113	(14)	128	(14)	172	(17)	197	(18)
60 +	28	(3)	25	(3)	35	(4)	50	(5)	48	(4)
Total	928		823		931		992		1,103	

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

Map 16.1 illustrates the geographic distribution of the number of living HIV cases in San Francisco by census tract and neighborhood as of December 31, 2013. The most current residence was used to map the living cases and collected through prospective chart review and laboratory reporting. All seven census tracts in the Castro ranked in the ten most populous census tracts among HIV cases in the city, ranging from 245 to 433 cases.

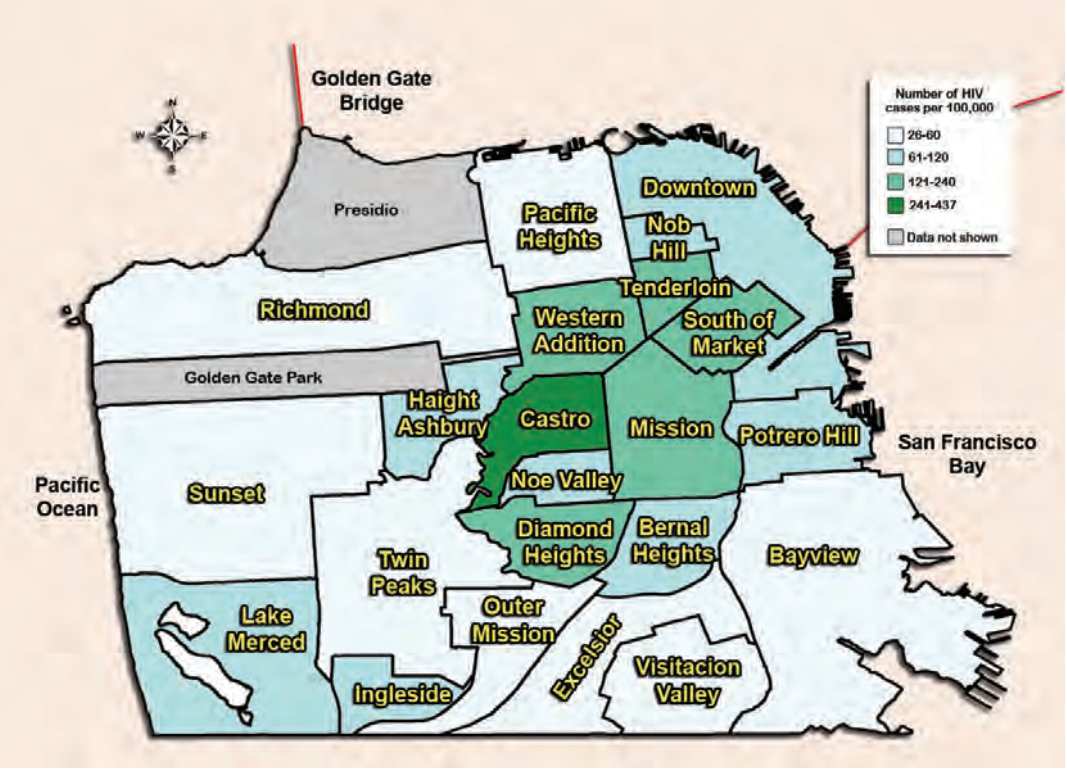
Map 16.1 Geographic distribution of persons living with HIV, December 2013, San Francisco



* Living homeless HIV cases (N=559) and living HIV cases with an unknown or invalid address (N=398) are not displayed on this map.

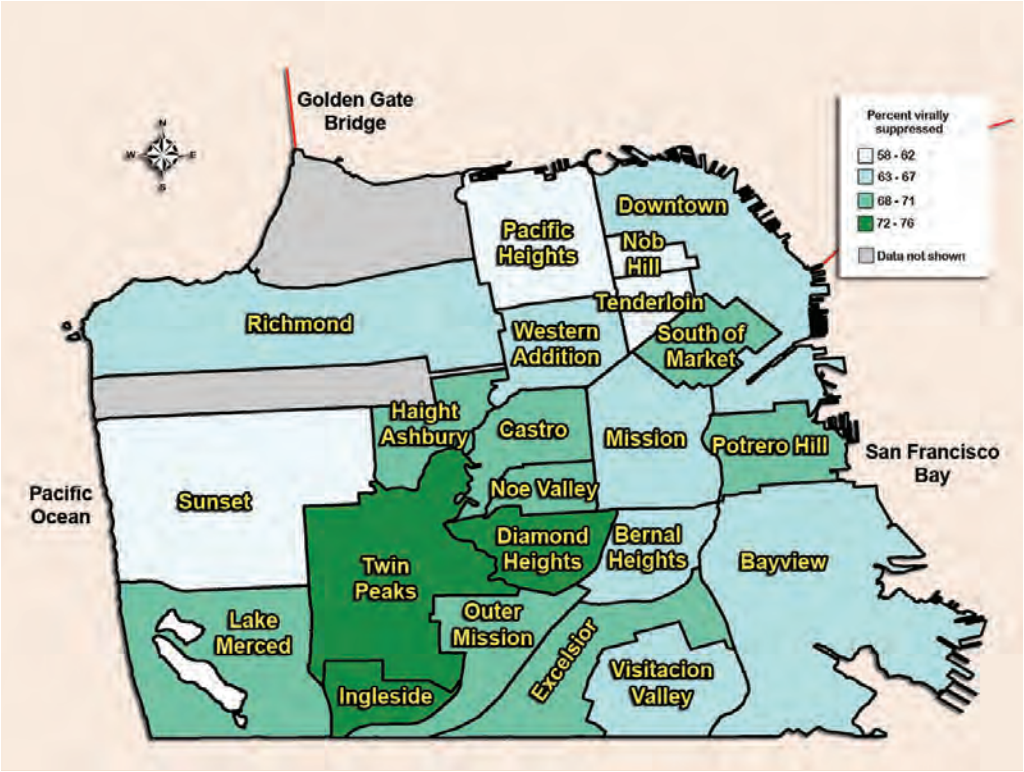
Map 16.2 displays the rates of newly diagnosed cases in San Francisco from 2012 to 2013. Total population estimates were taken from 2010 Census at the census tract level and aggregated by neighborhood. The Castro had the highest rates of diagnoses at 437 new cases per 100,000, more than twice as high as the Tenderloin (199 per 100,000) and South of Market neighborhoods (181 per 100,000). Neighborhoods located in the central parts of the city had higher rates of new diagnoses in comparison to those in outer parts of the city.

Map 16.2 Geographic distribution of HIV rates per 100,000 population for newly diagnosed cases, 2012-2013, San Francisco



Viral suppression among living HIV cases is a key indicator to track the general health of the prevalent population as well as the effects of treatment and care utilization patterns in San Francisco. We examined living HIV cases alive as of December 31, 2012 and diagnosed through December 31, 2011 who achieved viral suppression in 2012. The overall percentage for those who achieved viral suppression in 2012 was 62%; however, this includes percentages for the homeless (28%) and those with unknown residence (37%), data not displayed. The Tenderloin had the lowest viral suppression percentage in 2012 (58%) followed by Pacific Heights, the Sunset, and Nob Hill all at 61%.

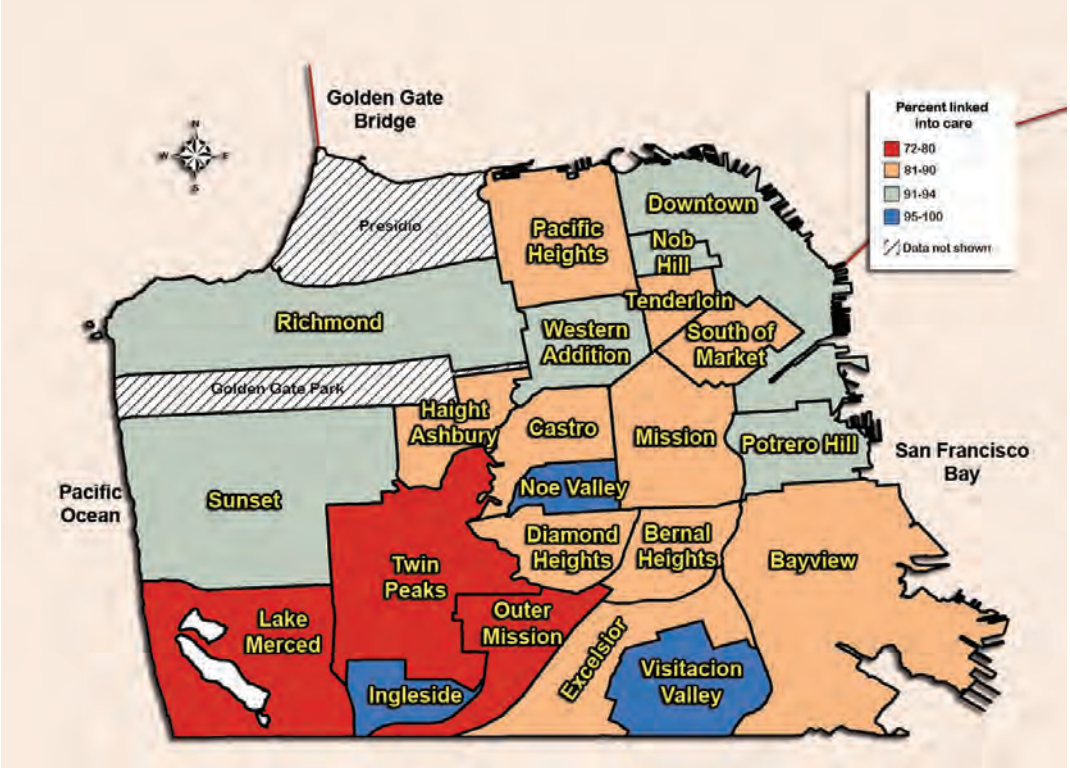
Map 16.3 Geographic distribution of proportion of living HIV cases diagnosed through 2011 who achieved viral suppression in 2012, San Francisco



* Living homeless HIV cases and living HIV cases with an unknown or invalid address are not displayed on this map (N=129, 28% and N=136, 37% achieved viral suppression, respectively).

Eighty-three percent of newly diagnosed cases from 2009 to 2012 were successfully linked to care within three months of their initial diagnosis. Those who were homeless at time of diagnosis also had a high proportion linked to care within three months (83%); while neighborhoods such as Twin Peaks (72%), Lake Merced (79%), and Outer Mission (80%) fell below the city average (Map 16.4). Both Visitacion Valley and Ingleside neighborhoods demonstrated a 100% linkage to care rate among their residents.

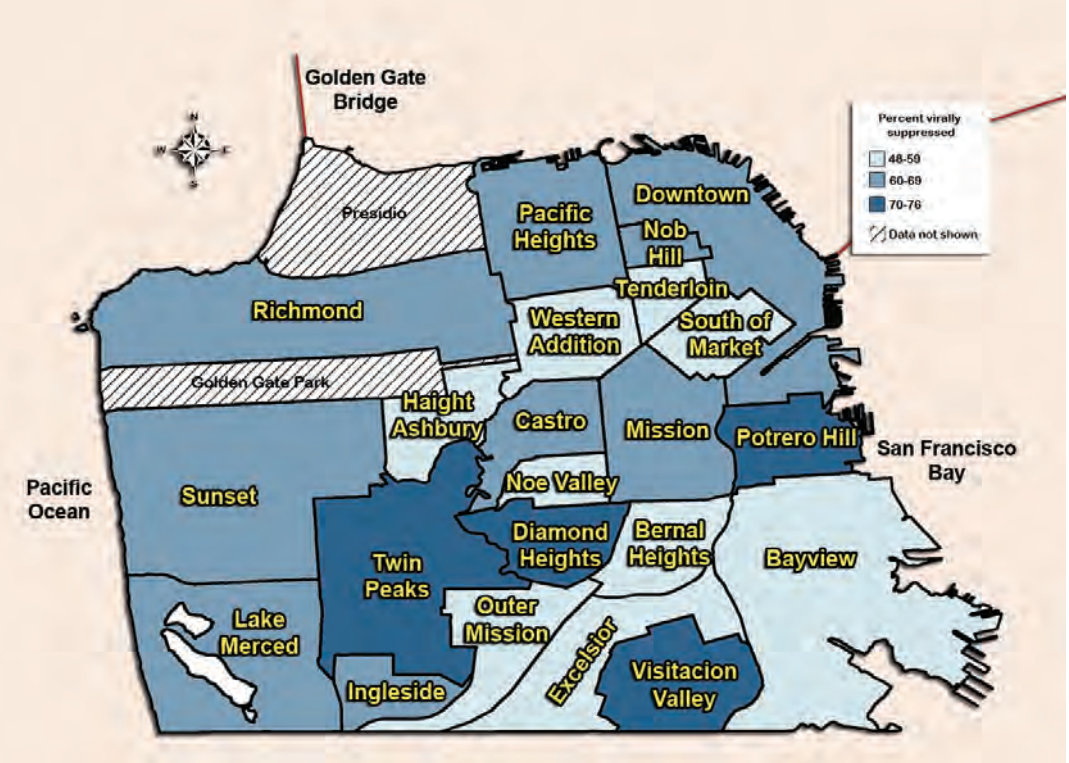
Map 16.4 Geographic distribution of proportion of HIV cases diagnosed in 2009-2012 who were linked to care within 3 months of diagnosis, San Francisco



* Homeless HIV cases and HIV cases with an unknown or invalid address are not displayed on this map (N=158, 83% and N=132, 74% were linked to care within 3 months of diagnosis, respectively).

Among the 1,820 new HIV cases diagnosed from 2009 to 2012, 57% had achieved viral suppression within 12 months of their diagnosis. Although a high proportion of homeless were linked in care within three months, less than half achieved viral suppression within the year (41%, not displayed). Map 16.5 illustrates areas that fell below the overall city average: Excelsior (48%), Bayview (53%), Outer Mission (53%), and the Tenderloin (54%).

Map 16.5 Geographic distribution of proportion of HIV cases diagnosed in 2009-2012 who achieved viral suppression within 12 months of diagnosis, San Francisco



* Homeless HIV cases and HIV cases with an unknown or invalid address are not displayed on this map (N=78, 41% and N=70, 39% achieved viral suppression within 12 months of diagnosis, respectively).

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 cases reporting in San Francisco was evaluated using capture-recapture methods as recommended by the Centers for Disease Control and Prevention HIV Incidence and Case Surveillance Branch[1]. San Francisco's surveillance system database was upgraded making it possible to apply this methodology. In brief, the numbers of cases expected to be diagnosed in San Francisco were estimated using HIV diagnoses reported to the SFDPH by different sources (e.g., laboratories, healthcare providers). Log-linear statistical models were used to estimate the number of expected cases (all reported cases and persons who had been diagnosed but had not been identified by SFDPH through reporting sources). Completeness of reporting (observed cases divided by expected cases) was determined for cases diagnosed during year 2012, evaluated at 12 months after the end of 2012. The completeness of case reporting of HIV diagnoses in 2012 was found to be 99%. In terms of timeliness, 95% of expected cases were reported within 6 months of the HIV diagnosis date.

Publications of our HIV data include persons who were residents of San Francisco at the time they were diagnosed with HIV. Our data also include 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. The confidential name-based HIV reporting system in San Francisco is considered mature (6 years have elapsed to allow for stabilization of data collection), and only cases reported confidentially by name are included in this report.

Stage of Disease at Diagnosis of HIV Infection

In 2008, the United States surveillance case definition[2] for HIV infection among adults and adolescents was revised to incorporate an HIV infection classification staging system with stages of HIV infection defined as follows:

- HIV infection, stage 1: No AIDS-defining condition and either CD4 count of ≥500 cells/μL or CD4 percentage of total lymphocytes of ≥29.

1 Hall HI, Song R, Gerstle 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 CDC. Revised Surveillance Case Definitions for HIV Infection Among Adults, Adolescents, and Children Aged <18 Months and for HIV Infection and AIDS Among Children Aged 18 Months to <13 Years --- United States, 2008. MMWR 2008;57(No. RR-10).

- HIV infection, stage 2: No AIDS-defining condition and either CD4 count of 200–499 cells/µL or CD4 percentage of total lymphocytes of 14–28.
- HIV infection, stage 3 (AIDS): CD4 count of <200 cells/µL or CD4 percentage of total lymphocytes of <14 or documentation of an AIDS-defining condition.
  Documentation of an AIDS-defining condition supersedes a CD4 count or percentage that would not, by itself, be the basis for a stage 3 (AIDS) classification.
- HIV infection, stage unknown: No information available on CD4 count or percentage and no reported information on AIDS-defining conditions (every effort should be made to report CD4 counts or percentages at the time of diagnosis to public health authorities).

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

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 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/).

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.

Medical Monitoring Project

3 State of California, Department of Finance, Race/Ethnic Population with Age and Sex 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, January 2013.

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. Information about care utilization, clinical outcomes, resource needs, and HIV risk behaviors is collected through patient interviews and medical chart review.

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 currently receiving care in San Francisco but who were residing 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 initial AIDS diagnosis and the date of death. This analysis included persons with at least one low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS-defining opportunistic illnesses. 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, 2011. Persons not known to have died were censored on the date of their last known follow-up or on December 31, 2011, 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 2010. Deaths classified as B20-B24 and all AIDS-related opportunistic infections listed on the death certificate were included in the HIV-related classification. Cause of death information for deaths in 2011 was not yet available at the time of this publication.

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 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 AIDS perinatally, or persons of unidentified risk.

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 many persons 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 3.5) was calculated among all cases living with HIV. The upper level estimate (Table 3.5, Figure 3.2) was calculated among cases who had following-up information within the last two years and whose chart review was completed between January 2012 and March 2014.

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.

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	557	859	1236	1629	1763	2161
HIV infection stage 3 deaths	0	8	32	111	273	534	807	878	1039	1278
Persons living with HIV infection stage 3	3	21	88	251	535	860	1289	2040	2764	3647

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
HIV infection stage 3 cases	2046	2285	2331	2070	1784	1562	1080	807	696	579
HIV infection stage 3 deaths	1365	1510	1641	1600	1594	1484	992	424	402	353
Persons living with HIV infection stage 3	4328	5103	5793	6263	6453	6531	6619	7002	7296	7522

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
HIV infection stage 3 cases	557	514	492	561	483	479	447	447	435	324
HIV infection stage 3 deaths	350	323	320	303	310	311	289	270	230	212
Persons living with HIV infection stage 3	7729	7920	8092	8350	8523	8691	8849	9026	9231	9343

Year	2010	2011	2012	2013
HIV infection stage 3 cases	296	252	238	176
HIV infection stage 3 deaths	194	186	162	129
Persons living with HIV infection stage 3	9445	9511	9587	9634

	2006	2007	2008	2009	2010	2011	2012	2013
White	282	273	256	239	207	213	208	165
African American	74	77	81	69	61	66	45	44
Latino	109	107	118	96	107	81	106	88
Other	52	73	60	59	59	51	67	62

	2006	2007	2008	2009	2010	2011	2012	2013
White	144	141	132	127	108	110	112	86
African American	235	219	233	227	196	201	156	157
Latino	167	148	169	126	148	100	142	112
Other	36	47	38	39	36	33	45	39

	2006	2007	2008	2009	2010	2011	2012	2013
White	11	9	9	4	6	9	3	4
African American	43	60	69	38	44	62	27	23
Latina	6	15	7	14	12	19	15	12
Other	2	4	3	1	4	2	2	3

	2006	2007	2008	2009	2010	2011	2012	2013
MSM	359	335	363	320	276	284	333	268
PWID	19	19	15	15	22	13	11	10
MSM-PWID	73	80	54	64	56	45	39	32
Other	17	31	25	21	35	18	19	17

	2006	2007	2008	2009	2010	2011	2012	2013
PWID	19	15	16	9	12	15	3	12
Heterosexual	12	23	18	14	18	18	16	8
Other	4	5	6	2	4	9	3	3

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	132	124	120	123	120	116	111	109	88	89	87
African American	283	261	246	245	254	333	223	282	216	204	172
Latino	62	81	108	75	90	74	62	75	61	54	50
Other	14	8	11	15	20	18	24	16	10	11	15

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	1	3	5	6	4	6	11	8	8	5	2
African American	65	79	85	73	70	82	68	64	75	51	58
Latino	13	10	10	7	10	10	22	5	2	2	2
Other	3	2	2	2	2	2	2	2	1	2	6

White	2009	2010	2011	2012	2013
Public	23%	26%	23%	13%	17%
Private	45%	45%	41%	46%	44%
None	18%	14%	21%	27%	28%
Missing	15%	15%	15%	13%	10%

African American	2009	2010	2011	2012	2013
Public	46%	51%	45%	44%	43%
Private	22%	21%	20%	24%	14%
None	25%	16%	26%	18%	30%
Missing	7%	11%	9%	13%	14%

Latino	2009	2010	2011	2012	2013
Public	24%	41%	24%	33%	22%
Private	20%	21%	31%	26%	39%
None	36%	28%	28%	32%	34%
Missing	20%	10%	18%	8%	6%

Other	2009	2010	2011	2012	2013
Public	20%	25%	20%	24%	31%
Private	41%	27%	45%	39%	27%
None	15%	29%	24%	28%	26%
Missing	24%	19%	12%	9%	16%

	2006	2007	2008	2009	2010	2011	2012	2013
White	251	246	229	219	182	190	193	149
African American	47	39	46	46	32	38	33	32
Latino	99	92	104	82	82	66	88	78
Other	47	60	55	55	47	44	60	50

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Male Rectal Gonorrhea (HIV+)	136	187	225	227	196	165	167	215	286	313
Male Rectal Gonorrhea (HIV-)	190	201	251	187	193	203	235	303	384	416
Male Gonococcal Proctitis (HIV+)	19	28	25	26	18	11	5	11	10	13
Male Gonococcal Proctitis (HIV-)	22	23	17	7	17	16	13	13	15	20

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Primary (HIV+)	39	37	40	29	52	52	76	66	92	92
Secondary (HIV+)	131	80	84	74	123	110	140	143	184	155
Early Latent (HIV+)	103	104	105	81	139	141	174	199	259	283
Primary (HIV-)	74	29	32	29	52	50	59	66	74	98
Secondary (HIV-)	72	57	51	43	64	70	66	58	95	86
Early Latent (HIV-)	63	52	39	46	48	53	64	60	66	105

	2006	2007	2008	2009	2010	2011	2012	2013
White	18	16	17	10	15	12	3	10
African American	14	13	11	9	15	11	5	5
Latino	4	2	2	4	1	5	3	3
Other	2	3	1	1	3	0	3	4

Age in years	2006	2007	2008	2009	2010	2011	2012	2013
18-24	1	1	1	1	3	2	0	2
25-29	4	5	7	2	1	3	0	1
30-39	6	11	7	3	9	1	1	4
40-49	14	10	9	7	9	10	10	8
50+	13	7	7	11	12	12	3	7

	2006	2007	2008	2009	2010	2011	2012	2013
White	8	7	5	4	6	8	7	1
African American	9	19	17	10	11	9	6	4
Latino	5	9	7	8	14	8	9	4
Other	2	7	4	1	5	1	1	5

	2006	2007	2008	2009	2010	2011	2012	2013
White	18	14	15	7	10	14	4	6
African American	11	15	17	9	10	14	6	5
Latina	3	8	4	8	7	11	9	7
Other	3	6	4	1	7	3	3	5

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