



San Francisco Department of Public Health
HIV/AIDS Epidemiology Annual Report
HIV Epidemiology Section

2010





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HIV Epidemiology Section
San Francisco Department of Public Health AIDS Office
25 Van Ness Avenue, Suite 500
San Francisco, CA 94102 USA

Phone (415) 554-9050
Fax (415) 431-0353

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San Francisco Department of Public Health

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Health Officer and
Director of Population Health and Prevention

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HIV Epidemiology Section

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HIV Special Studies, Director

Sandra Schwarcz, MD, MPH

Program Coordinators

Tony Buckman, MS
Viva Delgado, MPH
Mike Grasso, MPH
Alison Hughes, MPH
Theresa Ick
Maree Kay Parisi

Epidemiologists/Data Managers

Miao-Jung Mia Chen, PhD, MPH
Yea-Hung Chen, MS
Jennie CS Chin, MBA
Priscilla Lee Chu, DrPH, MPH
Anne Hirozawa, MPH
Tim Kellogg, MA
Kara O'Keefe, PhD, MPH
Sharon Pipkin, MPH
Annie Vu, MPH

Staff

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Tyler Robertson
Rufina San Juan
Arfana Sogal
Nashanta Stanley
Luke Tao
Belinda Van
James Wendelborn
Conrad Wenzel
Lauren Williams

Intern

Leilie Ungaro

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E Executive Summary

The exact number of persons living with HIV/AIDS in San Francisco is difficult to verify as there are many who are unaware of their infection at a given point in time. Similarly, the number of persons who will acquire HIV infection in the course of the year can only be projected from a limited number of special studies or approximated indirectly from trends in behaviors related to HIV. In addition, the sizes of the populations at highest risk for acquiring HIV are not well known, as the U.S. Census does not record such factors as drug use, sexual orientation, or transgender status.

Nonetheless, San Francisco has a wealth of information that guides our estimates of the HIV/AIDS epidemic. Approximately every five years, the HIV Epidemiology Section gathers together the most recent data from multiple sources, reconciles differences across these sources, and assesses their uncertainties to synthesize the most plausible estimates of HIV prevalence, HIV incidence, and the number of persons in the groups at highest risk. These figures, referred to as the “San Francisco HIV Consensus Estimates,” were most recently compiled in 2011 and are presented in Table 1.5 of this report.

Overall, the 2011 HIV Consensus Estimates project cautious optimism. The number of new HIV infections forecasted for the year 2011 is 736 – lower than the projection made for 2006 (977). However, the uncertainties of the data suggest an upper margin of error that overlaps 977, and we conclude a trend of slight decline rather than dramatic decline. As of January 1, 2011, the number of San Francisco residents living with HIV was estimated to be 18,576, or approximately 2.3% of the total population. The large majority of estimated living and new HIV cases are among men who have sex with men (MSM), with most other existing and newly occurring cases represented by injection drug users (IDU), especially MSM IDU. In terms of rates for new infections, transfemales and transmales who inject drugs comprise the most rapidly infected groups. The numbers of HIV cases among non-injecting heterosexuals in San Francisco remain low.

Other data presented in this report provide evidence of continuing improvements in the care and treatment of persons living with HIV/AIDS. San Francisco has a high coverage of antiretroviral treatment for persons with HIV infection. Testing coverage is also high as evidenced by a low proportion of persons remaining undiagnosed and increasing CD4 counts at diagnosis. The early diagnosis and rapid linkage to treatment is translating into improved health outcomes for thousands of San Franciscans. Mortality among HIV/AIDS patients continues to fall.

This year marks the 30 anniversary of the first identified AIDS cases. This report therefore provides a backdrop to take stock of the decades of progress in reducing the suffering of persons with HIV/AIDS and the recent encouraging trends in decreasing new infections. Despite the good news found in this report, HIV/AIDS still has no cure; there is no effective vaccine, and at best several hundred of our residents will continue to be infected each year for many foreseeable years to come. The work is not yet done.

1 Overview of HIV/AIDS in San Francisco

HIV/AIDS surveillance in San Francisco is conducted through various methods and evaluated on a regular basis (see Technical Notes, HIV/AIDS Surveillance Methods). There were a cumulative total of 28,793 San Francisco residents diagnosed with AIDS from the beginning of the epidemic to December 31, 2010 (Table 1.1). This comprises 18% of California AIDS cases and 3% of AIDS cases reported nationally. Compared to cases reported in California and the United States, AIDS cases in San Francisco are 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 IDU).

HIV/AIDS cases diagnosed in 2010 exhibit different distributions in demographic and exposure categories. Compared to cumulative San Francisco AIDS cases, there was a greater proportion of females, people of color, and people infected through heterosexual contact. Compared to HIV/AIDS cases diagnosed nationally in 2009, San Francisco's recently diagnosed HIV/AIDS cases were more likely to be male, white, and MSM.

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

	Cumulative AIDS Cases*			Newly Diagnosed HIV/AIDS Cases*	
	San Francisco ¹ (N = 28,793)	California ² (N = 159,329)	United States ³ (N = 1,080,714)	San Francisco ¹ , 2010 (N = 399)	United States ³ , 2009 (N = 35,825)
	Number	%	%	%	%
Gender					
Male	27,167	94%	90%	90%	76%
Female	1,211	4%	9%	7%	24%
Transgender [#]	415	1%	1%	3%	--
Race/Ethnicity					
White	20,298	70%	54%	50%	28%
African American	3,649	13%	18%	14%	51%
Latino	3,543	12%	25%	21%	20%
Asian/Pacific Islander	913	3%	3%	11%	1%
Native American	128	<1%	<1%	1%	<1%
Other/Unknown	262	1%	<1%	3%	<1%
Exposure Category					
MSM	21,267	74%	67%	62%	44%
IDU	2,180	8%	10%	8%	5%
MSM IDU	4,430	15%	10%	14%	3%
Heterosexual	479	2%	6%	7%	15%
Other/Unidentified	437	2%	7%	9%	33%

* Percentages may not add to 100% due to rounding.

1 San Francisco data are reported through March 9, 2011 for cases diagnosed through December 31, 2010.

2 California data are reported through December 2010. California data on newly diagnosed HIV/AIDS cases are not available.

3 U.S. data are reported through December 2009 and may be found in the CDC HIV Surveillance Report, 2009; Vol.21. U.S. data for HIV/AIDS cases reflect unadjusted numbers for 40 states with confidential name-based HIV reporting.

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

For San Francisco AIDS cases, the distribution of HIV exposure categories differs by race/ethnicity and gender. Among men, MSM account for the majority of male AIDS cases within all racial/ethnic groups (Table 1.2). In African American men, injection drug use among heterosexuals is the second leading exposure category. However, for men of all other racial/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2% of men with AIDS acquired HIV infection through heterosexual contact, transfusion of blood or blood products, or other exposure categories.

Among women with AIDS, the most frequent exposure category for whites, African Americans, Latinas, and Native Americans is injection drug use (IDU) followed by heterosexual contact. For Asian/Pacific Islander women, 50% acquired their infection through heterosexual contact, 25% through injection drug use, and 16% through transfusion of blood or blood products.

Compared to men and women with AIDS, transfemale AIDS cases were more likely to be in a transmission category involving injection drug use. Among transfemale AIDS cases, 57% of whites, 69% of African Americans, 44% of Latinos and 33% Asian/Pacific Islander were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2010, San Francisco

	White		African American		Latino		Asian/Pacific Islander		Native American	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male										
MSM	16,133	(82)	1,529	(51)	2,538	(78)	679	(84)	54	(49)
IDU	507	(3)	679	(23)	172	(5)	26	(3)	9	(8)
MSM IDU	3,007	(15)	619	(21)	419	(13)	63	(8)	44	(40)
Heterosexual	34	(<1)	65	(2)	42	(1)	13	(2)	2	(2)
Transfusion/ Hemophilia	50	(<1)	17	(1)	23	(1)	12	(1)	0	(0)
Other/Unidentified	64	(<1)	61	(2)	54	(2)	20	(2)	2	(2)
Male Subtotal	19,795		2,970		3,248		813		111	
Female										
IDU	254	(65)	387	(71)	82	(47)	16	(25)	12	(86)
Heterosexual	87	(22)	125	(23)	70	(40)	32	(50)	2	(14)
Transfusion/ Hemophilia	29	(7)	10	(2)	10	(6)	10	(16)	0	(0)
Other/Unidentified	20	(5)	25	(5)	12	(7)	6	(9)	0	(0)
Female Subtotal	390		547		174		64		14	
Transfemale*										
IDU	64	(57)	91	(69)	53	(44)	12	(33)	#	
Non IDU	49	(43)	41	(31)	68	(56)	24	(67)	#	
Transfemale Subtotal	113		132		121		36		#	

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

Data are not released due to potential small population size.

The number of new AIDS cases diagnosed each year among San Francisco residents reached a peak of 2,328 cases in 1992 and has declined since then (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1995 and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of combination antiretroviral therapies. Since 1999, slight declines have continued in both cases and deaths. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2009 and 2010 may be revised upward in future reports.

The number of San Franciscans living with AIDS has continued to rise every year since 1980. This is due to effective antiretroviral therapy and a lower number of AIDS deaths than new AIDS cases each year. There were 9,452 San Francisco residents living with AIDS by the end of 2010.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2010, San Francisco

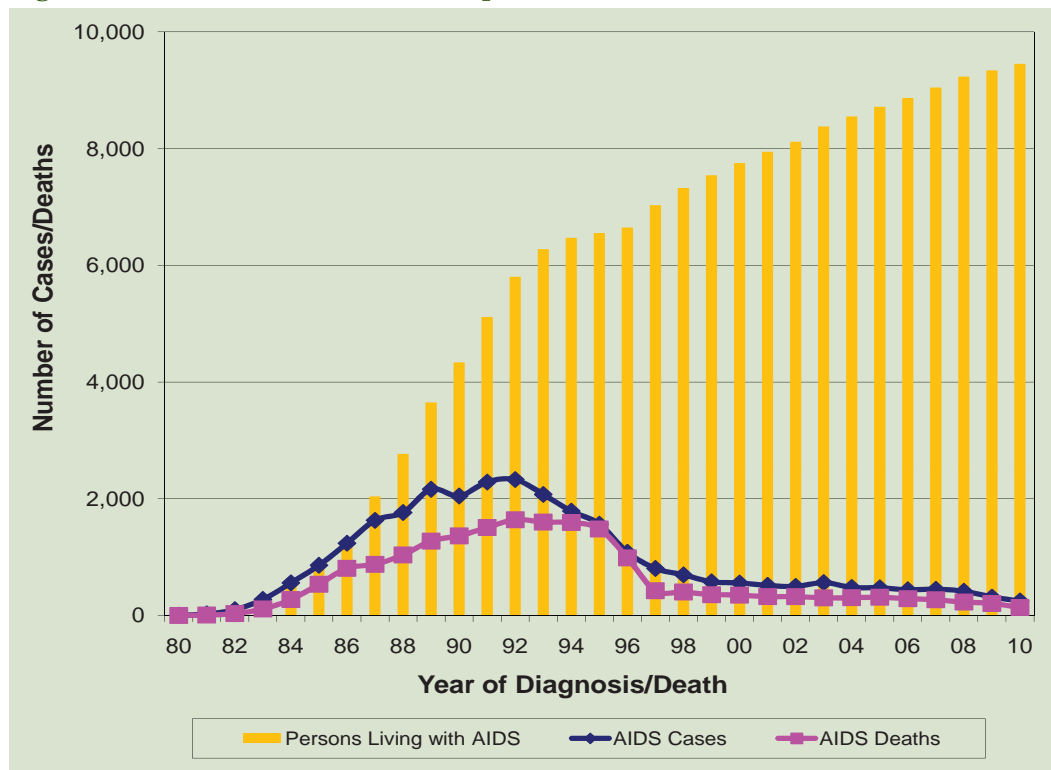
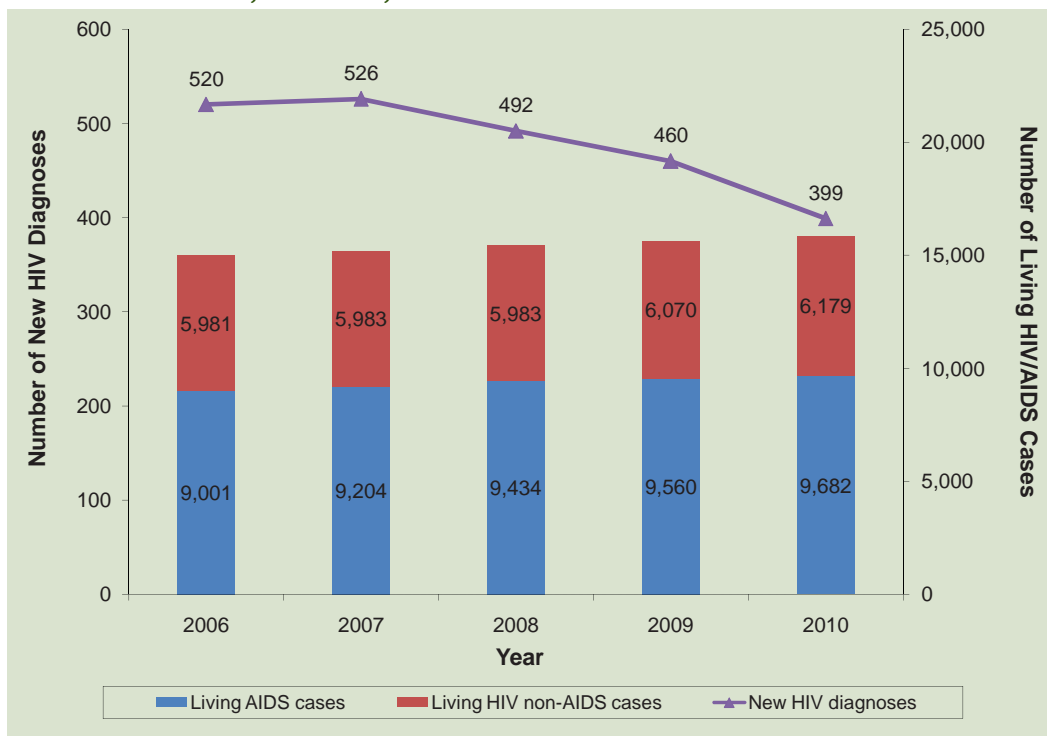


Figure 1.2 illustrates the number of persons newly diagnosed with HIV infection (line) and number of persons living with HIV/AIDS between 2006 and 2010 (stacked bars). The date of HIV diagnosis for newly diagnosed cases was determined based on the earliest date of any of the following: a) HIV antibody test, b) viral load or CD4 test, c) initiation of antiretroviral therapy, or d) 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 non-AIDS, concurrent HIV and AIDS diagnosis, or initially diagnosed with HIV non-AIDS and developed AIDS in subsequent year.

The number of new HIV diagnoses declined between 2007 and 2010. For recent years, the numbers are lower for cases diagnosed due to reporting delay. The number of living cases by year includes persons who were diagnosed with HIV/AIDS during or prior to the year shown and known to be alive by the end of that year. The number of persons living with HIV/AIDS continued to increase from 14,982 in 2006 to 15,861 in 2010. The increasing number of living cases is a reflection of both 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. Thus, these figures may underestimate the true prevalence.

Figure 1.2 Number of cases diagnosed with HIV infection and HIV/AIDS prevalence*, 2006-2010, San Francisco



* The number of living AIDS cases includes persons who were San Francisco residents at the time of HIV diagnosis and progressed to AIDS while they were a resident in another jurisdiction. The number of living HIV non-AIDS cases includes persons reported both by name and by a non-name code prior to 2006.

Table 1.3 shows the characteristics of persons diagnosed with HIV between 2007 and 2010. The majority were male, white, aged 20-49 years, and MSM. Race/ethnicity distributions were fairly similar across the four years. There were no children (<13 years) diagnosed with HIV during this time period.

Table 1.3 Characteristics of persons newly diagnosed with HIV, 2007- 2010, San Francisco

	Year of HIV Initial Diagnosis*			
	2007	2008	2009	2010
Total Number	526	492	460	399
Gender				
Male	88%	90%	90%	90%
Female	8%	8%	6%	7%
Transfemale [#]	4%	2%	4%	3%
Race/Ethnicity				
White	53%	51%	50%	50%
African American	15%	16%	16%	14%
Latino	19%	22%	21%	21%
Asian/Pacific Islander	9%	8%	9%	11%
Native American	0%	1%	0%	1%
Other/Unknown	4%	2%	4%	3%
Age at HIV Diagnosis (years)				
0 – 12	0%	0%	0%	0%
13 – 19	2%	2%	1%	1%
20 – 29	26%	24%	24%	27%
30 – 39	36%	36%	31%	28%
40 – 49	26%	28%	27%	29%
50+	11%	10%	17%	14%
Exposure Category				
MSM	66%	72%	73%	62%
IDU	7%	6%	6%	8%
MSM IDU	13%	9%	12%	14%
Heterosexual	8%	7%	4%	7%
Other/Unidentified	5%	6%	5%	9%

* Data include persons with a diagnosis of HIV (not AIDS), an initial diagnosis of HIV (not AIDS) and later diagnosed with AIDS, and concurrent diagnosis of HIV and AIDS, reported to the SFPDPH as of March 9, 2011. Percentages may not add to 100% due to rounding.

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

Characteristics of living HIV/AIDS cases in San Francisco are different than statewide and nationwide cases (Table 1.4). Compared to California and U.S. living HIV/AIDS cases, San Francisco living HIV/AIDS cases are more likely to be male, white, and MSM. There is a larger proportion of persons living with HIV/AIDS in California and the U.S. that are female, African Americans and Latinos. Heterosexual contact and IDU (non-MSM) are also more common among California and U.S. cases than San Francisco cases.

Table 1.4 Characteristics of persons living with HIV/AIDS in San Francisco, California and the United States, December 2010

	San Francisco ¹		California ²		United States ³
	Living HIV Non-AIDS Case	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,179	15,861	40,507	110,994	652,294
Gender					
Male	92%	92%	86%	87%	72%
Female	6%	6%	13%	12%	28%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	62%	63%	47%	46%	33%
African American	13%	14%	19%	19%	48%
Latino	16%	16%	30%	31%	17%
Asian/Pacific Islander	5%	5%	4%	4%	<1%
Native American	1%	1%	<1%	<1%	<1%
Other/Unknown	3%	2%	<1%	<1%	<1%
Exposure Category					
MSM	74%	73%	67%	65%	39%
IDU	6%	7%	6%	8%	14%
MSM IDU	12%	14%	6%	8%	4%
Heterosexual	3%	3%	9%	9%	20%
Other/Unidentified	5%	3%	12%	10%	23%

1. San Francisco cases are reported through March 9, 2011 for cases diagnosed through December 31, 2010 and include both name-based and code-based HIV cases.

2. California cases are reported through December 31, 2010 and include only the name-based HIV cases.

3. U.S. data reflect unadjusted living cases, as of December 2008 for 40 states with confidential name-based HIV reporting.

The 2011 HIV Consensus Estimates

Approximately every five years, the most recent available data from multiple sources are gathered together, assessed for their strengths and limitations, and synthesized to produce the best possible estimates and projections of the HIV epidemic. The effort, known as the “San Francisco HIV Consensus Estimates” was conducted anew in 2011 with results shown below.

Table 1.5 presents the estimated size of the behavioral risk population and the number of and percent living with HIV as of January 1st, 2011. Overall, 18,576 San Francisco residents are estimated to be living with HIV. The majority are MSM and MSM IDU. Transfemales (MTF), including those who inject drugs (MTF IDU), suffer a high burden of infection in terms of relative numbers infected (HIV prevalence). The number of new HIV infections projected to occur in the city during 2011 is 736, with a lower and upper plausible range of 534 to 977. As for rates of new infections (HIV incidence), the epidemic is currently moving fastest among transfemales, with a moderate rate among MSM. Outside of persons who inject drugs, HIV incidence among heterosexuals is low.

Table 1.5 The 2011 HIV consensus estimates: population size, HIV prevalence, and HIV incidence by behavioral risk population, San Francisco

Behavioral Risk Population	Population size on 1/1/2011	Number HIV+ on 1/1/2011	% HIV+	New infections during 2011	Incidence rate (% per year)
MSM	59,809	13,565	22.70%	585	1.27%
MTF	1,064	377	35.50%	17	2.48%
MSM IDU	4,874	2,308	47.40%	50	1.95%
FSM/F IDU	5,722	599	10.50%	14	0.27%
MSF IDU	7,884	986	12.50%	20	0.29%
MTF IDU	464	206	44.40%	15	5.77%
FSM/F (at risk population)	3,626	289	8.00%	17	0.51%
FSM/F (total population)	335,586		0.09%		0.01%
MSF (at risk population)	2,991	138	4.60%	18	0.63%
MSF (total population)	281,976		0.05%		0.01%
Total	816,770	18,576*	2.27%	736	0.09%
			Lower plausible	534 [#]	
			Upper plausible	977 [‡]	

MSM: Men who have sex with men

MTF: Male to female transgender persons

MSM IDU: MSM who also inject drugs

FSM/F IDU: Female injection drug users who have sex with males/females

MSF IDU: Heterosexual male injection drug users

MTF IDU: MTF who also inject drugs

FSM/F: Females who have sex with males/females

MSF: Males who have sex with females

* Includes other populations not listed in the table such as infants, children, and persons exposed through transfusion of blood or blood products.

Reported cases +23% unknown.

‡ 2006 Estimate.

2

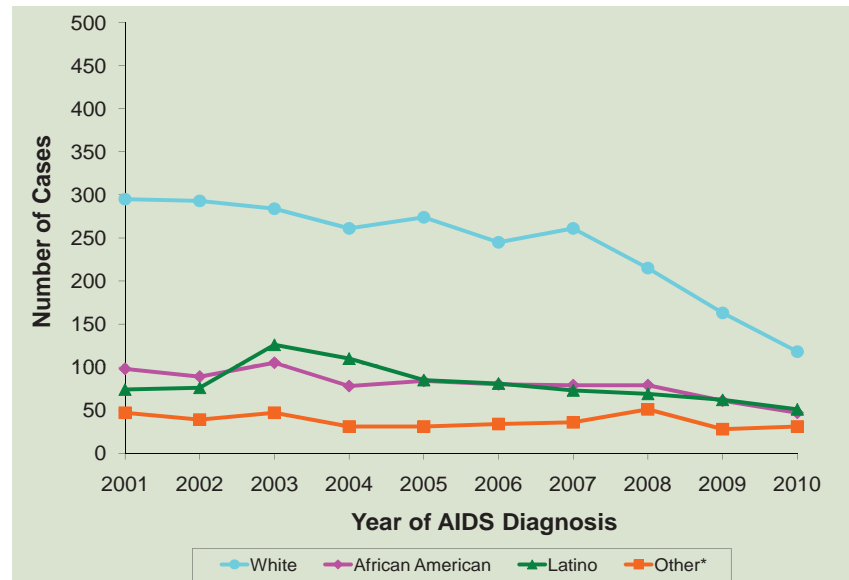
Trends in HIV/AIDS Diagnosis

Race/ethnicity

In absolute numbers, AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). The number of white AIDS cases has declined over the last 10 years. The number of African American AIDS cases also declined from 2001, but has been level between 2004 and 2008. The trend for Latino AIDS cases shows a period of slight increase until 2003 and a decline thereafter. AIDS case counts for recent years are subject to delays in reporting, particularly for 2010.

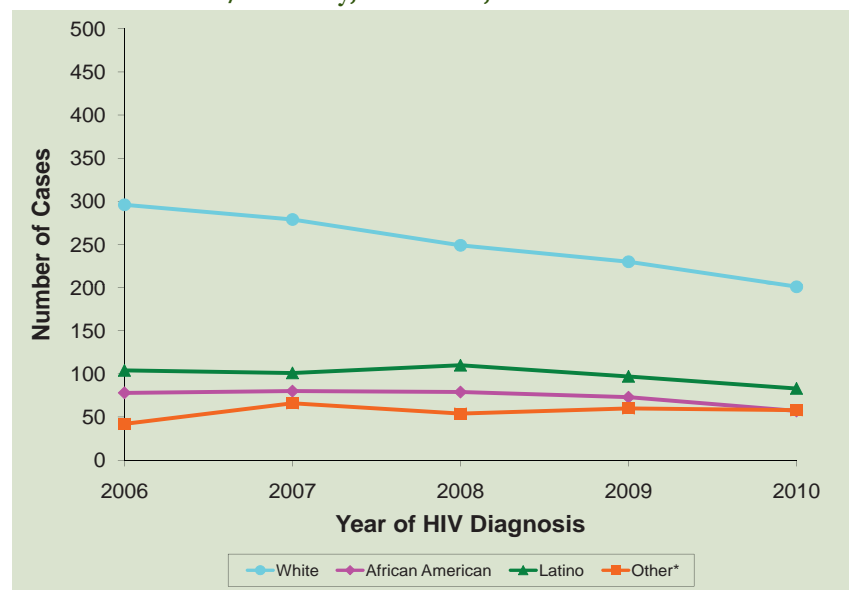
Trends by race/ethnicity category for cases diagnosed with HIV infection show that, from 2006 to 2010, whites accounted for the majority of diagnosed cases (Figure 2.2). The number of white HIV/AIDS cases declined in this time period, while the number of HIV/AIDS cases for other race/ethnicity groups remained level.

Figure 2.1 Number of AIDS cases by race/ethnicity, 2001-2010, San Francisco



* Cases in the "Other" race/ethnicity category include 72% Asian/Pacific Islanders, 9% Native Americans, and 18% Multi-race.

Figure 2.2 Number of cases diagnosed with HIV infection# by race/ethnicity, 2006-2010, San Francisco

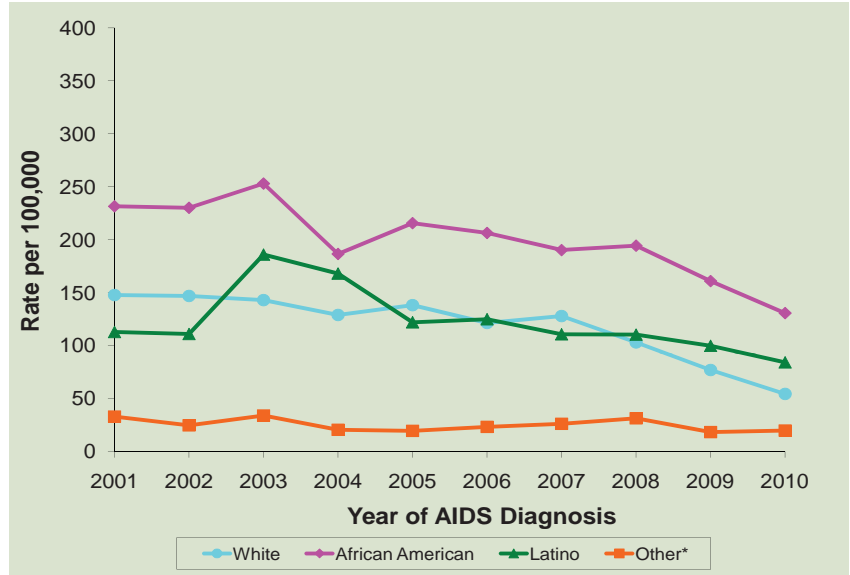


Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the "Other" race/ethnicity category include 73% Asian/Pacific Islanders, 5% Native Americans, and 18% Multi-race.

Since 2001, the annual AIDS rates among African American men have been higher than for men of all other race/ethnicity groups (Figure 2.3). The AIDS rates for white men and Latino men have been similar since 2005. In 2010, the rate of AIDS per 100,000 population was 131 among African American men, 54 for white men, and 84 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2010.

Figure 2.3 Annual rates[#] of male AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco

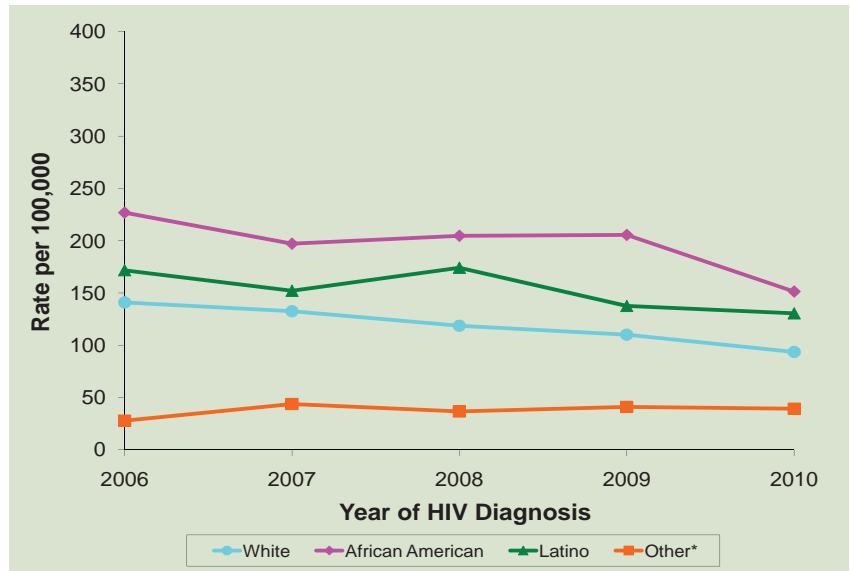


See Technical Notes “HIV/AIDS Case Rates.”

* Cases in the “Other” race/ethnicity category include 72% Asian/Pacific Islanders, 8% Native Americans, and 18% Multi-race.

Among men, the rates of cases diagnosed with HIV infection are highest in African Americans. There was a declining trend in rates of diagnosed HIV infection for white men during 2006 to 2010, while HIV rates for men of other race/ethnicity groups remained fairly level in this time period (Figure 2.4). In 2010, the rate of diagnosed HIV infection per 100,000 population was 151 among African American men, 130 among Latino men, and 94 among white men.

Figure 2.4 Annual rates[#] of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco

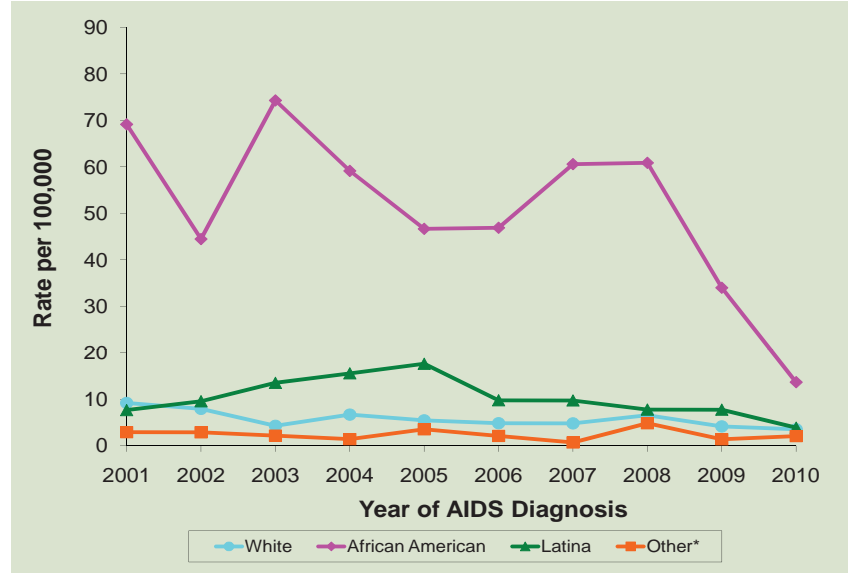


See Technical Notes “HIV/AIDS Case Rates.” Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the “Other” race/ethnicity category include 72% Asian/Pacific Islanders, 5% Native Americans, and 18% Multi-race.

AIDS rates among women are much lower than among men. Throughout the epidemic, African American women have been more affected by AIDS than women of other race/ethnicity groups (Figure 2.5). In 2010, the AIDS rate per 100,000 population was 14 for African American women, 4 for Latino women, 4 for white women, and 2 for women of other race/ethnicity groups.

Figure 2.5 Annual rates[#] of female AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco

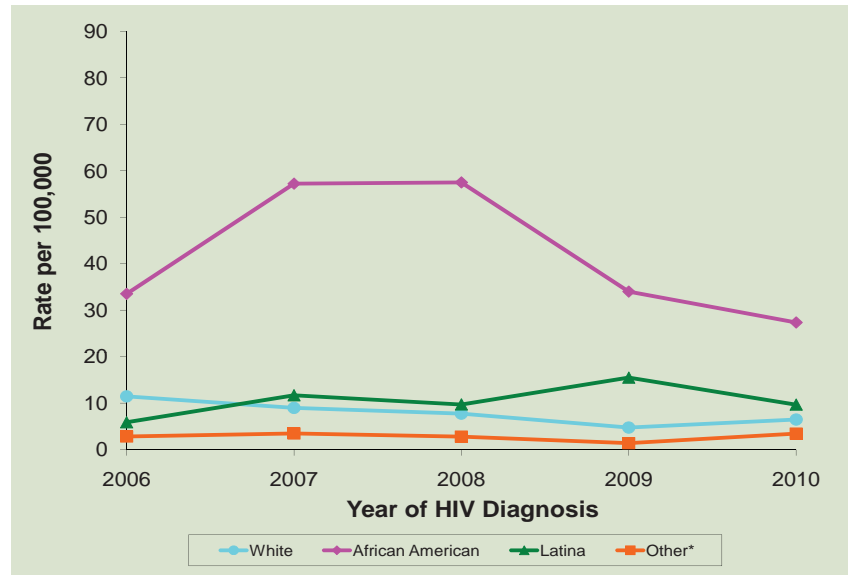


See Technical Notes "HIV/AIDS Case Rates."

* Cases in the "Other" race/ethnicity category include 71% Asian/Pacific Islanders, 12% Native Americans, and 18% Multi-race.

From 2006 to 2010, the rates of cases diagnosed with HIV were highest for African American women (Figure 2.6). Rates for African American women increased during 2007 and 2008, and rates for Latinas increased over the entire time period. Rates for white women decreased throughout the time period. In 2010, the rate of diagnosed HIV infection per 100,000 population was 27 for African American women, 10 for Latino women, 6 for white women, and 3 for women of other race/ethnicity groups.

Figure 2.6 Annual rates[#] of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco



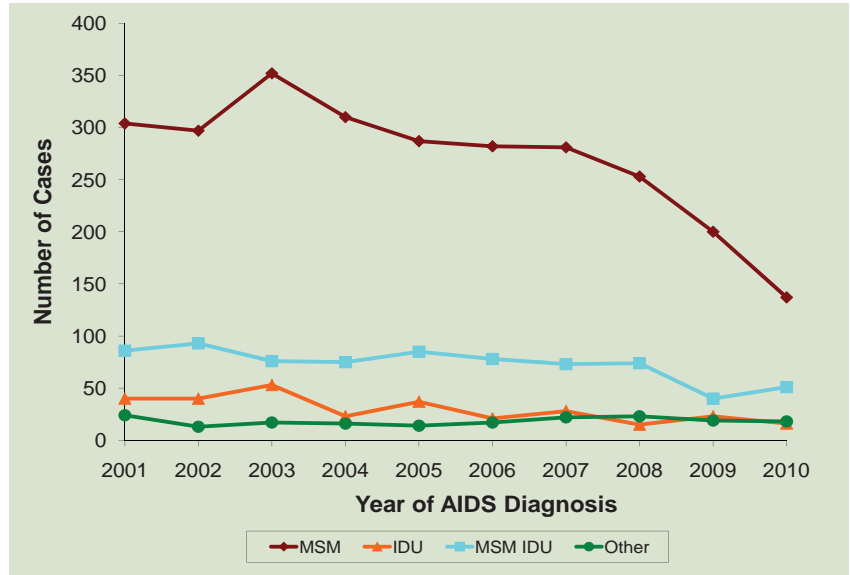
See Technical Notes "HIV/AIDS Case Rates." Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the "Other" race/ethnicity category include 75% Asian/Pacific Islanders, 4% Native Americans, and 15% Multi-race.

Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 2001 and 2010 (Figure 2.7). For MSM IDU the number of AIDS cases was fairly stable between 2003 and 2008. In 2010, 62% of male AIDS cases were MSM, 23% were MSM IDU, and 7% were heterosexual IDU.

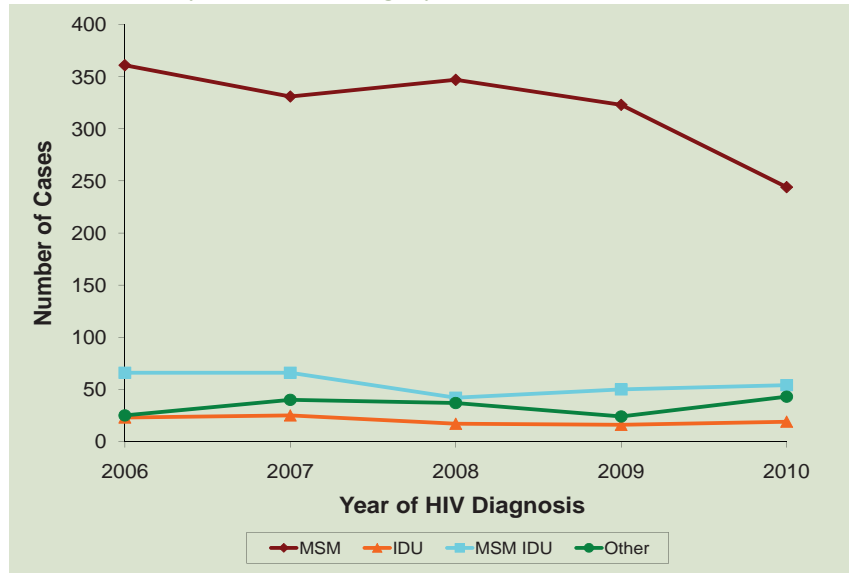
Figure 2.7 Number of male AIDS cases* by exposure category, 2001-2010, San Francisco



* Excludes male-to-female transgender AIDS cases.

In recent years, trends in the number of male cases diagnosed with HIV infection for most exposure categories were relatively stable (Figure 2.8). The number of MSM IDU HIV cases declined in 2008 and increased after that. In 2010, 68% of male HIV cases were MSM, 15% were MSM IDU, and 5% were heterosexual IDU.

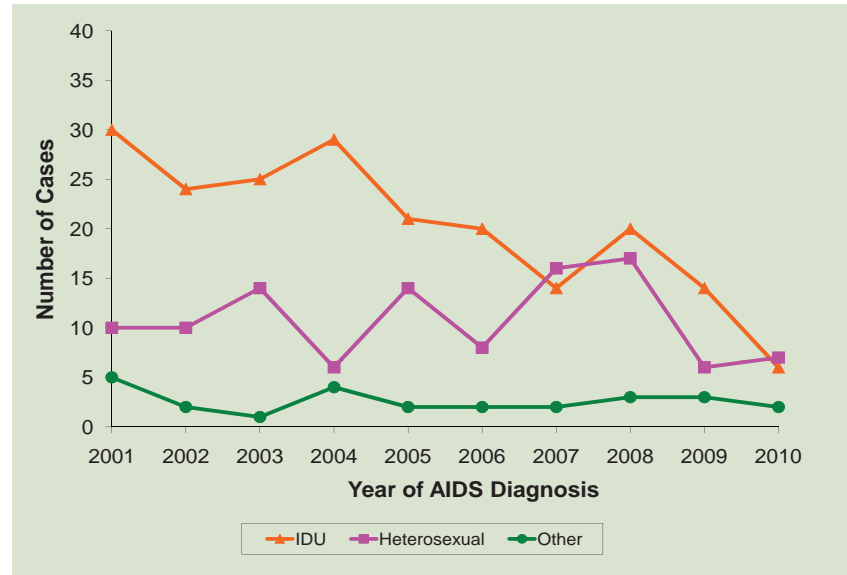
Figure 2.8 Number of male cases diagnosed with HIV infection* by exposure category, 2006-2010, San Francisco



* Excludes male-to-female transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Injection drug use is the predominant exposure category for female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 2001 and were similar to female heterosexual non-IDU cases in 2007 and 2008. Female AIDS cases due to heterosexual contact and other exposure categories have remained relatively stable. In 2010, 40% of female cases were due to injection drug use and 47% were attributed to heterosexual contact (Figure 2.9).

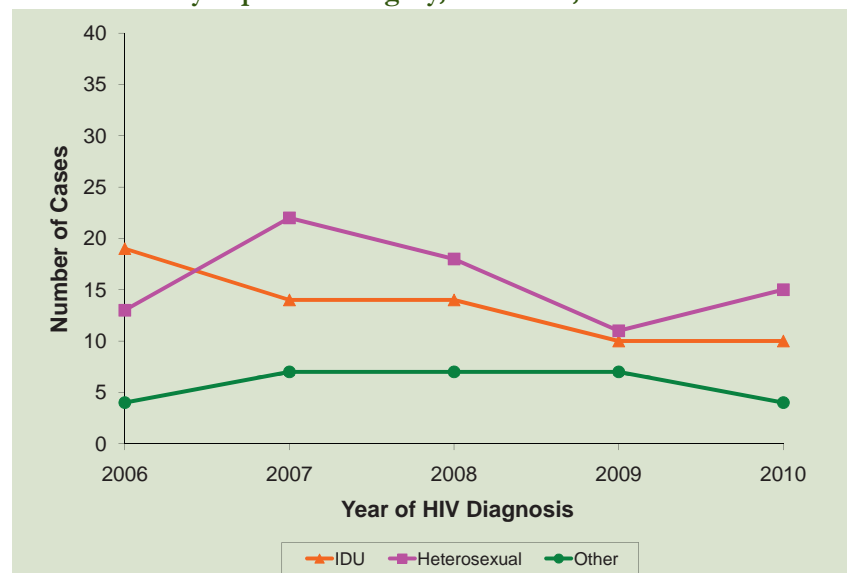
Figure 2.9 Number of female AIDS cases* by exposure category, 2001-2010, San Francisco



* Excludes female-to-male transgender AIDS cases.

When female cases diagnosed with HIV infection are examined, the number of female IDU cases and female cases due to heterosexual contact are similar (Figure 2.10). In 2007, the number of annual female cases diagnosed with HIV infection due to heterosexual contact overtook the number of female IDU cases. This is more similar to nationwide trends, where heterosexual contact is the leading exposure category for female HIV/AIDS cases.

Figure 2.10 Number of female cases diagnosed with HIV infection* by exposure category, 2006-2010, San Francisco



* Excludes female-to-male transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Age

Cumulatively, the largest number of men, women, and transwomen with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). Younger persons (under the age of 30) made up a larger proportion of female and transfemale AIDS cases than male AIDS cases.

For cases diagnosed in 2007-2010, there was an increase in the proportion of women diagnosed with AIDS in the 50+ year age group. The proportions of men diagnosed in the 20-29 years and over 40 year age groups increased from 1999 to 2010. The proportions of transfemale persons diagnosed in the over 40 year age group and in the under 30 year age group increased in 2007-2010 compared to the previous time period.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1999-2010, San Francisco

	1999-2002		2003-2006		2007-2010		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	3	(<1)	5	(<1)	4	(<1)	49	(<1)
20 - 29	146	(8)	140	(8)	151	(12)	3,047	(11)
30 - 39	789	(42)	581	(33)	355	(28)	12,038	(44)
40 - 49	646	(34)	647	(37)	482	(38)	8,648	(32)
50+	303	(16)	370	(21)	281	(22)	3,385	(12)
Male Subtotal	1,887	(100)	1,743	(100)	1,273	(100)	27,167	(100)
Female (Age in Years)								
0 - 19	4	(2)	0	(0)	1	(1)	24	(2)
20 - 29	24	(13)	19	(13)	11	(10)	166	(14)
30 - 39	64	(35)	43	(29)	28	(25)	457	(38)
40 - 49	60	(33)	55	(38)	28	(25)	361	(30)
50+	30	(16)	29	(20)	42	(38)	203	(17)
Female Subtotal	182	(100)	146	(100)	110	(100)	1,211	(100)
Transfemale* (Age in Years)								
0 - 29	11	(15)	7	(10)	12	(29)	97	(23)
30 - 39	34	(46)	32	(48)	9	(22)	183	(44)
40+	29	(39)	28	(42)	20	(48)	135	(32)
Transfemale Subtotal	74	(100)	67	(100)	41	(100)	415	(100)

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

Table 2.2 shows cases diagnosed with HIV infection by the age at HIV diagnosis and year of HIV diagnosis. The largest proportion of males was diagnosed with HIV between the ages of 30 and 39 years. In 2010, the proportions of male cases diagnosed with HIV in the 20-29 years group, 30-39 years group, and 40-49 years group were very similar. For female cases, the proportion diagnosed in the 50+ year age group increased in this time period. In 2009 and 2010, the majority of female cases were diagnosed in the over 40 year age groups.

Although the number of transfemale persons diagnosed each year is small, transfemale cases diagnosed with HIV infection appear younger than male and female HIV and AIDS cases at the time of HIV diagnosis.

Table 2.2 Cases diagnosed with HIV infection* by gender and age at diagnosis, diagnosed 2007-2010, San Francisco

	2007		2008		2009		2010	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	8	(2)	10	(2)	4	(1)	4	(1)
20 - 29	121	(26)	98	(22)	98	(24)	100	(28)
30 - 39	169	(37)	165	(37)	126	(31)	108	(30)
40 - 49	112	(24)	128	(29)	121	(29)	102	(28)
50+	52	(11)	42	(9)	64	(15)	46	(13)
Male Subtotal	462	(100)	443	(100)	413	(100)	360	(100)
Female (Age in Years)								
0 - 19	0	(0)	2	(5)	0	(0)	0	(0)
20 - 29	8	(19)	12	(31)	5	(18)	5	(17)
30 - 39	13	(30)	11	(28)	7	(25)	4	(14)
40 - 49	17	(40)	9	(23)	3	(11)	11	(38)
50+	5	(12)	5	(13)	13	(46)	9	(31)
Female Subtotal	43	(100)	39	(100)	28	(100)	29	(100)
Transfemale[#] (Age in Years)								
0 - 29	8	(38)	6	(60)	7	(37)	5	(50)
30+	13	(62)	4	(40)	12	(63)	5	(50)
Transfemale Subtotal	21	(100)	10	(100)	19	(100)	10	(100)

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

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

3

Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS continues to increase due to ongoing incidence of HIV combined with an increase in survival after AIDS 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, 2010, 15,861 San Francisco residents were living with HIV/AIDS (Table 3.1). Demographic and risk characteristics of persons living with HIV/AIDS remained mostly stable between 2007 and 2010; the largest numbers are white, age 50+ years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 37% to 45% between 2007 and 2010. This increase most likely reflects improved survival from use of antiretroviral therapy.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2007-2010*, San Francisco

	2007		2008		2009		2010	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	13,964	(92)	14,186	(92)	14,378	(92)	14,597	(92)
Female	880	(6)	890	(6)	899	(6)	911	(6)
Transfemale [#]	343	(2)	341	(2)	353	(2)	353	(2)
Race/Ethnicity								
White	9,677	(64)	9,768	(63)	9,837	(63)	9,943	(63)
African American	2,099	(14)	2,116	(14)	2,138	(14)	2,160	(14)
Latino	2,348	(15)	2,429	(16)	2,502	(16)	2,563	(16)
Asian/Pacific Islander	722	(5)	757	(5)	791	(5)	825	(5)
Native American	95	(1)	95	(1)	96	(1)	99	(1)
Other/Unknown	246	(2)	252	(2)	266	(2)	271	(2)
Age in Years (at end of each year)								
0 - 19	36	(<1)	34	(<1)	26	(<1)	26	(<1)
20 - 29	635	(4)	632	(4)	624	(4)	595	(4)
30 - 39	2,740	(18)	2,582	(17)	2,371	(15)	2,163	(14)
40 - 49	6,153	(41)	6,081	(39)	5,996	(38)	5,895	(37)
50+	5,623	(37)	6,088	(39)	6,613	(42)	7,182	(45)
Exposure Category								
MSM	10,956	(72)	11,176	(72)	11,369	(73)	11,535	(73)
IDU	1,151	(8)	1,137	(7)	1,135	(7)	1,142	(7)
MSM IDU	2,243	(15)	2,220	(14)	2,215	(14)	2,227	(14)
Heterosexual	421	(3)	447	(3)	454	(3)	473	(3)
Transfusion/Hemophilia	33	(<1)	33	(<1)	32	(<1)	30	(<1)
Other/Unidentified	383	(3)	404	(3)	425	(3)	454	(3)
Total	15,187		15,417		15,630		15,861	

* Persons living with HIV/AIDS at the end of each year.

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

Person Living with HIV/AIDS

As of December 31, 2010, a total of 9,682 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transfemale. Among men, the majority of cases were white. MSM accounted for the largest proportion of living male AIDS cases within all racial/ethnic groups.

For the first time, in 2010 the majority of person living with AIDS were over 50 years old (52%). More than half of white and African American living male AIDS cases were age 50 years and over. By comparison, Latino, Asian Pacific Islander, and Native American men living with AIDS were younger, with the majority between the ages of 40 and 49 years old.

Among women living with AIDS, African American was the largest racial/ethnic group (43%) followed by white (30%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases were age 50 years and over.

Table 3.2 Persons living with AIDS* by gender, exposure category, age and race/ethnicity, December 2010, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number [#]
Male									
<i>Exposure category</i>									
MSM	4,766	(81)	541	(52)	1,158	(81)	379	(80)	6,892
IDU	174	(3)	211	(20)	51	(4)	21	(4)	461
MSM IDU	910	(15)	217	(21)	164	(11)	52	(11)	1,363
Heterosexual	16	(<1)	42	(4)	33	(2)	8	(2)	101
Other	4	(<1)	4	(<1)	4	(<1)	6	(1)	19
No reported risk	33	(1)	28	(3)	22	(2)	8	(2)	92
<i>Age in Years (at end of 2010)</i>									
<13	0	(0)	0	(0)	1	(0)	0	(0)	2
13 - 19	0	(0)	1	(0)	0	(0)	0	(0)	1
20 - 29	49	(1)	16	(2)	48	(3)	15	(3)	131
30 - 39	393	(7)	82	(8)	217	(15)	73	(15)	785
40 - 49	2,008	(34)	373	(36)	617	(43)	205	(43)	3,235
50+	3,453	(58)	571	(55)	549	(38)	181	(38)	4,774
Male Subtotal	5,903		1,043		1,432		474		8,928
Female									
<i>Exposure category</i>									
IDU	106	(64)	156	(66)	37	(38)	13	(29)	318
Heterosexual	45	(27)	66	(28)	49	(51)	25	(56)	185
Other	5	(3)	7	(3)	6	(6)	3	(7)	21
No reported risk	9	(5)	9	(4)	5	(5)	4	(9)	28
<i>Age in Years (at end of 2010)</i>									
13 - 19	0	(0)	2	(1)	3	(3)	1	(2)	6
20 - 29	3	(2)	8	(3)	5	(5)	2	(4)	18
30 - 39	18	(11)	27	(11)	18	(19)	10	(22)	75
40 - 49	71	(43)	67	(28)	30	(31)	17	(38)	187
50+	73	(44)	134	(56)	41	(42)	15	(33)	266
Female Subtotal	165		238		97		45		552
Transfemale[‡]	46		68		61		25		202
Total	6,114		1,349		1,590		544		9,682

* Includes persons who were San Francisco residents at time of HIV diagnosis and progressed to AIDS while they were a resident in another jurisdiction.

Includes persons with multiple race or whose race/ethnicity information is not available.

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

As of December 31, 2010, 6,179 living HIV non-AIDS cases (persons living with HIV who had not developed AIDS) had been diagnosed in San Francisco (Table 3.3). Demographic and risk characteristics for living HIV non-AIDS cases were similar to living AIDS cases. Ninety-two percent were male, 6% were female, and 2% were transfemale. The majority of living male HIV non-AIDS cases were white and MSM. The majority of living female HIV non-AIDS cases were African American and IDU. Among men, persons between 40-49 years old accounted for the largest number of living HIV cases. Among women, persons between 40-49 years old and 50 years and over accounted for similar proportions of living HIV cases.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2010, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number*
Male									
<i>Exposure Category</i>									
MSM	3,020	(82)	357	(59)	718	(82)	282	(85)	4,467
IDU	85	(2)	93	(15)	17	(2)	5	(2)	202
MSM IDU	483	(13)	84	(14)	80	(9)	34	(10)	699
Heterosexual	12	(<1)	26	(4)	13	(1)	1	(0)	53
Other	3	(<1)	2	(<1)	3	(<1)	1	(0)	9
No reported risk	93	(3)	45	(7)	40	(5)	8	(2)	239
<i>Age in Years (at end of 2010)</i>									
13 - 19	3	(<1)	5	(1)	1	(0)	0	(0)	9
20 - 29	174	(5)	59	(10)	94	(11)	38	(11)	378
30 - 39	622	(17)	105	(17)	255	(29)	116	(35)	1,147
40 - 49	1,513	(41)	176	(29)	358	(41)	127	(38)	2,231
50+	1,384	(37)	262	(43)	163	(19)	50	(15)	1,904
Male Subtotal	3,696		607		871		331		5,669
Female									
<i>Exposure Category</i>									
IDU	58	(56)	66	(44)	20	(34)	8	(27)	158
Heterosexual	24	(23)	58	(39)	23	(39)	17	(57)	128
Other	3	(3)	1	(1)	3	(5)	0	(0)	9
No reported risk	18	(17)	24	(16)	13	(22)	5	(17)	64
<i>Age in Years (at end of 2010)</i>									
<13	0	(0)	1	(1)	2	(3)	0	(0)	3
13 - 19	1	(1)	0	(0)	2	(3)	0	(0)	5
20 - 29	7	(7)	16	(11)	11	(19)	2	(7)	37
30 - 39	27	(26)	15	(10)	9	(15)	6	(20)	60
40 - 49	41	(40)	45	(30)	18	(31)	11	(37)	120
50+	27	(26)	72	(48)	17	(29)	11	(37)	134
Female Subtotal	103		149		59		30		359
Transfemale[#]	30		55		43		19		151
Total	3,829		811		973		380		6,179

* Includes persons with multiple race or whose race/ethnicity information is not available.

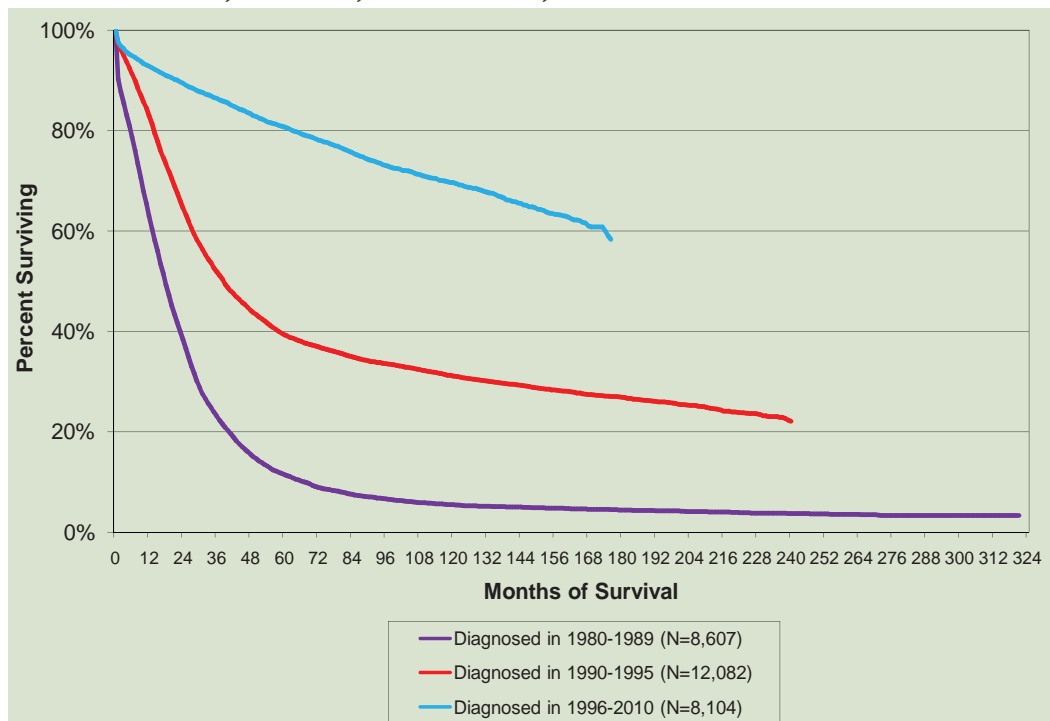
Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

4

Survival among Persons with AIDS

The Kaplan-Meier survival curves in Figure 4.1 demonstrate that survival improved for San Francisco AIDS cases between 1996 and 2010, compared to persons diagnosed in earlier time periods. Survival was poor for persons diagnosed in the first ten years of the AIDS epidemic (1980-1989) with 50% cases surviving 18 months (median survival time) after AIDS diagnosis. Between 1990 and 1995, survival improved; median survival time was 38 months. Approximately 58% of persons diagnosed with AIDS between 1996 and 2010 are still alive as of December 31, 2010. Improved survival among persons diagnosed with AIDS after 1995 is attributed to more effective antiretroviral therapies.

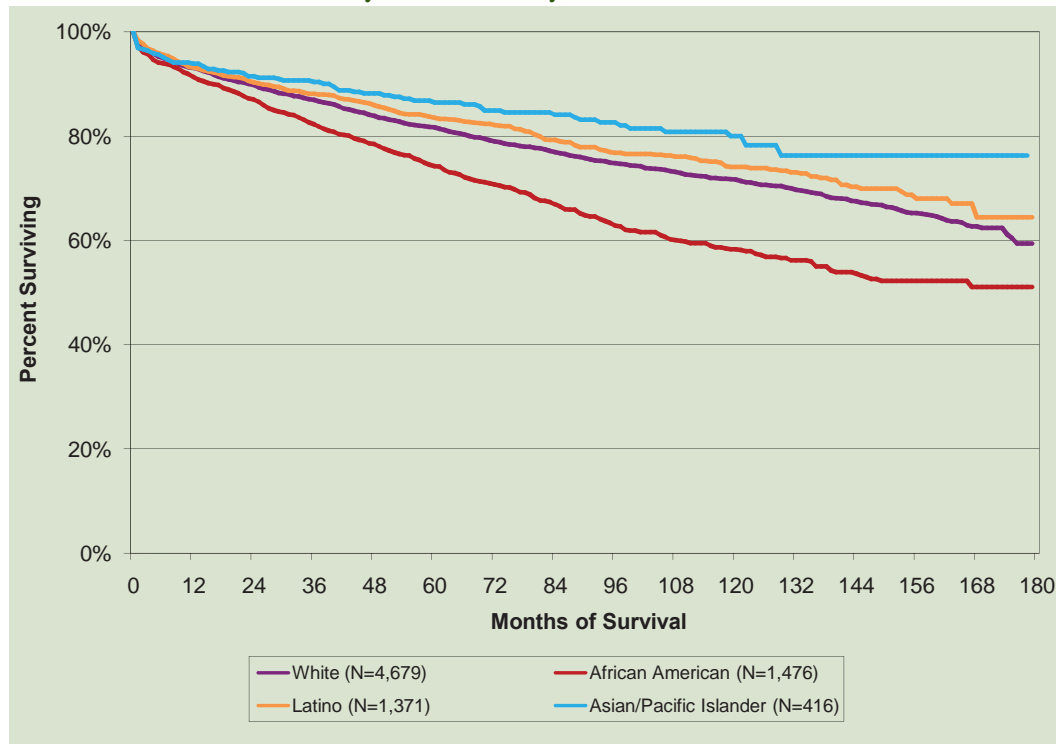
Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2010, San Francisco



* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other race/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2010, the percent of African Americans surviving 60 months (5 years) after AIDS was 74%, compared to 82% for whites, 84% for Latinos, and 86% for Asian/Pacific Islanders.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2010 by race/ethnicity, San Francisco



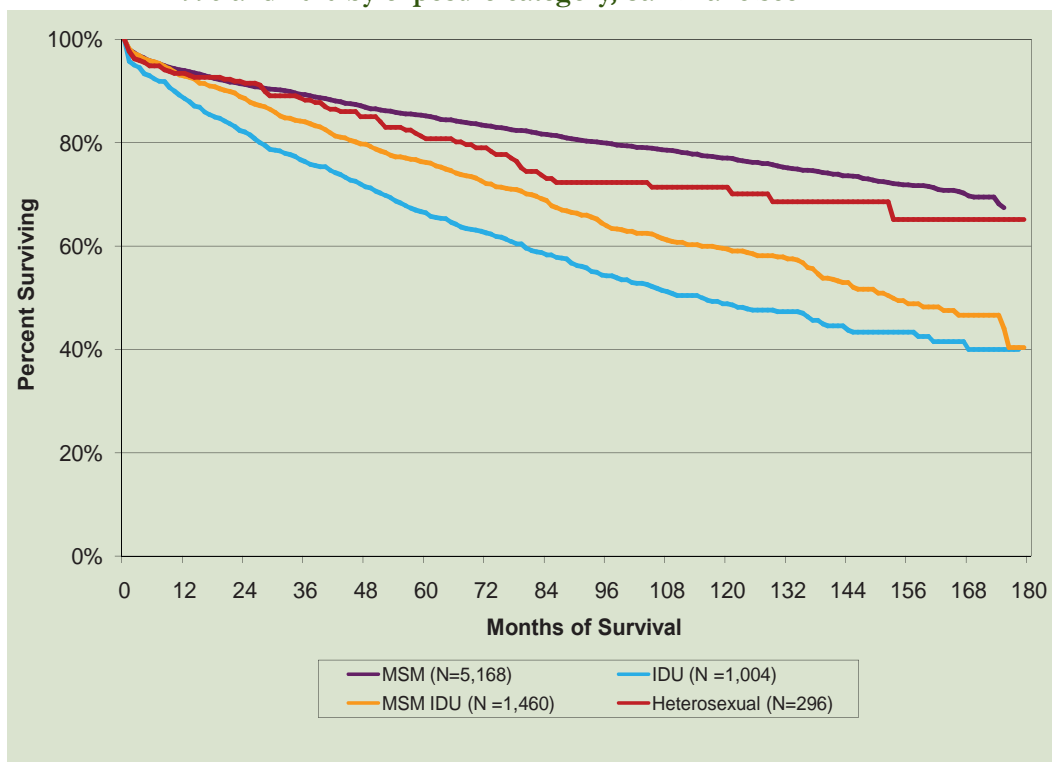
* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

Survival after AIDS diagnosis has been better for MSM and heterosexuals compared to MSM IDU and heterosexual IDU. For AIDS cases diagnosed in 1996 to 2010, the 5-year (60 months) survival was 85% for MSM, 81% for heterosexuals, 76% for MSM IDU, and 66% for heterosexual IDU (Figure 4.3).

Worse survival among IDU partly reflects higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

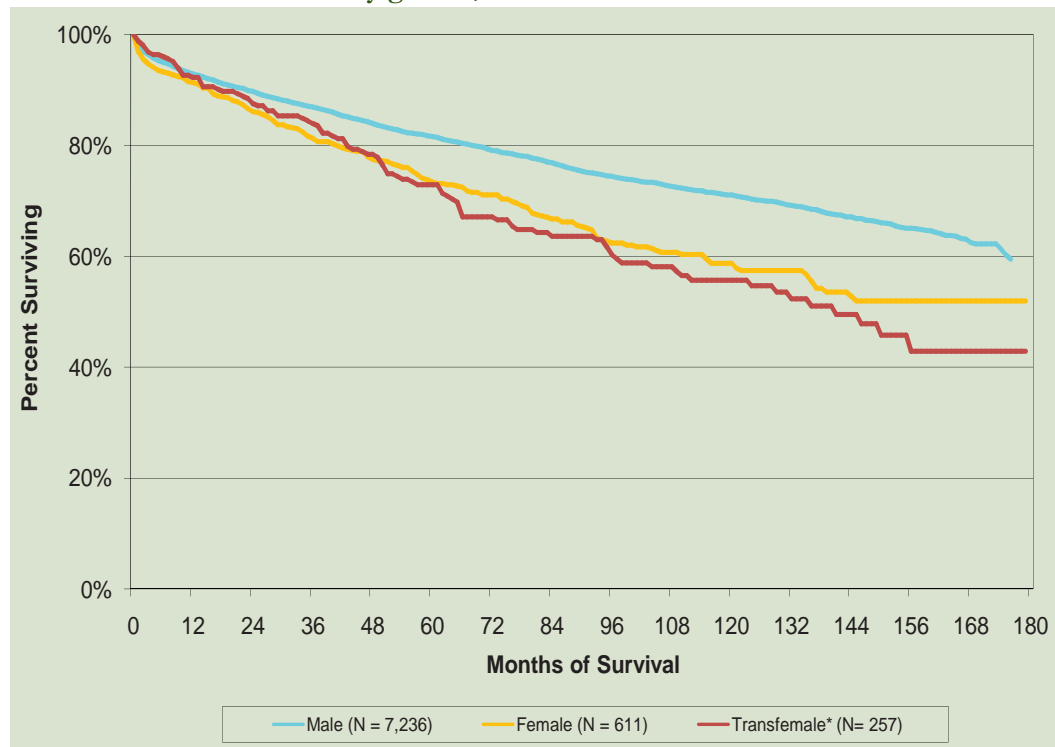
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2010 by exposure category, San Francisco



* See Technical Notes "AIDS Survival."

By gender, male AIDS cases have better survival than female and transfemale AIDS cases. The Kaplan-Meier curves show that female and transfemale AIDS cases have similar survival (Figure 4.4). The 5-year (60 months) survival was 82% for men, 73% for women and 73% for transfemale persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies among female and transfemale AIDS cases.

Figure 4.4 Kaplan-Meier survival[#] curves for persons diagnosed with AIDS between 1996 and 2010 by gender, San Francisco



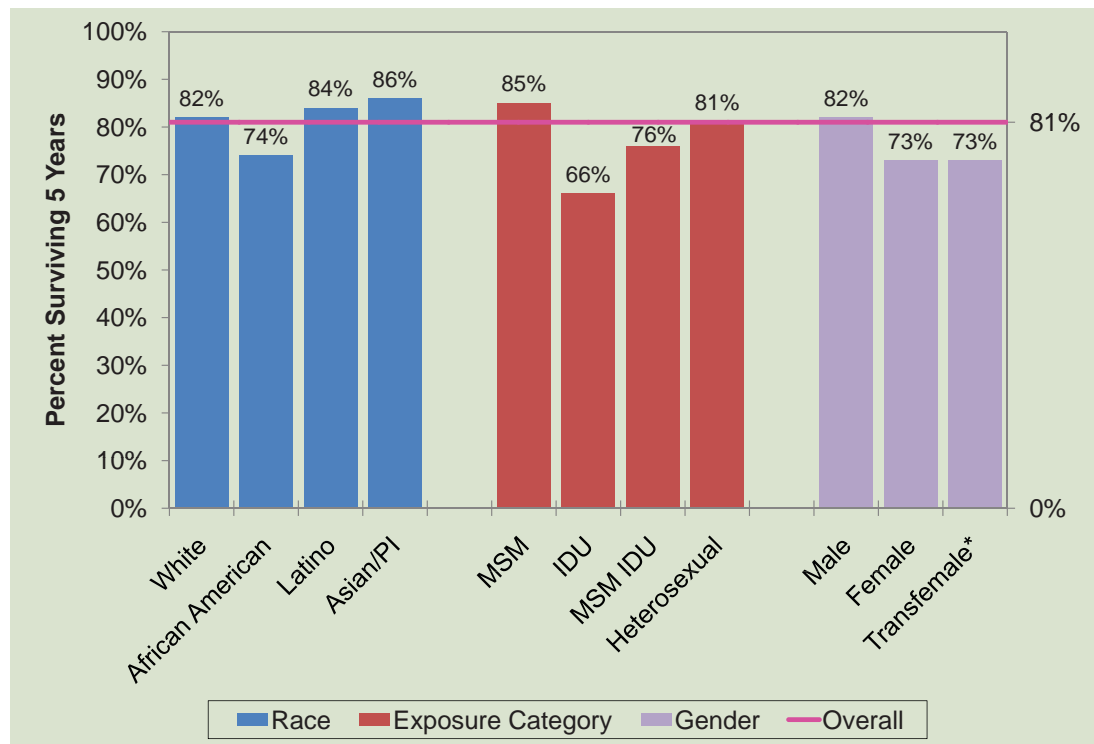
[#] See Technical Notes “AIDS Survival.”

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

Survival among Persons with AIDS

The overall five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009 is 81% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transfemale persons with AIDS have lower proportions surviving five years compared to other groups.

Figure 4.5 Proportion surviving five years after AIDS for persons diagnosed with AIDS between 1996 and 2010 by race/ethnicity, exposure category, and gender, San Francisco



* 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/AIDS Mortality

HIV/AIDS surveillance data

As of December 31, 2010, a total of 19,341 deaths have occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths for recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2007 and 2008. Cumulatively, numbers of deaths in the 30-39 year old age group and 40-49 year old age group are similar. However, in recent years, the largest number of deaths has shifted to the 50-59 year old age group.

Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2007-2010, San Francisco

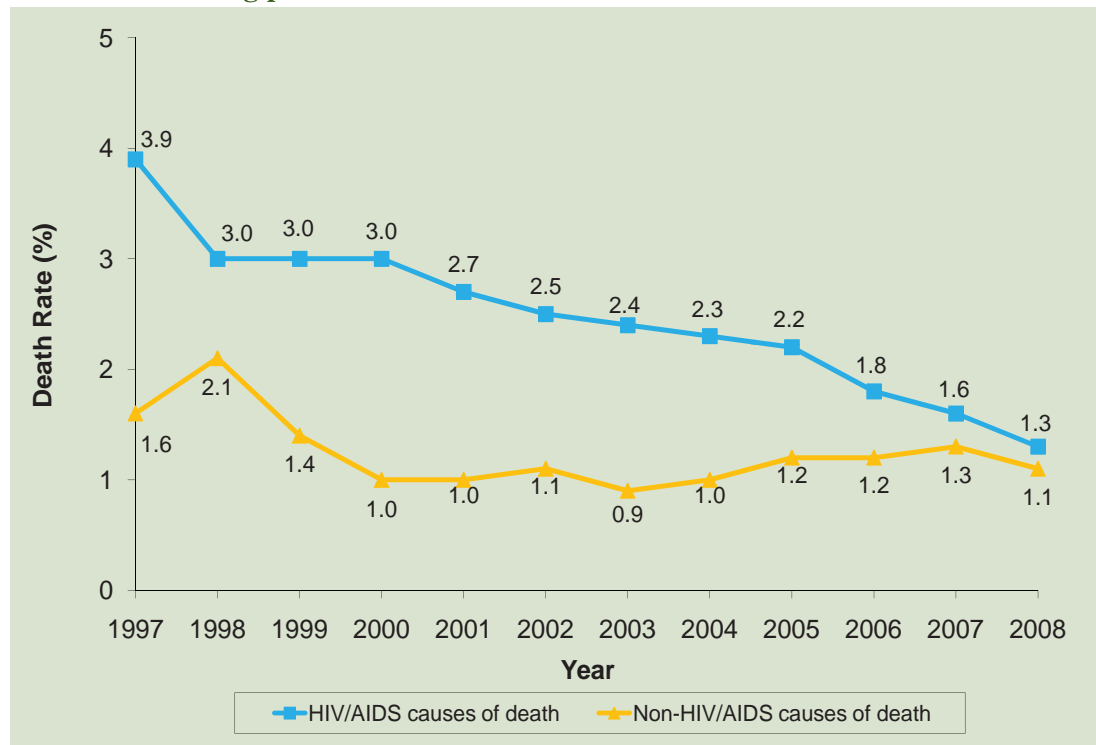
	Year of Death*				Cumulative Totals as of 12/31/2010				
	2007		2008			2009		2010	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	
Gender									
Male	236	(88)	192	(84)	188	(92)	115	(85)	18,446
Female	19	(7)	24	(11)	11	(5)	13	(10)	677
Transfemale [#]	14	(5)	12	(5)	6	(3)	8	(6)	218
Race/Ethnicity									
White	162	(60)	141	(62)	139	(68)	73	(54)	14,328
African American	58	(22)	53	(23)	37	(18)	28	(21)	2,331
Latino	36	(13)	23	(10)	19	(9)	20	(15)	1,988
Other	13	(5)	11	(5)	10	(5)	15	(11)	694
Exposure Category									
MSM	143	(53)	117	(51)	119	(58)	65	(48)	14,427
IDU	45	(17)	37	(16)	22	(11)	17	(13)	1,419
MSM IDU	73	(27)	62	(27)	55	(27)	41	(30)	3,017
Heterosexual	7	(3)	5	(2)	6	(3)	8	(6)	195
Other/Unidentified	1	(0)	7	(3)	3	(1)	5	(4)	283
Age at Death (years)									
0 - 29	5	(2)	4	(2)	4	(2)	3	(2)	1,077
30 - 39	24	(9)	15	(7)	18	(9)	6	(4)	7,181
40 - 49	91	(34)	83	(36)	59	(29)	33	(24)	7,236
50 - 59	87	(32)	83	(36)	72	(35)	56	(41)	2,791
60+	62	(23)	43	(19)	52	(25)	38	(28)	1,056
Total	269	(100)	228	(100)	205	(100)	136	(100)	19,341

* Data in recent years are incomplete due to reporting delay. 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 2008.

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 death rates in persons with AIDS was examined by the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 3.9 per 100 persons with AIDS in 1997 to 1.3 per 100 persons with AIDS in 2008 (Figure 5.1). For non-HIV/AIDS-related causes of death, the trend shows a slight increase beginning with 0.9 per 100 persons in 2003 to 1.3 per 100 persons in 2007.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1997-2008, San Francisco



* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for “Causes of Death.”

The proportion of deaths in which HIV/AIDS was listed as the underlying cause of death decreased from 68% of AIDS deaths occurring in 1997-2000 to 58% in 2005-2008 (Table 5.2). Other frequently occurring underlying causes of death in 2005-2008 include non-AIDS cancer (10%), heart disease (7%), drug overdose (5.3%), suicide (3.2%), and mental disorders due to substance use (2.6%). The proportions of these non-HIV/AIDS-related causes increased over the three time periods.

Table 5.2 Underlying causes of death among persons with AIDS*, 1997-2008, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1997-2000		2001-2004		2005-2008	
	N=1,472		N= 1,194		N= 1,071	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	1,004	(68.2)	847	(70.9)	625	(58.4)
Non-AIDS cancer	86	(5.8)	85	(7.1)	107	(10.0)
Lung cancer	22	(1.5)	26	(2.2)	38	(3.5)
Liver cancer	16	(1.1)	12	(1.0)	21	(2.0)
Anal cancer	6	(0.4)	5	(0.4)	6	(0.6)
Heart disease	61	(4.1)	62	(5.2)	75	(7.0)
Coronary heart disease	28	(1.9)	43	(3.6)	34	(3.2)
Cardiomyopathy	12	(0.8)	5	(0.4)	7	(0.7)
Drug overdose	46	(3.1)	28	(2.3)	57	(5.3)
Suicide	28	(1.9)	20	(1.7)	34	(3.2)
Mental disorders due to substance use	9	(0.6)	19	(1.6)	28	(2.6)
Chronic obstructive lung disease	13	(0.9)	18	(1.5)	20	(1.9)
Liver disease	25	(1.7)	30	(2.5)	19	(1.8)
Liver cirrhosis	11	(0.7)	15	(1.3)	10	(0.9)
Alcoholic liver disease	12	(0.8)	11	(0.9)	8	(0.7)
Viral hepatitis	44	(3.0)	7	(0.6)	8	(0.7)
Renal disease	5	(0.3)	1	(0.1)	7	(0.7)
Cerebrovascular disease	13	(0.9)	12	(1.0)	5	(0.5)
Septicemia	7	(0.5)	4	(0.3)	3	(0.3)
Pancreatitis	7	(0.5)	3	(0.3)	1	(0.1)
Pneumonia	14	(1.0)	0	(0.0)	0	(0.0)
Aspergillosis	16	(1.1)	0	(0.0)	0	(0.0)

* Deceased AIDS cases without cause of death information are not represented in this table.

See Technical Notes "Causes of Death."

Table 5.3 shows both underlying and contributory causes of death among persons with AIDS. In the first two time periods, the proportion of deaths with HIV/AIDS-related causes was stable at 86%, with the proportion falling to 72% of AIDS deaths in 2005-2008. The relative contribution of several causes of death appeared level between time periods 2001-2004 and 2005-2008 (coronary heart disease, anal cancer, cerebrovascular disease, aspergillosis). Deaths due to non-AIDS cancer showed the largest percentage increase between recent time periods 2001-2004 and 2005-2008. The proportions of deaths related to substance abuse (drug overdose and mental disorders due to substance use) also increased.

Table 5.3 Multiple causes of death among persons with AIDS*, 1997-2008, San Francisco

Multiple Causes of Death [#]	Year of Death					
	1997-2000		2001-2004		2005-2008	
	N=1,472		N= 1,194		N= 1,071	
	No.	(%)	No.	(%)	No.	(%)
HIV/AIDS	1,258	(85.5)	1,028	(86.1)	769	(71.8)
Heart disease	268	(18.2)	247	(20.7)	187	(17.5)
Coronary heart disease	45	(3.1)	71	(5.9)	62	(5.8)
Cardiomyopathy	33	(2.2)	25	(2.1)	13	(1.2)
Non-AIDS cancer	134	(9.1)	121	(10.1)	147	(13.7)
Lung cancer	25	(1.7)	29	(2.4)	39	(3.6)
Liver cancer	21	(1.4)	14	(1.2)	22	(2.1)
Anal cancer	9	(0.6)	9	(0.8)	8	(0.7)
Liver disease	181	(12.3)	194	(16.2)	109	(10.2)
Liver cirrhosis	61	(4.1)	85	(7.1)	53	(4.9)
Alcoholic liver disease	17	(1.2)	14	(1.2)	9	(0.8)
Pneumonia	213	(14.5)	179	(15.0)	103	(9.6)
Viral hepatitis	129	(8.8)	178	(14.9)	100	(9.3)
Renal disease	96	(6.5)	116	(9.7)	95	(8.9)
Septicemia	134	(9.1)	129	(10.8)	92	(8.6)
Mental disorders due to substance use	54	(3.7)	76	(6.4)	89	(8.3)
Drug overdose	59	(4.0)	34	(2.8)	65	(6.1)
Chronic obstructive lung disease	42	(2.9)	58	(4.9)	48	(4.5)
Suicide	28	(1.9)	20	(1.7)	34	(3.2)
Cerebrovascular disease	39	(2.6)	32	(2.7)	29	(2.7)
Aspergillosis	33	(2.2)	7	(0.6)	6	(0.6)

* Deceased AIDS cases without cause of death information are not represented in this table.

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

Since 1997, the median age at death among persons with AIDS has increased over time, from 44 years in 1997-2000 to 50 years in 2005-2008 (Table 5.4). For select, frequent underlying causes of death among persons with AIDS, the median age at death increased across the three time periods for all causes of death. The increase in survival, attributed to improved treatment for HIV disease, contributes to the increases in the median age at death for both HIV-related and non-HIV-related causes by virtue of persons living long enough to acquire other conditions.

Table 5.4 Median age at death among persons with AIDS by underlying cause of death, 1997-2008, San Francisco

Underlying Cause of Death*	Year of Death		
	1997-2000	2001-2004	2005-2008
	Median Age (Years)		
HIV/AIDS	44.0	46.0	49.0
Non-AIDS cancer	49.0	53.0	55.0
Heart disease	49.0	51.0	56.0
Drug overdose	42.0	46.5	48.0
Suicide	42.0	44.0	48.5
All deaths	44.0	47.0	50.0

* See Technical Notes "Causes of Death."

HIV/AIDS-related deaths were the leading cause of death for AIDS cases in all age groups from 1997-2008 (Table 5.5). From 2001-2004, all age groups except those aged 50-59 experienced the highest proportions of HIV/AIDS deaths compared to the other time periods. Persons aged 50 and over have seen higher numbers of HIV/AIDS deaths over time as people are living longer. Despite these increases, the proportion of deaths attributable to HIV/AIDS has decreased with time. Non-AIDS cancer and heart disease continue to trail HIV/AIDS as the two leading causes of death among those over 50. The proportion of HIV/AIDS deaths has declined with older age. Drug overdose and suicide contribute to higher proportion of deaths over time among those under the age of 40.

Table 5.5 Leading underlying causes of death among persons with AIDS by age group, 1997-2008, San Francisco

Age at Death (Years)	Year of Death					
	1997-2000		2001-2004		2005-2008	
	Underlying Cause	Number (%)	Underlying Cause	Number (%)	Underlying Cause	Number (%)
Under 30	1. HIV/AIDS	31 (73.8)	1. HIV/AIDS	17 (89.5)	1. HIV/AIDS	9 (75.0)
	2. Suicide	2 (4.8)	2. Suicide	2 (10.5)	2. Suicide	2 (16.7)
	2. Pneumonia	2 (4.8)				
30-39	1. HIV/AIDS	288 (72.9)	1. HIV/AIDS	186 (78.2)	1. HIV/AIDS	67 (62.6)
	2. Drug overdose	16 (4.1)	2. Heart disease	8 (3.4)	2. Drug overdose	10 (9.4)
	3. Heart disease	13 (3.3)	3. Drug overdose	6 (2.5)	3. Suicide	6 (5.6)
	4. Non-AIDS cancer	12 (3.0)	3. Suicide	6 (2.5)	4. Mental disorders*	4 (3.7)
	5. Suicide	9 (2.3)	5. Non-AIDS cancer	5 (2.1)	4. Non-AIDS cancer	4 (3.7)
40-49	1. HIV/AIDS	443 (67.9)	1. HIV/AIDS	380 (75.0)	1. HIV/AIDS	264 (63.8)
	2. Non-AIDS cancer	36 (5.5)	2. Heart disease	21 (4.1)	2. Non-AIDS cancer	34 (8.2)
	3. Viral hepatitis	25 (3.8)	3. Non-AIDS cancer	20 (3.9)	3. Drug overdose	24 (5.8)
	4. Drug overdose	24 (3.7)	4. Drug overdose	17 (3.4)	4. Heart disease	16 (3.9)
	5. Heart disease	20 (3.1)	5. Liver disease	14 (2.8)	5. Mental disorders*	15 (3.6)
50-59	1. HIV/AIDS	188 (65.7)	1. HIV/AIDS	185 (60.3)	1. HIV/AIDS	200 (56.8)
	2. Non-AIDS cancer	26 (9.1)	2. Non-AIDS cancer	41 (13.4)	2. Non-AIDS cancer	35 (9.9)
	3. Heart disease	18 (6.3)	3. Heart disease	21 (6.8)	3. Heart disease	33 (9.4)
	4. Viral hepatitis	12 (4.2)	4. Liver disease	11 (3.6)	4. Drug overdose	20 (5.7)
	5. Liver disease	5 (1.8)	5. COPD [#]	10 (3.3)	5. COPD [#]	12 (3.4)
				5. Suicide	12 (3.4)	
60 and over	1. HIV/AIDS	54 (55.7)	1. HIV/AIDS	78 (63.4)	1. HIV/AIDS	85 (45.5)
	2. Non-AIDS cancer	11 (11.3)	2. Non-AIDS cancer	19 (15.5)	2. Non-AIDS cancer	34 (18.2)
	3. Heart disease	10 (10.3)	3. Heart disease	12 (9.8)	3. Heart disease	23 (12.3)
	4. COPD [#]	6 (6.2)	4. COPD [#]	5 (4.1)	4. Liver disease	4 (2.1)
	5. Suicide	2 (2.1)	5. Cerebrovascular disease	3 (2.4)	5. Accident	3 (1.6)
	5. Drug overdose	2 (2.1)			5. COPD [#]	3 (1.6)
	5. Cerebrovascular disease	2 (2.1)			5. Drug overdose	3 (1.6)
					5. Viral hepatitis	3 (1.6)
				5. Renal disease	3 (1.6)	

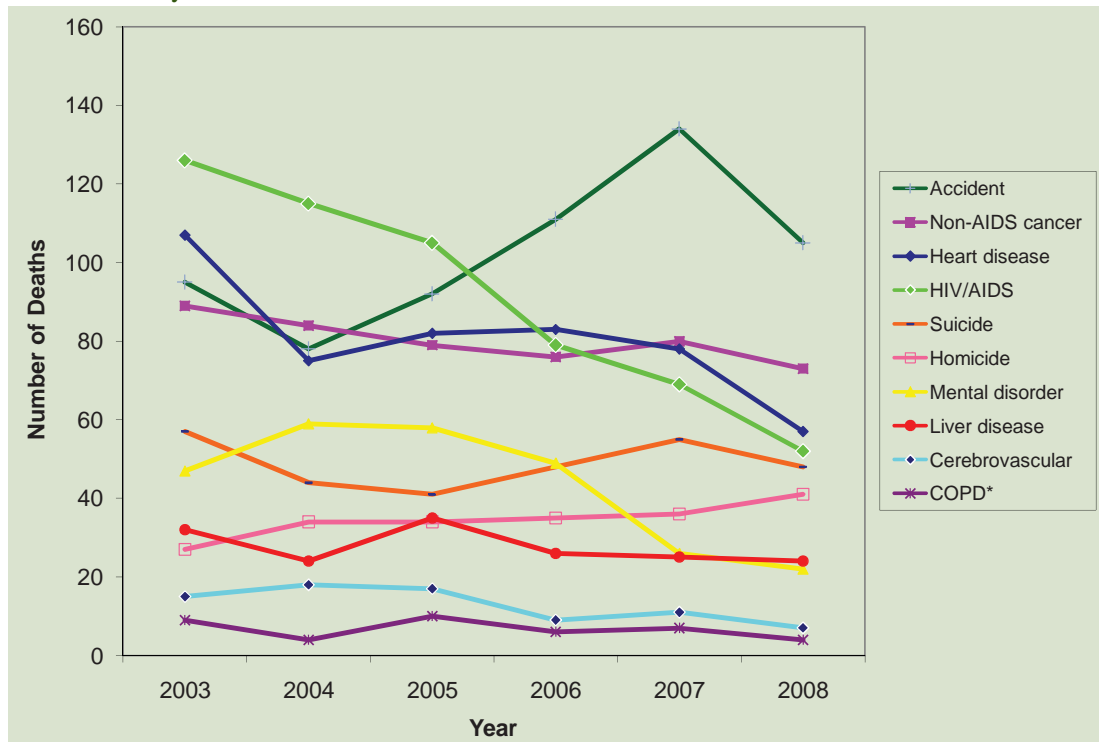
* Mental disorders due to substance use.

COPD: Chronic obstructive pulmonary disease.

Vital statistics death data

We examined data obtained from the California Vital Statistics Death Files for San Francisco residents who died from 2003 to 2008 to compare the number of deaths and death rates by gender, race/ethnicity and age. The leading cause of death was determined using ICD-10 codes representing the underlying cause of death, which is consistent with the National Vital Statistics Reports. Until 2005, HIV/AIDS had been the leading cause of death for men aged 25-54 years in San Francisco (Figure 5.2). However, accidents surpassed HIV/AIDS to become the leading cause of death from 2006 to 2008. Other leading causes of death that have increased over HIV/AIDS in recent years were heart disease and non-AIDS cancers. HIV/AIDS was the fourth leading cause of death in 2008 among male residents.

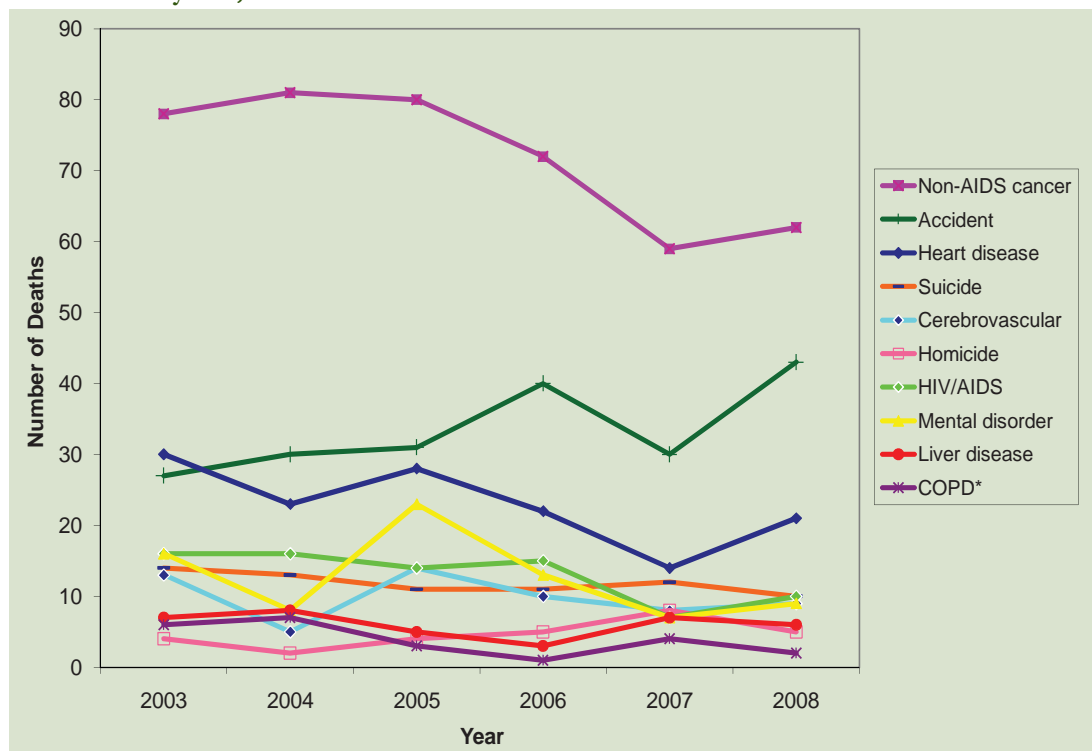
Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2003-2008



* COPD: chronic obstructive pulmonary disease.

Deaths due to HIV/AIDS among San Francisco women were significantly lower than among men. Among those aged 25-54 years in 2008, the number of deaths among males due to HIV/AIDS (N=52) (Figure 5.2) was approximately five times higher than the number of deaths among females (N=10) (Figure 5.3). HIV/AIDS-related deaths were steady from 2003 through 2008 but decreased in 2007 (Figure 5.3). Non-AIDS cancer remained the leading cause of death for female residents aged 25-54 years from 2003 through 2008, with most of these deaths due to breast cancer.

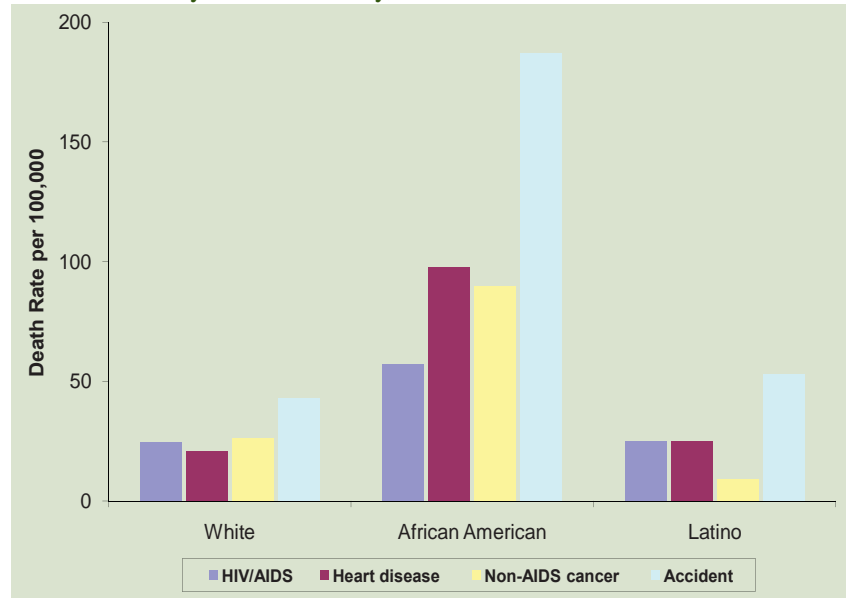
Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2003-2008



* COPD: chronic obstructive pulmonary disease.

In 2008, African American males aged 25-54 years had higher death rates from the top four leading causes of death than did Latino and white men aged 25-54 years (Figure 5.4). The greatest disparities were observed for deaths due to accidents. The HIV/AIDS death rate for African American men (57 per 100,000) was about two times the death rate among white men and Latino men (25 per 100,000).

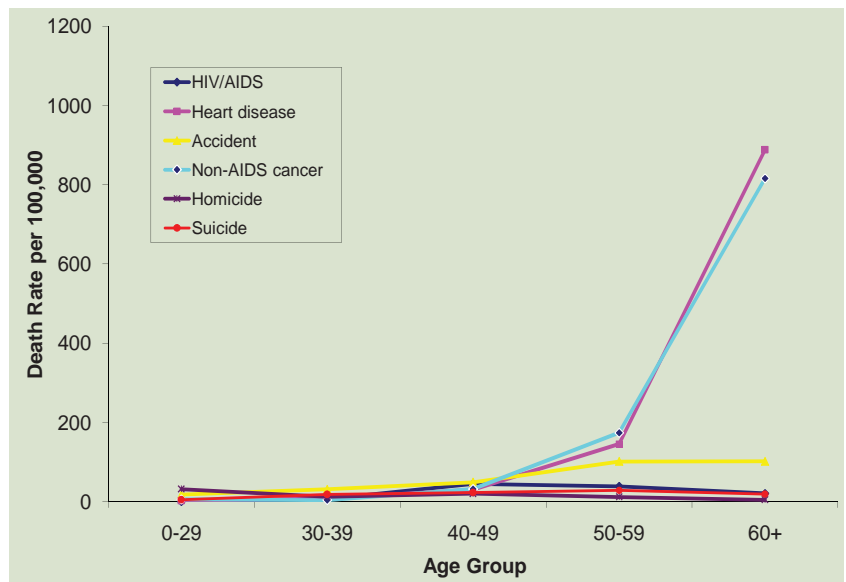
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2008



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

Figure 5.5 illustrates the age-specific death rates among male San Francisco residents. The HIV/AIDS-related death rate reached its highest among those aged 40-49 (45 per 100,000). The leading cause of death among the 40-49 years age group was accident (49 per 100,000). In 2008, homicide was the leading cause of death among those under 30 years old, and accident was the leading cause of death for those aged 30-39 years and 40-49 years. Men over 50 died at a dramatically higher rate due to chronic conditions such as heart disease and non-AIDS cancer.

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents* by age group, 2008



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

6

Opportunistic Illnesses among Adults and Adolescents with AIDS

To be diagnosed with AIDS, an HIV-infected adult or adolescent must have been diagnosed with one or more AIDS-defining opportunistic illnesses or a CD4 count of less than 200 cells/ μ L or less than 14 percent of total lymphocytes. Every adult or adolescent reported with AIDS to the San Francisco Department of Public Health (SFDPH) must meet at least one of these criteria. Most opportunistic illnesses occur in persons whose CD4 cell count is below 200 cells/ μ L. As such, most persons who are diagnosed with an AIDS opportunistic illness also have a low CD4 cell count. For the purposes of surveillance, adults or adolescents who meet the AIDS case definition because of one or more opportunistic illnesses will have these recorded as their AIDS-defining illness. Those who meet the AIDS case definition with a low CD4 cell count or percentage but without an opportunistic illness are considered to have AIDS solely because of reduced CD4 cells.

The SFDPH has collected the initial and subsequent occurrence of AIDS opportunistic illnesses since AIDS surveillance began in 1981. To our knowledge, the SFDPH is the only health department in the country to have done so. This provides us with a comprehensive understanding of the spectrum of opportunistic illnesses over time.

We examined trends in the initial AIDS defining diagnosis in three distinct time periods; the pre-highly active antiretroviral therapy (HAART) era (1993-1995), the early HAART era (1996-2000), and the late HAART era (2001-2010) (Table 6.1). Between 1993 and 2010, there were 13,504 adult and adolescent AIDS cases diagnosed. During all three time periods, over 70% of those cases met the case definition because of a low CD4 cell count or percentage in the absence of an opportunistic illness. This is because most opportunistic illnesses do not occur at CD4 counts above 200 cells/ μ L. In the most recent years, over 80% of cases were diagnosed by CD4 levels alone. In all three time periods, *Pneumocystis jirovecii* pneumonia (PCP) was the most frequent opportunistic illness, followed by Kaposi's sarcoma. In the first two time periods, the third most frequent opportunistic illness was wasting syndrome but in the period 2001-2010, candidiasis of esophagus, bronchi, lungs or trachea was the third most frequently diagnosed opportunistic illness. Declines in opportunistic illnesses can be attributed to prophylaxis and improved antiretroviral therapy and to earlier diagnosis of HIV infection.

Table 6.1 Adult/adolescent AIDS cases, by initial AIDS-defining conditions and calendar period of AIDS diagnosis, 1993-2010, San Francisco

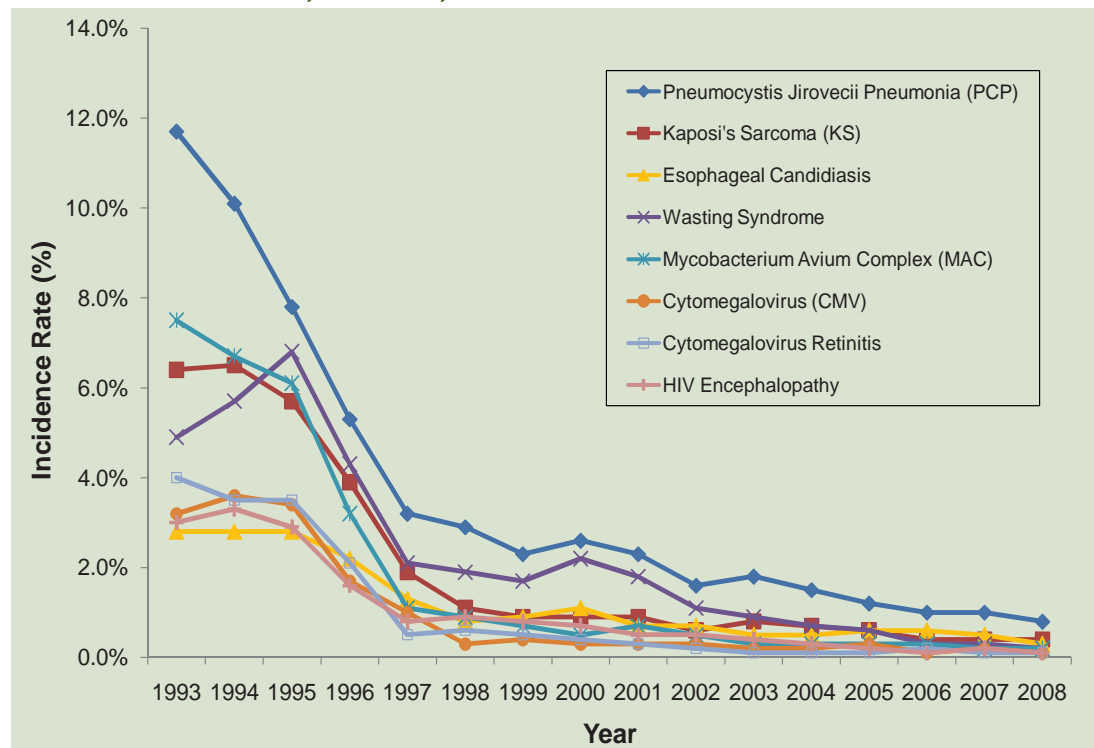
Initial AIDS-Defining Condition*	Pre-HAART		Early HAART		Late HAART		Total	
	1993-1995		1996-2000		2001-2010		(N=13,504)	
	(N=5,413)		(N=3,706)		(N=4,385)			
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Candidiasis of esophagus, bronchi, lungs, or trachea	113	(2.1)	91	(2.5)	81	(1.8)	285	(2.1)
Invasive cervical cancer	0	(0.0)	1	(0.0)	4	(0.1)	5	(0.0)
Coccidioidomycosis	1	(0.0)	1	(0.0)	1	(0.0)	3	(0.0)
Cryptococcosis	56	(1.0)	35	(0.9)	51	(1.2)	142	(1.1)
Cryptosporidiosis	74	(1.4)	47	(1.3)	16	(0.4)	137	(1.0)
Cytomegalovirus (except liver, spleen, lymph nodes)	35	(0.6)	26	(0.7)	18	(0.4)	79	(0.6)
Cytomegalovirus retinitis	20	(0.4)	11	(0.3)	9	(0.2)	40	(0.3)
HIV encephalopathy	60	(1.1)	37	(1.0)	28	(0.6)	125	(0.9)
Chronic herpes simplex virus	7	(0.1)	11	(0.3)	8	(0.2)	26	(0.2)
Histoplasmosis	4	(0.1)	7	(0.2)	6	(0.1)	17	(0.1)
Isosporiasis	4	(0.1)	4	(0.1)	3	(0.1)	11	(0.1)
Kaposi's sarcoma	226	(4.2)	155	(4.2)	131	(3.0)	512	(3.8)
Lymphoma, Burkitt's (non-Hodgkin's)	8	(0.1)	13	(0.4)	21	(0.5)	42	(0.3)
Lymphoma, immunoblastic (non-Hodgkin's)	47	(0.9)	46	(1.2)	34	(0.8)	127	(0.9)
CNS lymphoma	4	(0.1)	5	(0.1)	6	(0.1)	15	(0.1)
Mycobacterium avium complex	36	(0.7)	27	(0.7)	23	(0.5)	86	(0.6)
Mycobacterium tuberculosis, pulmonary	74	(1.4)	44	(1.2)	50	(1.1)	168	(1.2)
Mycobacterium tuberculosis, disseminated or extrapulmonary	32	(0.6)	22	(0.6)	13	(0.3)	67	(0.5)
Atypical mycobacterium	9	(0.2)	2	(0.1)	6	(0.1)	17	(0.1)
Pneumocystis jirovecii pneumonia	559	(10.3)	410	(11.1)	343	(7.8)	1,312	(9.7)
Recurrent bacterial pneumonia	77	(1.4)	80	(2.2)	31	(0.7)	188	(1.4)
Progressive multifocal leukoencephalopathy	4	(0.1)	3	(0.1)	5	(0.1)	12	(0.1)
Salmonella septicemia	0	(0.0)	1	(0.0)	0	(0.0)	1	(0.0)
Toxoplasmosis	21	(0.4)	20	(0.5)	15	(0.3)	56	(0.4)
Wasting syndrome	176	(3.3)	107	(2.9)	69	(1.6)	352	(2.6)
CD4 count <200 cells/ μ L or < 14 percent [#]	3,965	(73.2)	2,647	(71.4)	3,511	(80.1)	10,123	(75.0)

* Cases may have more than one initial AIDS-defining condition.

Cases whose initial AIDS defining condition is low CD4 count (or percent) only.

Figure 6.1 shows the incidence rate of eight major opportunistic illnesses between 1993 and 2008. Dramatic declines in the most frequently occurring opportunistic illnesses are evident from this figure. Though more difficult to appreciate, there have also been declines in the less frequently occurring illnesses over this time period. It is important to note that reporting of opportunistic illnesses in most recent years may not be complete due to reporting delays. The decline in PCP in the early to mid-1990s can be attributed to widespread use of PCP prophylaxis. Declines in Mycobacterium Avium Complex are likely due to use of prophylaxis as well although this is more difficult to observe because of their relatively small numbers. Improved care, including HAART, is likely to be responsible for most of the decline.

Figure 6.1 Incidence rates* of opportunistic illnesses among adults and adolescents with AIDS, 1993-2008, San Francisco



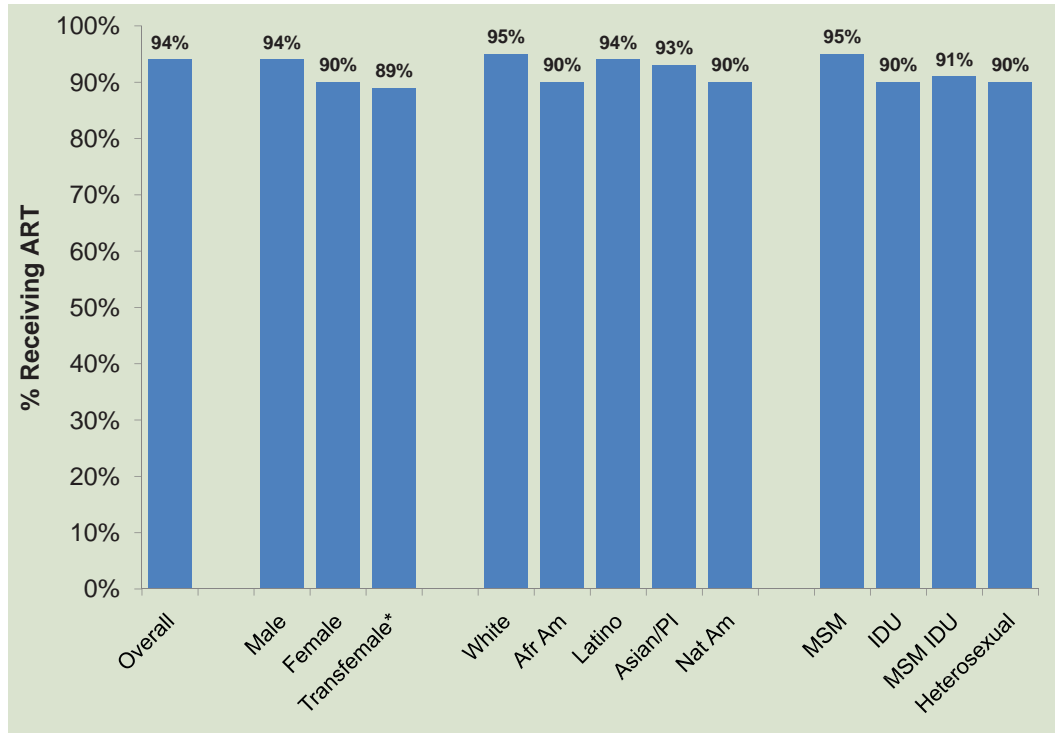
* See Technical Notes "Opportunistic Illness Incidence."

7

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 7.1 shows an estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2010. Information on ART is obtained from medical chart review, and persons who have been prescribed ART are assumed to have received it. The percentage of ART use was calculated among persons who have had follow-up information within the last two years and are not known to have moved out of San Francisco (N=6,249). Overall, 94% of persons living with AIDS received ART. Although ART use was slightly lower among certain subgroups (females, transfemale persons, African Americans, Native Americans, injection drug users and heterosexuals), these data suggest ART coverage is relatively high among persons living with AIDS.

Figure 7.1 Estimate of antiretroviral therapy use[#] among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2010, San Francisco



[#] See Technical Notes “Estimate of ART Use.”

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

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Table 7.1 shows ART use among persons living with AIDS by neighborhood at time of AIDS diagnosis. Neighborhoods with lower ART use (<93%) included Visitacion Valley, Bayview, South of Market and Lake Merced. Persons who were homeless at time of AIDS diagnosis had the lowest ART use (82%).

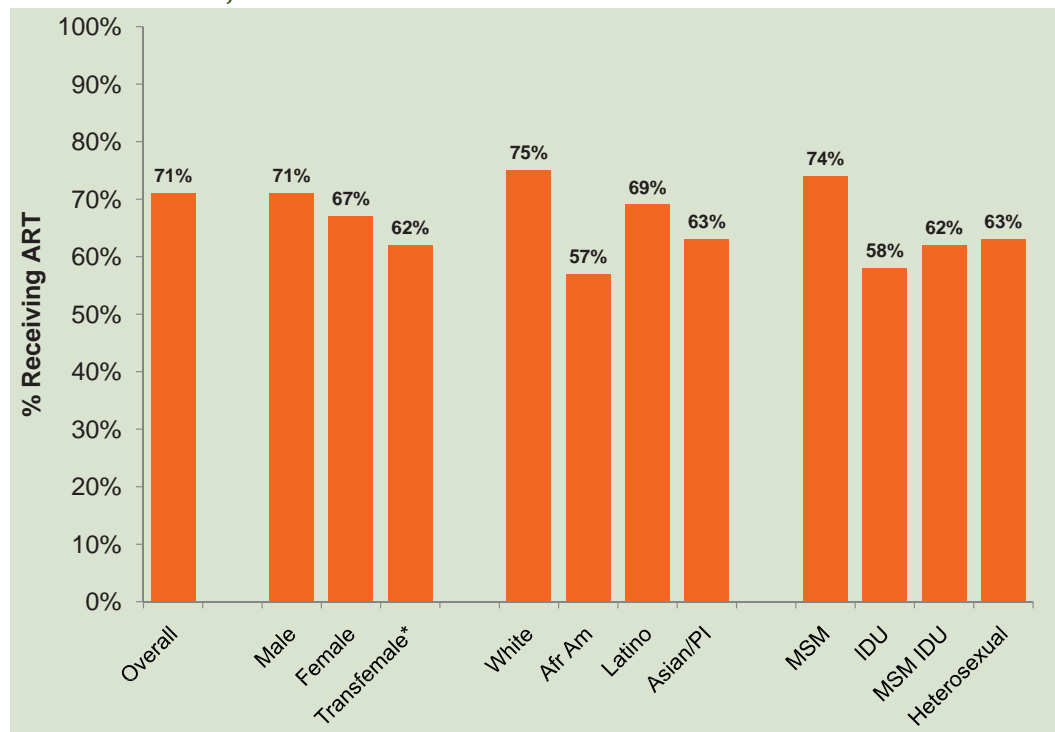
Table 7.1 Estimate of antiretroviral therapy use* among persons living with AIDS by neighborhood, December 2010, San Francisco

Neighborhood	Total Number	% Receiving ART
OUTER MISSION	85	98%
DIAMOND HEIGHTS	198	97%
MISSION	633	97%
CASTRO	1,083	96%
NOE VALLEY	167	96%
POTRERO HILL	101	96%
WESTERN ADDITION	802	96%
BERNAL HEIGHTS	153	95%
DOWNTOWN	175	95%
EXCELSIOR	97	95%
HAIGHT ASHBURY	168	95%
NOB HILL	167	95%
PACIFIC HEIGHTS	157	95%
TWIN PEAKS	130	95%
INGLESIDE	33	94%
RICHMOND	222	94%
SUNSET	148	93%
TENDERLOIN	662	93%
LAKE MERCED	26	92%
SOUTH OF MARKET	255	92%
BAYVIEW	160	91%
VISITACION VALLEY	63	89%
HOMELESS	383	82%

* See Technical Notes "Estimate of ART Use."

Figure 7.2 shows use of ART among persons living with HIV who have not progressed to AIDS. These estimates were calculated among those with follow-up information within the last two years (N=3,794). Overall, 71% of persons living with HIV non-AIDS received ART. Lower ART use in persons with HIV non-AIDS compared to persons with AIDS most likely reflects differences in recommendations regarding the optimal time to initiate ART. In addition, the disparity in ART use by demographic and risk characteristics is more prominent in this population compared to those with AIDS. Transfemale persons, African Americans and injection drug users have the lowest percentage receiving ART.

Figure 7.2 Estimate of antiretroviral therapy use[#] among persons living with HIV non-AIDS by gender, race/ethnicity[‡], and exposure category, December 2010, San Francisco



[#] See Technical Notes “Estimate of ART Use.”

[‡] Information for Native Americans is not shown due to small numbers.

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

Use of Antiretroviral Therapy among Persons with HIV/AIDS

By neighborhood at time of HIV diagnosis, those with lower ART use (<64%) included Bayview, Nob Hill, Outer Mission, and Tenderloin (Table 7.2). Forty-four percent of homeless persons with HIV non-AIDS received ART.

Table 7.2 Estimate of antiretroviral therapy use* among persons living with HIV non-AIDS by neighborhood, December 2010, San Francisco

Neighborhood	Total Number	% Receiving ART
NOE VALLEY	103	84%
CASTRO	715	80%
LAKE MERCED	19	79%
HAIGHT ASHBURY	81	77%
DIAMOND HEIGHTS	132	73%
PACIFIC HEIGHTS	80	73%
VISITACION VALLEY	30	73%
WESTERN ADDITION	433	73%
MISSION	355	72%
TWIN PEAKS	87	72%
DOWNTOWN	108	71%
POTRERO HILL	59	71%
RICHMOND	117	71%
EXCELSIOR	30	70%
BERNAL HEIGHTS	84	69%
INGLESIDE	22	68%
SUNSET	100	68%
SOUTH OF MARKET	149	64%
BAYVIEW	75	63%
NOB HILL	68	63%
OUTER MISSION	52	63%
TENDERLOIN	320	63%
HOMELESS	208	44%

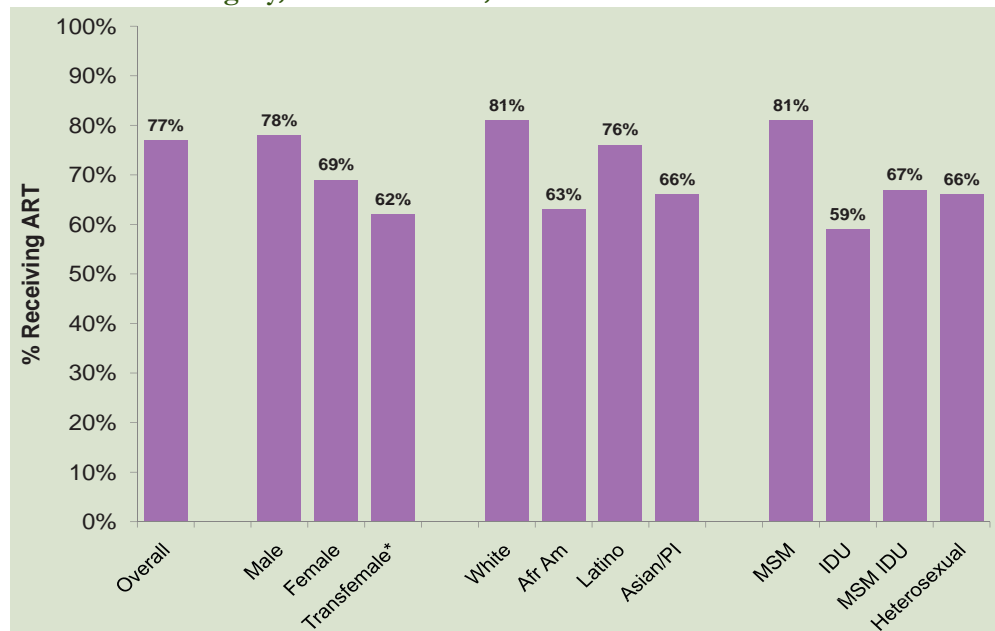
* See Technical Notes "Estimate of ART Use."

Prior to December 2009, treatment recommendations called for initiating ART in HIV infected persons who had a CD4 count less than 350 cells/ μ L. In December 2009, the U.S. Department of Health and Human Services updated the guidelines for ART to recommend that HIV-infected persons start ART when their CD4 count falls below 500 cells/ μ L. In April, 2010, the San Francisco Department of Public Health adopted a new policy recommending that health care providers discuss the advantages and disadvantages of initiating ART for all HIV-infected persons regardless of their CD4 count and provide ART to all patients who choose to begin therapy.

In order to provide a more accurate estimate of ART use among persons living with HIV non-AIDS, taking into account the change in the treatment guidelines in recent years, we calculated receipt of ART using a sample of cases (N=1,722) for whom a chart review was completed between January 2010 and February 2011 and the information of ART use is more complete. The ART use was 77% in this sample of HIV non-AIDS cases (Figure 7.3). The relative proportion of persons receiving ART stratified by gender, race/ethnicity, and risk was similar to the distribution of ART use among persons with HIV non-AIDS shown in Figure 7.2.

Although our data demonstrate differences in the proportion of persons prescribed ART by demographic characteristics, they do not tell us the reason for these findings. A number of explanations are possible including both patient and provider factors. These include risk of side effects, anticipated difficulties adhering to medications, current treatment for other conditions, and desire to delay ART until more severely ill.

Figure 7.3 Estimate of antiretroviral therapy use[#] in a sample of HIV non-AIDS cases with chart review by gender, race/ethnicity[‡], and exposure category, December 2010, San Francisco



[#] See Technical Notes “Estimate of ART Use.”

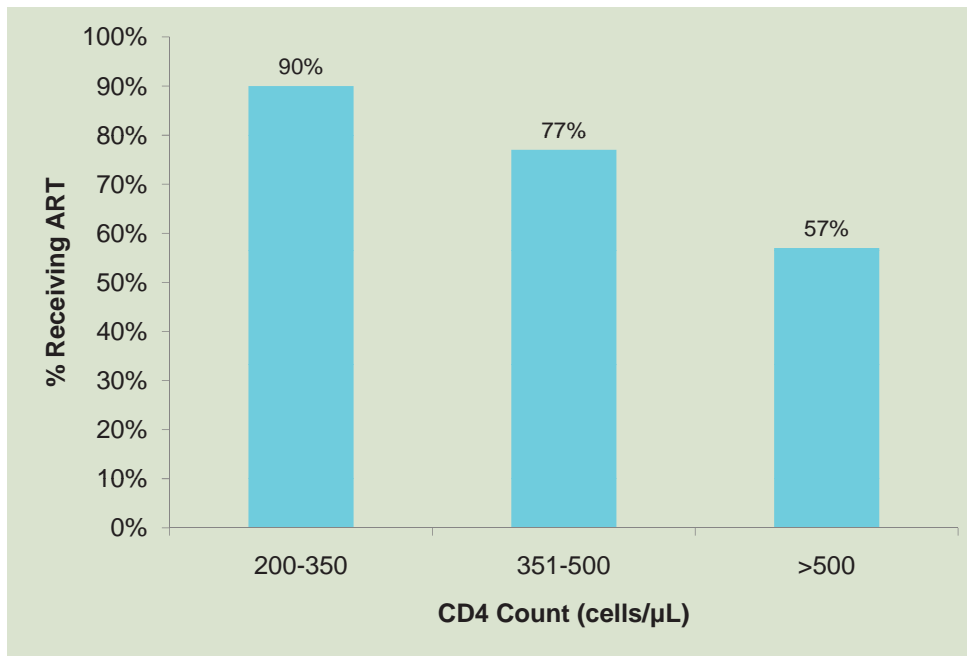
[‡] Information for Native Americans is not shown due to small numbers.

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

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 7.4 shows ART use in this sample (N=1,722) by CD4 level. The proportion receiving ART was greater among persons with lower CD4 counts: 90% of cases with a CD4 count between 200-350 cells/ μ L, 77% with a CD4 count between 351-500 cells/ μ L, and 57% with a CD4 count above 500 cells/ μ L received ART.

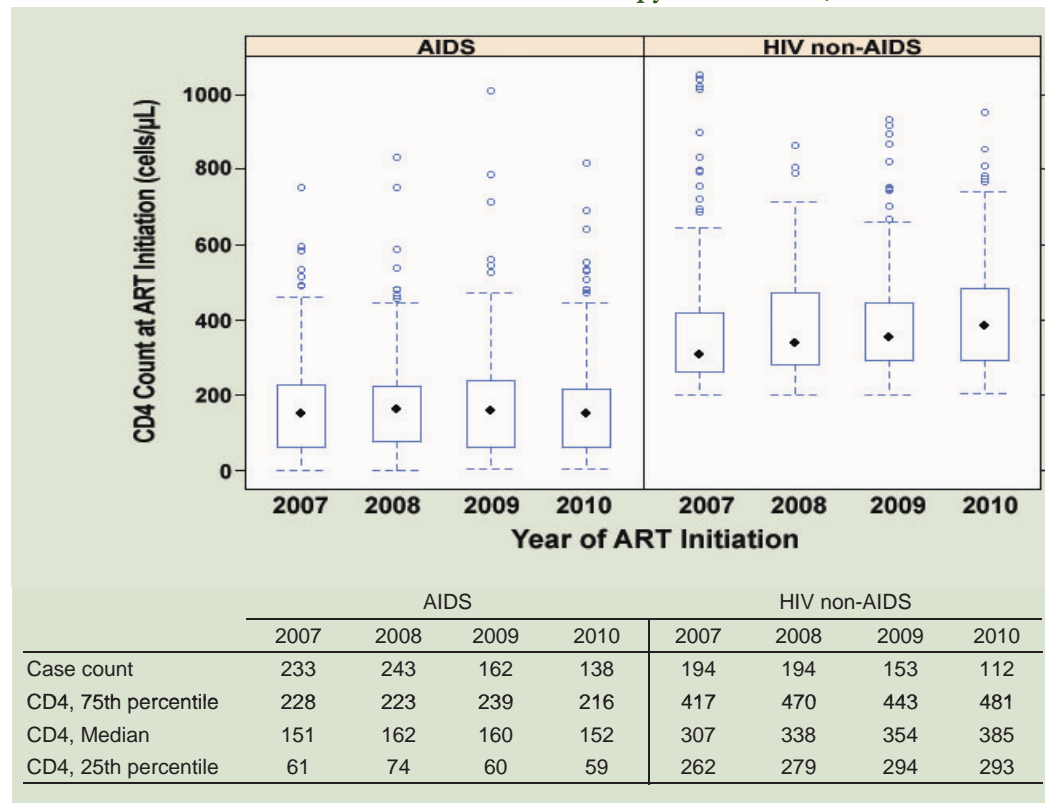
Figure 7.4 Estimate of antiretroviral therapy use* in a sample of HIV non-AIDS cases with chart review by CD4 level, December 2010, San Francisco



* See Technical Notes "Estimate of ART Use."

In order to understand the timing of treatment initiation among HIV-infected persons in relation to their CD4 level, we examined CD4 counts for HIV patients who started ART between 2007 and 2010 (Figure 7.5). The figure shows the distribution of CD4 count by diagnosis at ART initiation and year of ART initiation. We included persons for whom information regarding treatment start date and a CD4 count within six months prior to the ART initiation was available. If multiple CD4 counts prior to the treatment were available, the lowest CD4 count was selected. The distribution of CD4 counts at time of ART initiation for persons with an AIDS diagnosis did not change appreciably between 2007 and 2010. However, among persons with HIV non-AIDS, the distribution of CD4 counts at ART initiation shifts slightly higher with time. This suggests a trend towards initiating ART earlier in the course of disease.

Figure 7.5 Distribution of CD4 level at time of treatment among persons with HIV/AIDS who started antiretroviral therapy in 2007-2010, San Francisco



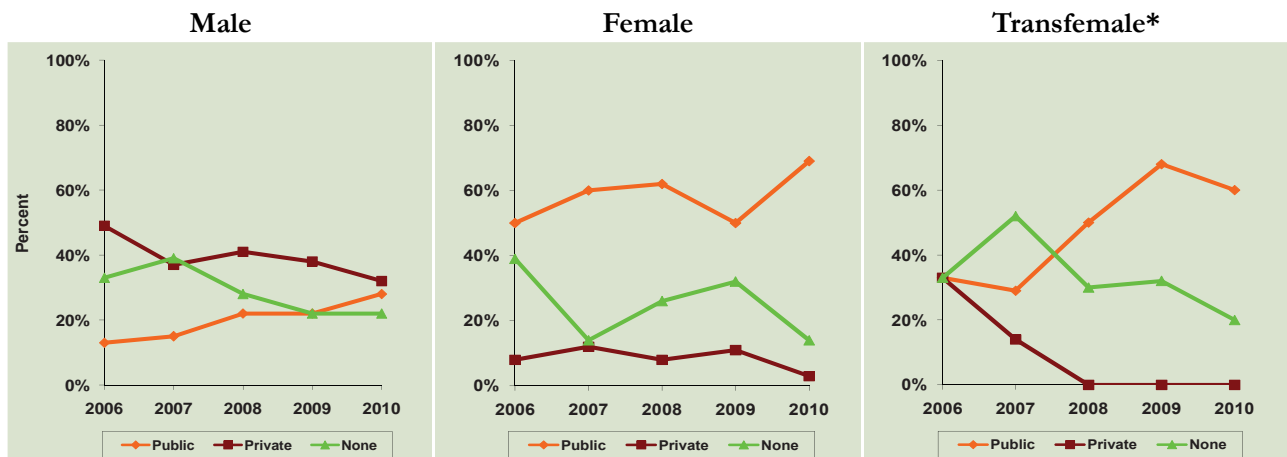
- Each black point indicates a median, the top and bottom of each box represents, respectively, the 75th and 25th percentile of the distribution. The plot is limited to a maximum of 1,100 cells/ μ L. The circles indicate outliers.



Insurance Status at Time of HIV/AIDS Diagnosis

The insurance status at time of initial HIV diagnosis differs among men, women, and transfemale persons. The proportion of men with private insurance was consistently higher than proportions of women and transfemale persons with private insurance (Figure 8.1). In recent years, the proportions of males diagnosed with HIV with private and public insurance has become more similar, while the proportion with no insurance has declined since 2007 from 39% to 22% in 2009 and 2010. For women, since 2006, 50% or more of persons diagnosed with HIV had public insurance at diagnosis. Compared to males and females diagnosed with HIV, transfemales had the highest proportion with no insurance coverage between 2006 and 2010.

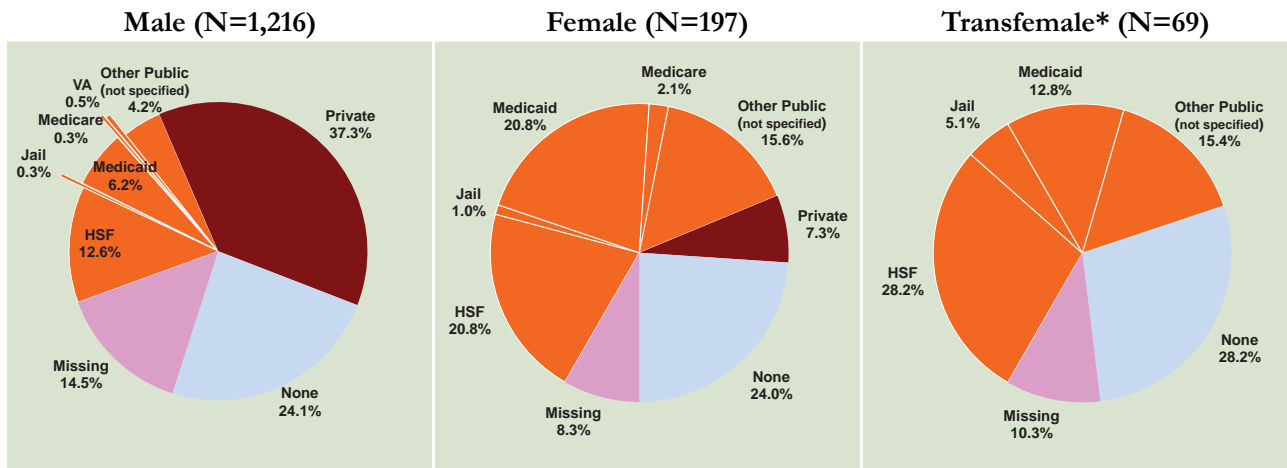
Figure 8.1 Trends in insurance status at time of initial HIV diagnosis by gender, 2006-2010, San Francisco



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

Figure 8.2 shows the distribution of insurance types by gender for HIV/AIDS cases diagnosed in 2008-2010. Female and transfemale cases diagnosed during this time period had higher proportions that were under-insured (i.e. having no insurance or public insurance) compared to males. Females had the highest proportions using state or federally-sponsored insurance (Medicaid, Medicare) at time of initial HIV diagnosis. Transfemales also had the highest proportion using Healthy San Francisco (HSF), the county-sponsored access to health care program for San Francisco residents that became widely available in 2008.

Figure 8.2 HIV/AIDS cases by gender and insurance status at time of initial HIV diagnosis, 2008-2010, San Francisco



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

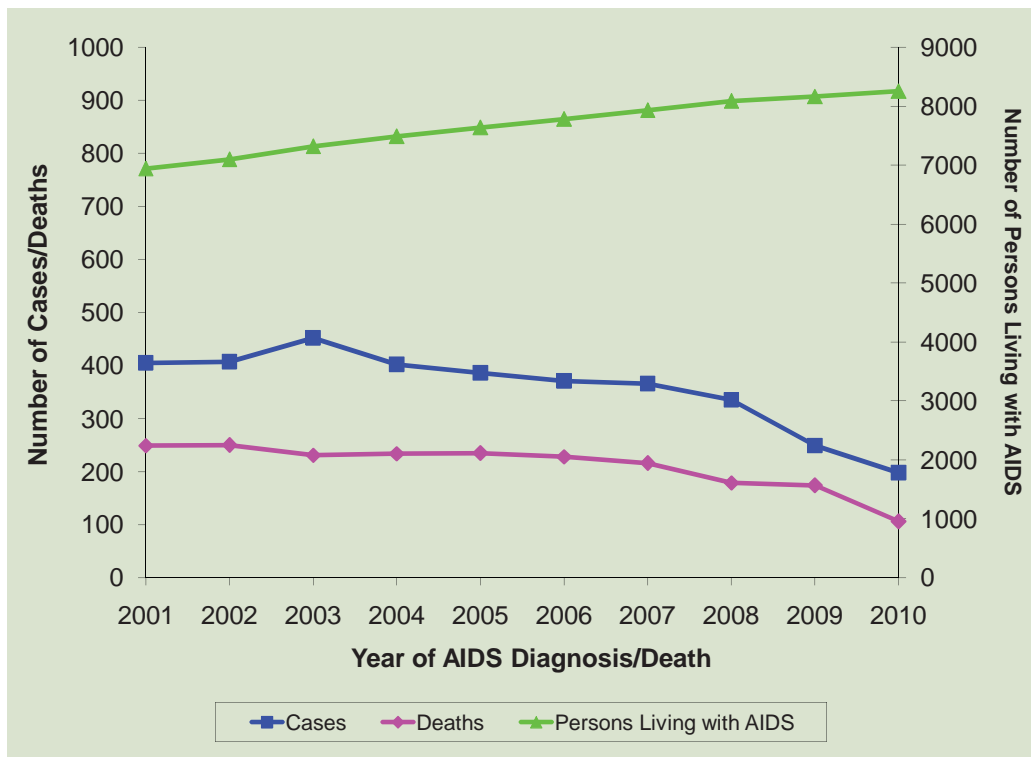
9

HIV/AIDS among Men Who Have Sex with Men

HIV/AIDS surveillance data

Over the last decade, the number of new AIDS cases and AIDS deaths declined among MSM while the number of MSM living with AIDS increased. Between 2003 and 2005, deaths among MSM were stable (Figure 9.1). By the end of 2010, there were 8,253 MSM living with AIDS in San Francisco.

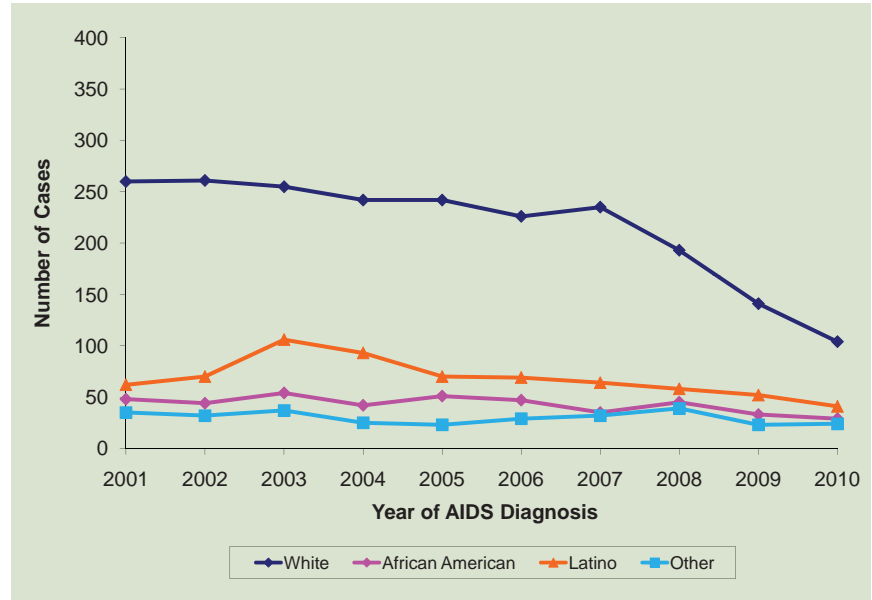
Figure 9.1 AIDS cases, deaths, and prevalence among MSM*, 2001-2010, San Francisco



* Includes MSM and MSM IDU.

The majority of San Francisco’s MSM AIDS cases are white (Figure 9.2). The number of MSM AIDS declined gradually from 2001 to 2007 and more sharply beginning in 2008. Latinos are the second highest affected race/ethnicity group among MSM AIDS cases. In 2010 there were 104 white MSM, 41 Latino MSM, and 29 African American MSM diagnosed with AIDS in San Francisco.

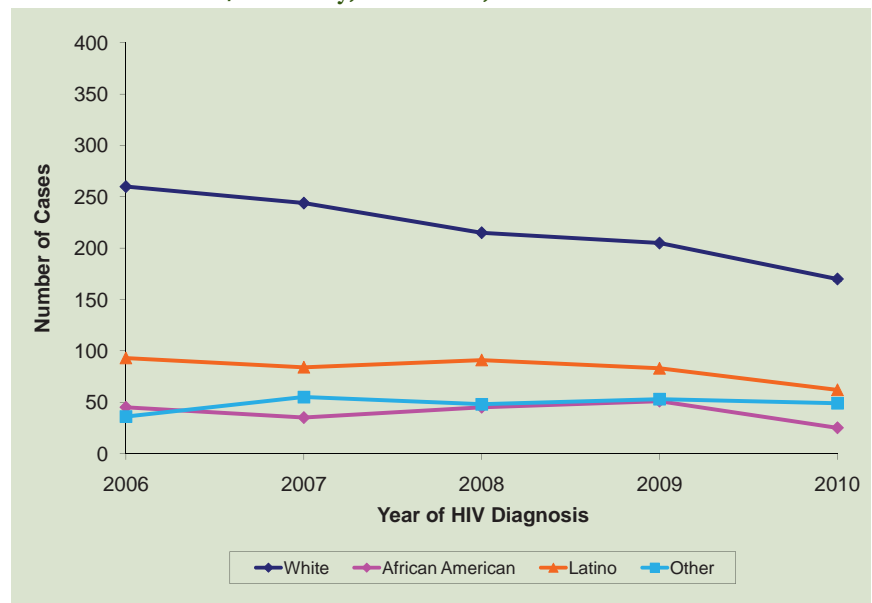
Figure 9.2 AIDS cases among MSM* by race/ethnicity, 2001-2010, San Francisco



* Includes MSM and MSM IDU.

Persons who are white make up the largest race/ethnicity group of San Francisco’s MSM cases diagnosed with HIV infection (Figure 9.3). Trends of cases diagnosed with HIV infection between 2006 and 2010 indicate that there was a decline among white MSM, while the number of cases for other race/ethnicity groups was fairly stable.

Figure 9.3 Cases diagnosed with HIV infection* among MSM by race/ethnicity, 2006-2010, San Francisco



* Includes MSM and MSM IDU with HIV/AIDS 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 men who have sex with men who participate in their outreach prevention activities in San Francisco. These data are collected anonymously and shared with the San Francisco Department of Public Health 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 men 18 years and older who reside in San Francisco.

Figure 9.4 shows trends in reported UAI (either insertive or receptive) by self-reported HIV serostatus. Between 2006 to 2010, the percent among HIV-negative MSM who reported UAI has steadily declined from 42% in 2006 to 32% in 2010. Among HIV-positive men, the percent UAI has fluctuated from a low of 45% in 2008 to a high of 63% in 2010.

Figure 9.5 shows the percent of MSM who reported UAI with potentially HIV discordant partners, a measure that gauges the potential for HIV transmission by excluding sex between men known to be the same HIV status. A potentially discordant partnership is defined as partner whose HIV status differs from the respondent's or is unknown. Since 2006, insertive UAI between HIV-positive men and their discordant partners appears to be stable. Similarly, the percent of HIV-negative men who reported receptive UAI with a potentially discordant partner appears to be stable at about 5%.

Figure 9.4 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the STOP AIDS Project, 2006-2010, San Francisco

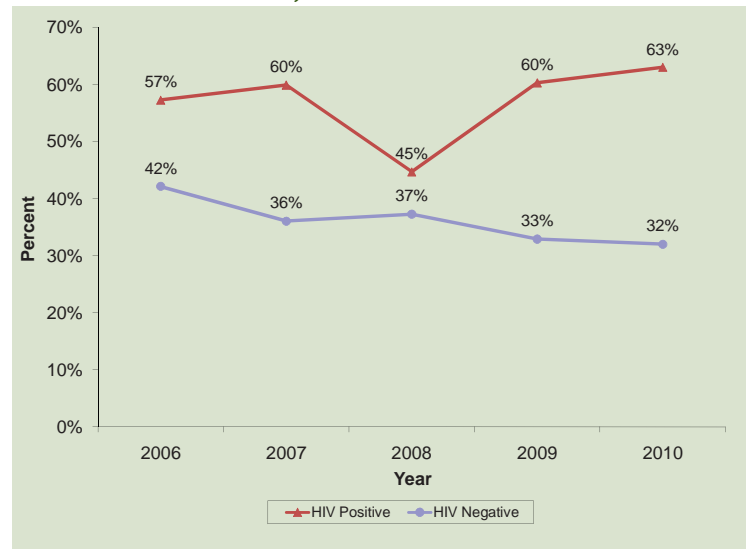
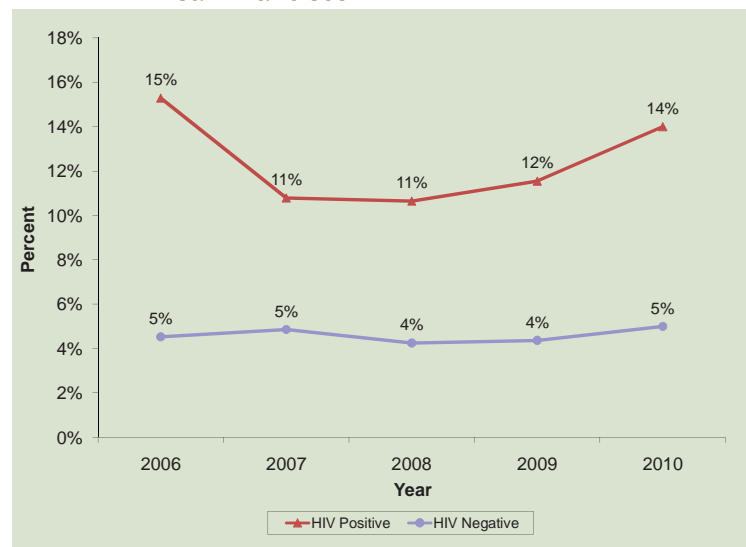


Figure 9.5 Percent of MSM reporting unprotected anal intercourse in the last six months with potentially HIV discordant partners by self-reported HIV status, the STOP AIDS Project, 2006-2010, San Francisco



Sexually transmitted diseases among MSM

Figure 9.6 shows trends in male rectal gonorrhea and male gonococcal proctitis among MSM in San Francisco from 2000 through 2010 by HIV serostatus. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last decade has seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease after 2006 among HIV-positive MSM. Male gonococcal proctitis represent men with symptomatic infection. Data on 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, delayed reporting, and a large proportion of cases that do not manifest symptoms.

Figure 9.6 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2000-2010, San Francisco

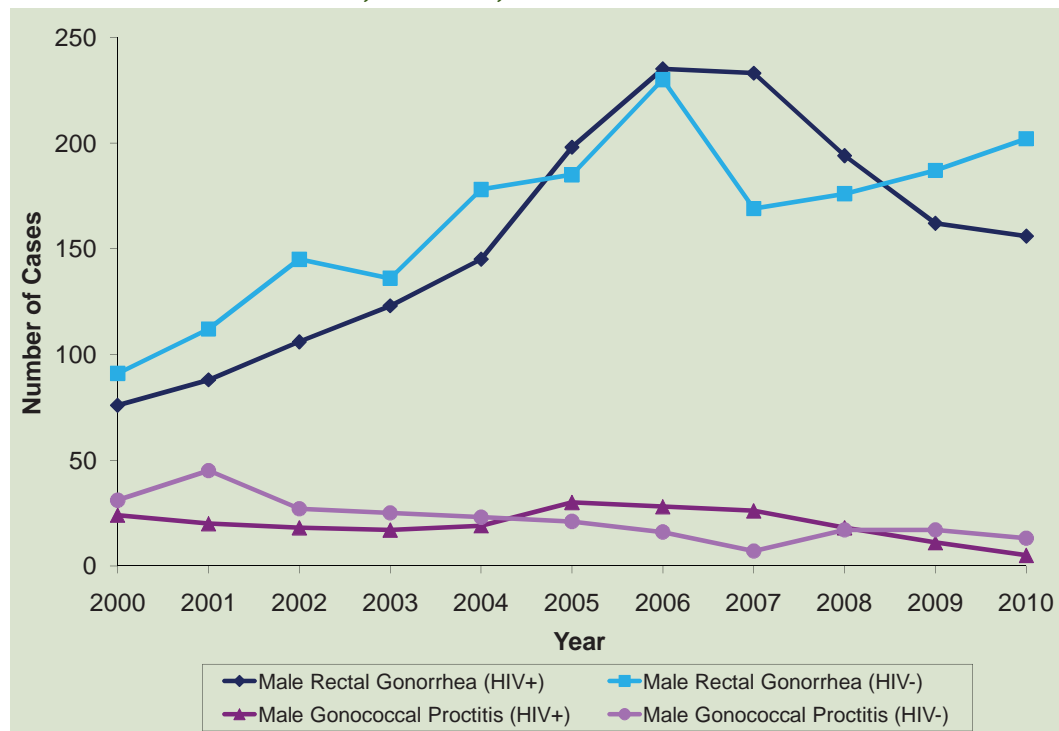
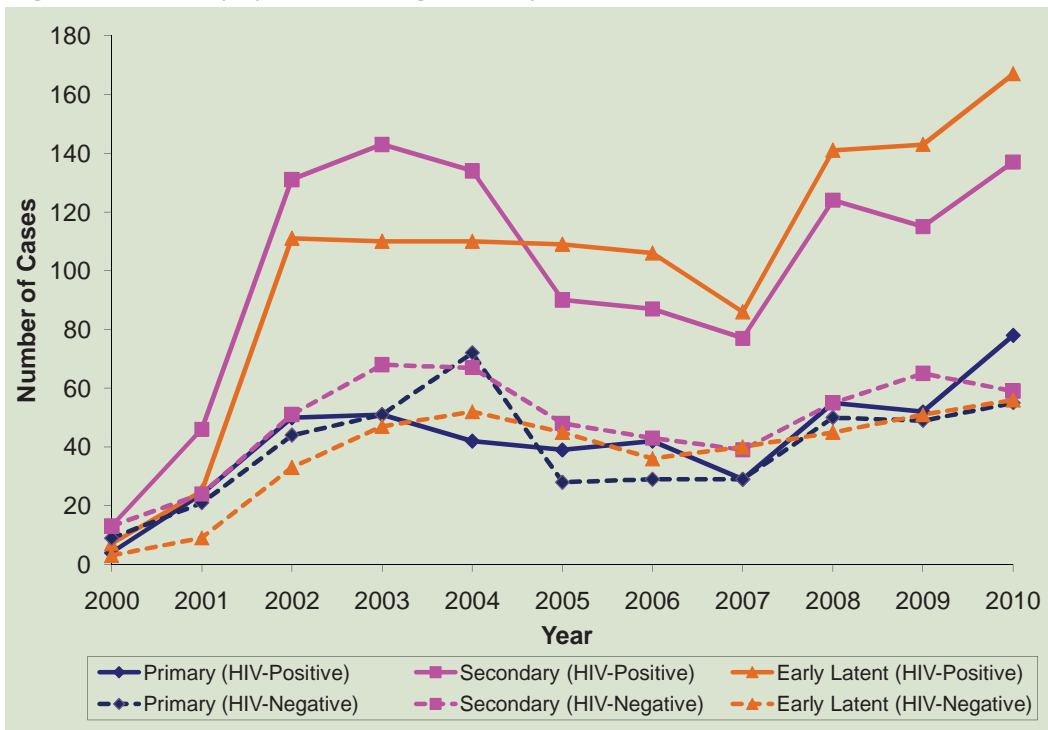


Figure 9.7 shows trends in early syphilis cases (primary, secondary, and early latent) among MSM in San Francisco from 2000 through 2010 by HIV serostatus. Data originate from case reporting from laboratories and health providers throughout the city and from the municipal STD clinic, the site where most of the patients were diagnosed. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior. The increase from 2000 to 2010 in early syphilis among MSM in San Francisco is dramatic. In 2005, early syphilis among MSM declined from 2004. However, in 2008, primary, secondary and early syphilis among MSM began to rise again, especially among HIV-positive MSM.

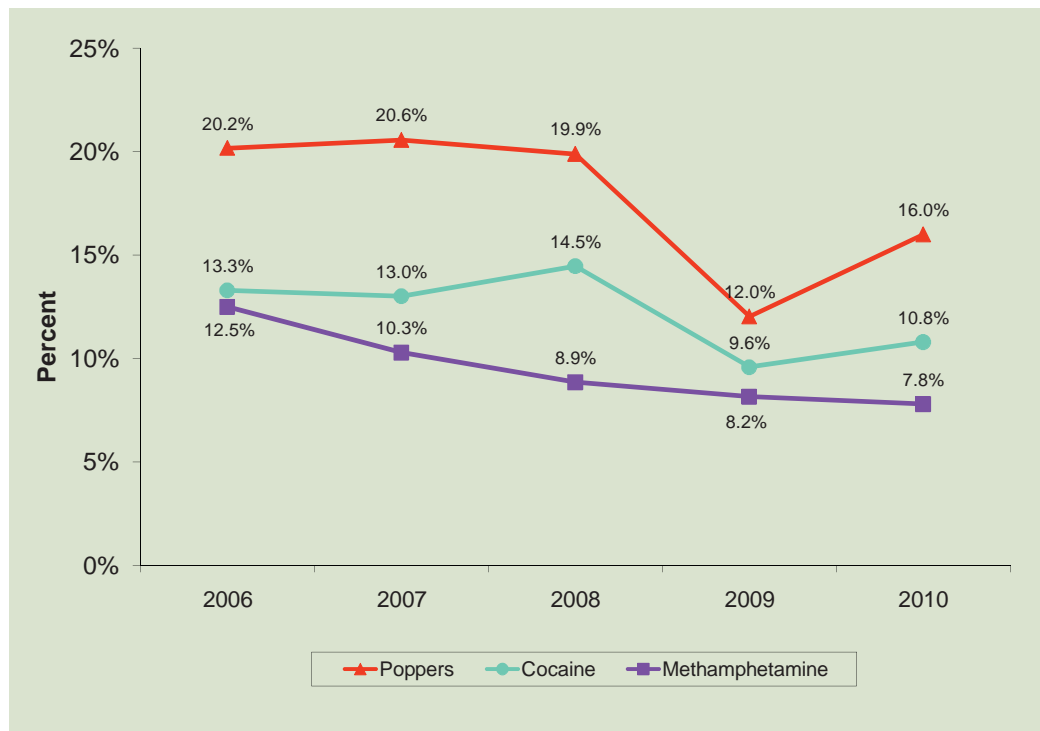
Figure 9.7 Early syphilis among MSM by HIV serostatus, 2000-2010, San Francisco



Substance use

The STOP AIDS Project records substance use among San Francisco MSM. Figure 9.8 shows the percent of MSM who used methamphetamines, “poppers,” or cocaine in the past six months. Poppers continue to be the drug used by the largest percent of MSM and the percent reporting its use increased from 12% in 2009 to 16% in 2010. Cocaine use among MSM increased slightly in 2010 to 10.8%. Methamphetamine use in 2010 was just under 8%.

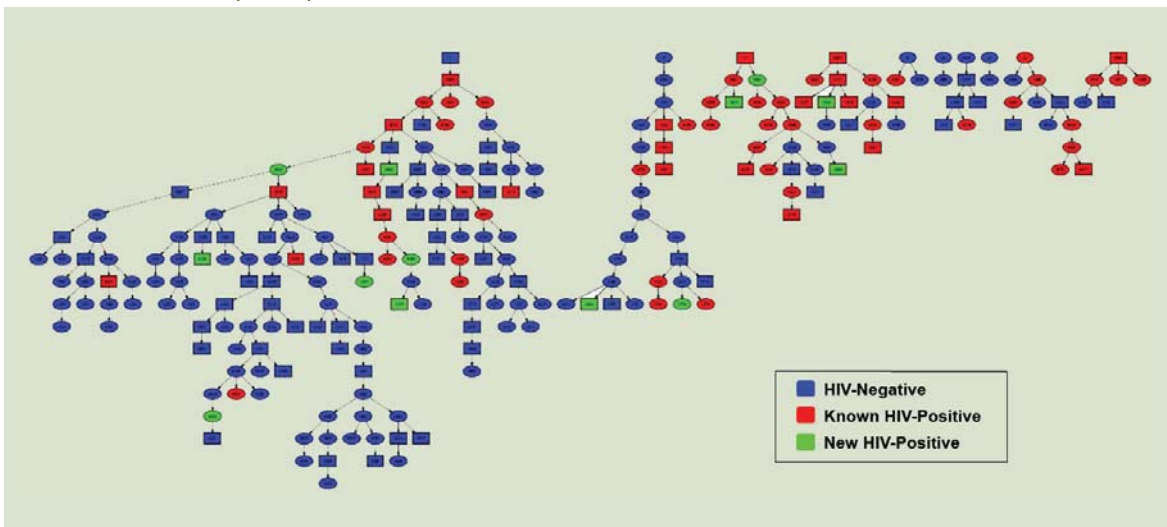
Figure 9.8 Substance use among MSM, the STOP AIDS Project, 2006-2010, San Francisco



African American MSM HIV Testing Project

Black men who have sex with men (MSM) are disproportionately affected by HIV infection and black MSM in San Francisco may have higher rates of unrecognized HIV infections. We used a network approach to deliver HIV testing to black MSM in San Francisco and collected risk assessment data during 2009. Initial seed participants were chosen purposefully to reflect the diversity of black MSM in San Francisco. Seeds were contacted through community based organizations and referrals. Participants were asked to recruit any of their social contacts who were also black MSM. Recruitment by risk level and HIV status was heterogeneous. Most men reported ever having had an HIV test (93.4%) while only 53.1% and 32% had an HIV test in the past 12 and six months, respectively. Overall HIV prevalence in this population is 31.6%. HIV infection among this population is associated with having a high school education or higher and having an annual income of \$10,000 to \$30,000 compared to less than \$10,000. Fully 23% of HIV positive black MSM are unaware of their infection. Only a third of unrecognized infections were recruited by a known HIV-positive participant. Linkage to care was a challenge and underscores the need for comprehensive systems and support to link black MSM to care and treatment.

Figure 9.9 Location of new detections of HIV infection in recruitment chains among black MSM, 2009, San Francisco

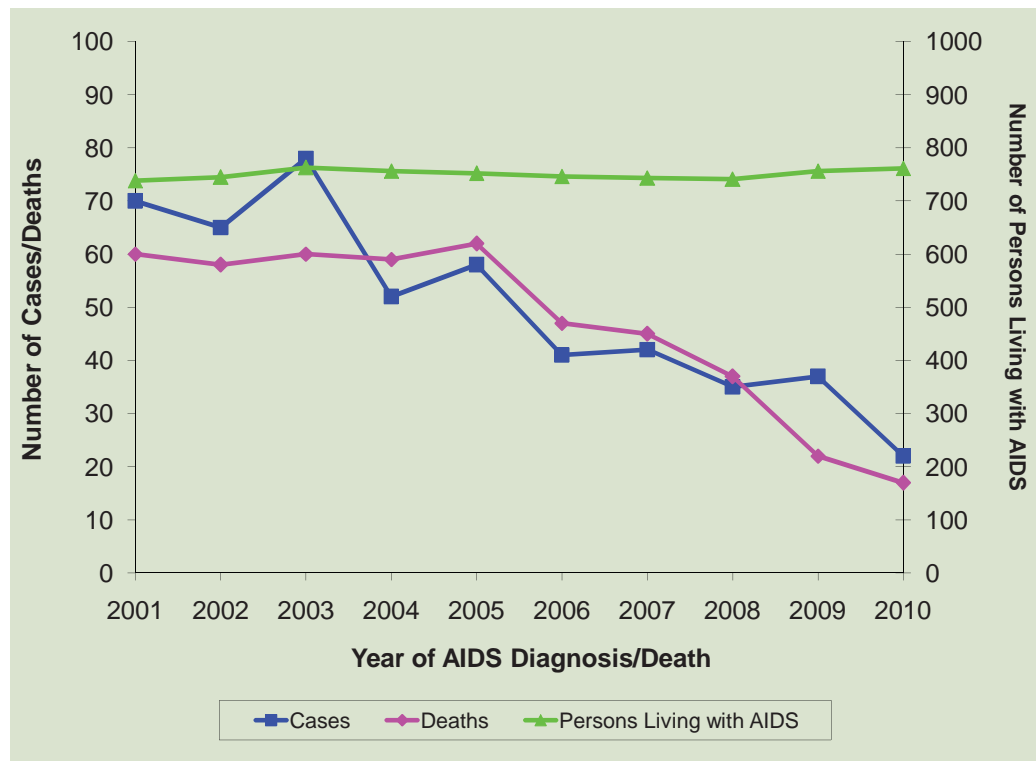


10 HIV/AIDS among Injection Drug Users

HIV/AIDS surveillance data

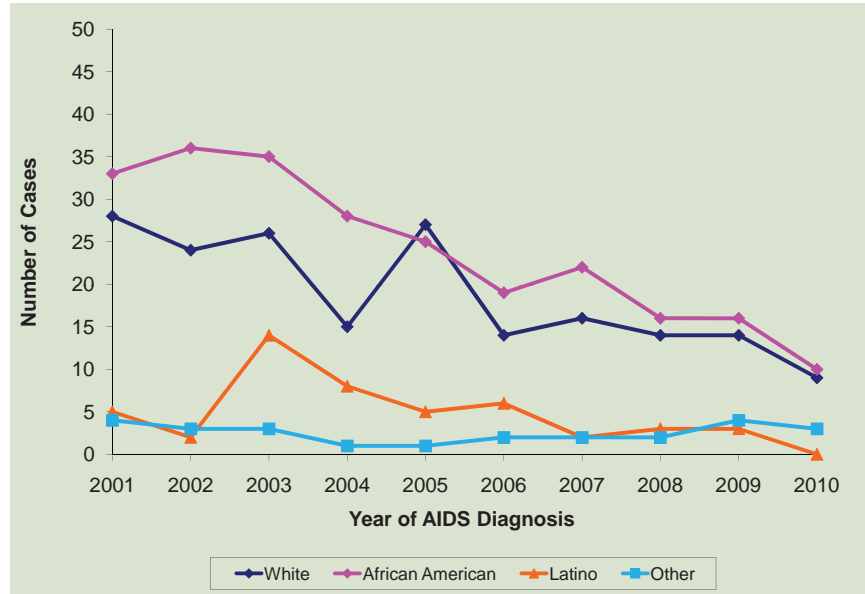
Injection drug use by non-MSM is the third most frequent exposure group among cumulative AIDS cases in San Francisco. This differs from national AIDS data where non-MSM IDU is the second most frequent exposure group among all cases. The number of living non-MSM IDU in San Francisco has been fairly level from 2001 to 2010 (Figure 10.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2010, there were 761 non-MSM IDU living with AIDS in San Francisco.

Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2001-2010, San Francisco



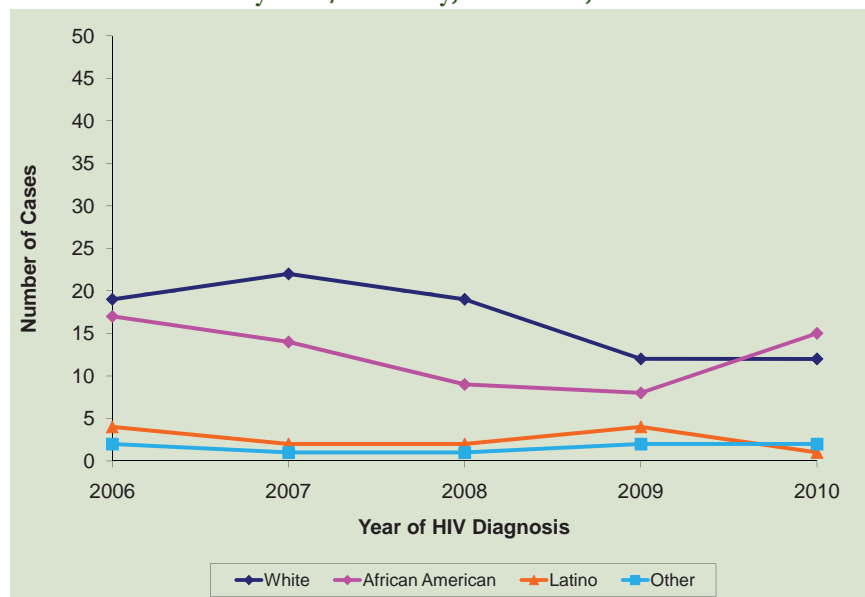
From 2001 to 2004, African Americans accounted for the greatest number of AIDS cases each year among non-MSM IDU (Figure 10.2). Since 2005, the number of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who were Latino or of other race/ethnicity groups accounted for few AIDS cases between 2001 and 2010.

Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, 2001-2010, San Francisco



Examined by year of HIV diagnosis, among non-MSM IDU, whites accounted for the greatest number of cases diagnosed with HIV infection each year between 2006 and 2009 (Figure 10.3). In 2010, the number of HIV cases was the highest among African American IDU. Since 2006, the numbers of white and African American non-MSM IDU cases diagnosed with HIV infection have declined while the numbers for other race/ethnicity groups remained stable.

Figure 10.3 Cases diagnosed with HIV infection* among non-MSM IDU by race/ethnicity, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Table 10.1 shows the risk and race/ethnicity distributions of AIDS cases that were directly or indirectly associated with injection drug use. MSM IDU account for 65% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 21%. Whites make up the largest proportion of MSM IDU and lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in all other exposure categories.

Table 10.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2010, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,410	36%	48%	12%	4%
Female heterosexual IDU	707	32%	52%	11%	5%
MSM IDU	4,430	69%	16%	11%	4%
Lesbian IDU	60	43%	37%	12%	8%
Heterosexual contact with IDU	155	32%	43%	16%	9%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

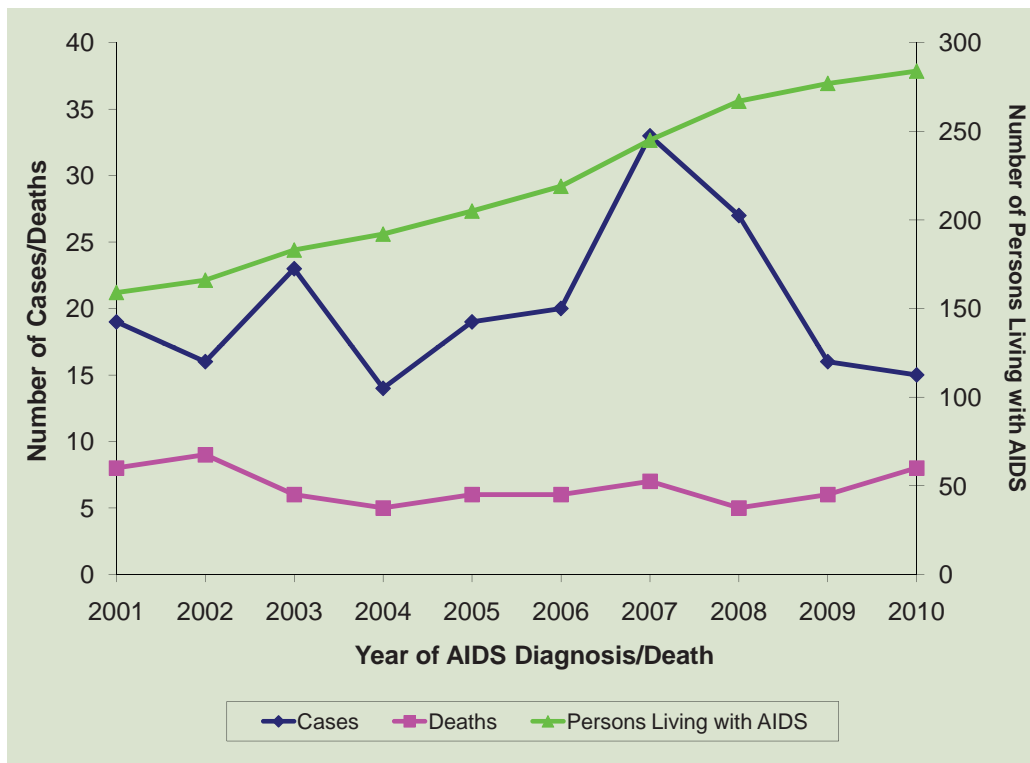
11

HIV/AIDS among Heterosexuals

HIV/AIDS surveillance data

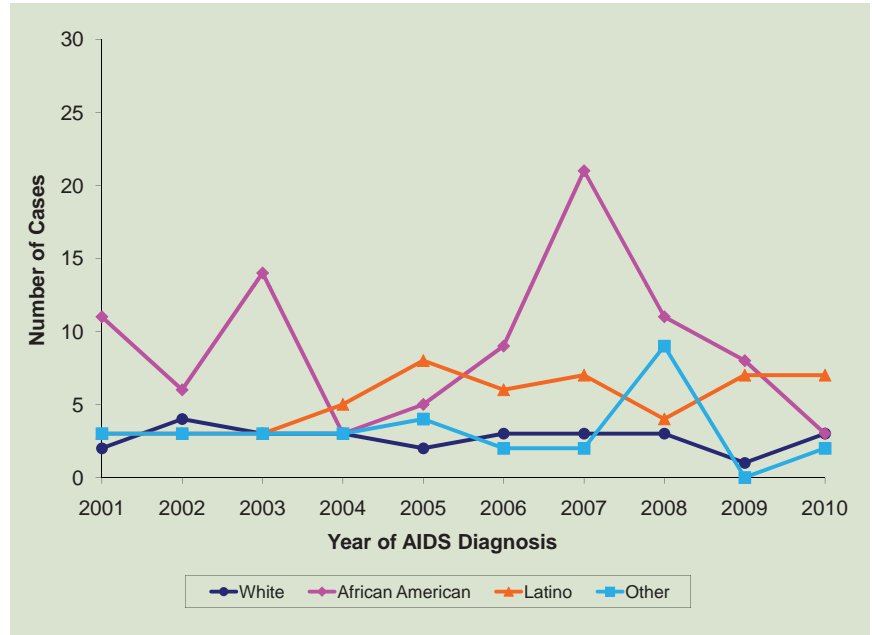
Between 2001 and 2006 the number of AIDS cases among persons who were infected with HIV through heterosexual contact was fairly level (Figure 11.1). The number of AIDS cases in non-IDU heterosexuals peaked in 2007 at 33 cases and declined to 15 in 2010. However, cases in 2009 and 2010 may be underestimated due to the delay in reporting new AIDS cases. Deaths among non-IDU heterosexuals have been stable during the last decade. The number of non-IDU heterosexuals living with AIDS increased to 284 by December 31, 2010.

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, 2001-2010, San Francisco



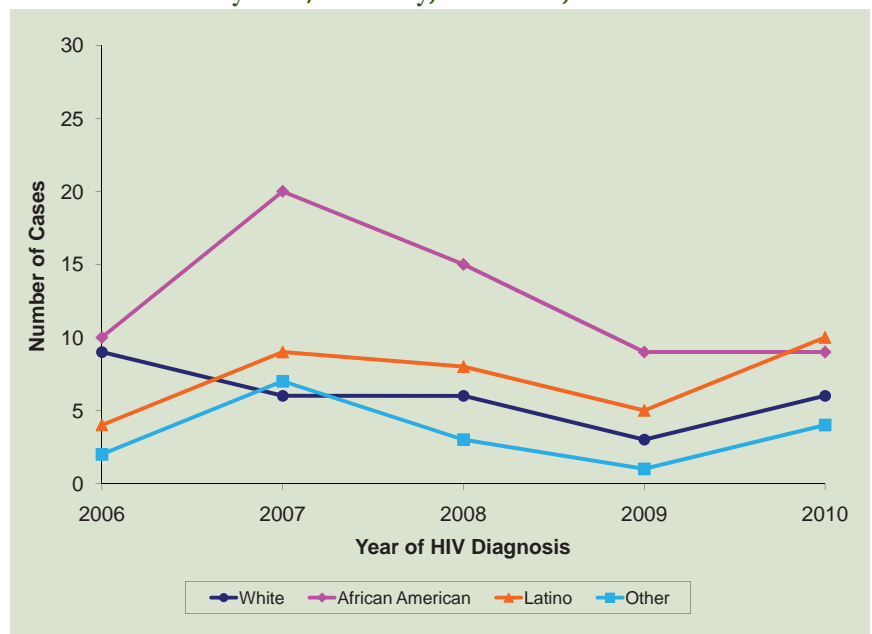
Trends in heterosexual AIDS cases by race/ethnicity are difficult to characterize due to the small number of cases (Figure 11.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 2001. The number of Latino AIDS cases was stable from 2001 to 2003 and increased thereafter.

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, 2001-2010, San Francisco



Similar to the trend for heterosexual AIDS cases by race/ethnicity, African American is the most prevalent race/ethnicity among heterosexual cases diagnosed with HIV infection (Figure 11.3). During the time period of 2006 to 2010, African Americans made up 43% of diagnosed heterosexual cases.

Figure 11.3 Cases diagnosed with HIV infection* among heterosexuals by race/ethnicity, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

The majority of heterosexually-acquired AIDS cases occurred in women (Table 11.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women, accounting for 74% of men exposed heterosexually and 46% of women exposed heterosexually.

Table 11.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2010, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	38	25%	117	37%
Sex with bisexual men	N/A	N/A	47	15%
Sex with HIV+ transfusion recipient	<5	-	<5	-
Sex with HIV+ persons of unknown risk	114	74%	149	46%

National HIV Behavioral Surveillance Data

As part of National HIV Behavioral Surveillance (NHBS), we conducted the second round of behavioral surveillance among heterosexuals at high risk for HIV infection in 2010. Census tracts with high heterosexual HIV/AIDS case burden were the focus of data collection. Of 446 participants only 1 (0.2%) tested positive for HIV infection.

Sexually transmitted diseases among heterosexuals

Figure 11.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 2000 through 2010. 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. There was an increase in 2008 that declined again by 2010.

Figure 11.4 Syphilis among heterosexual men, 2000-2010, San Francisco

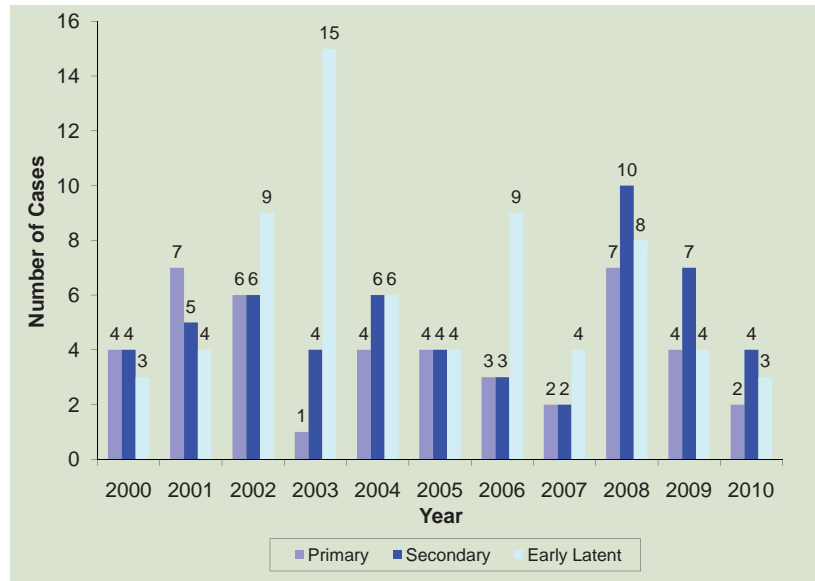
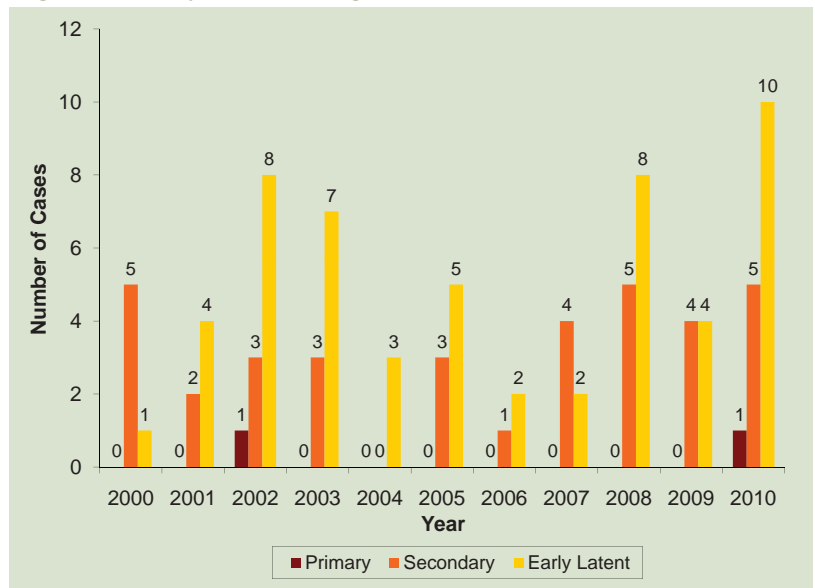


Figure 11.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 2000 through 2009. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable in recent years, with an increase in 2008 in secondary and early latent syphilis cases that has continued through 2010.

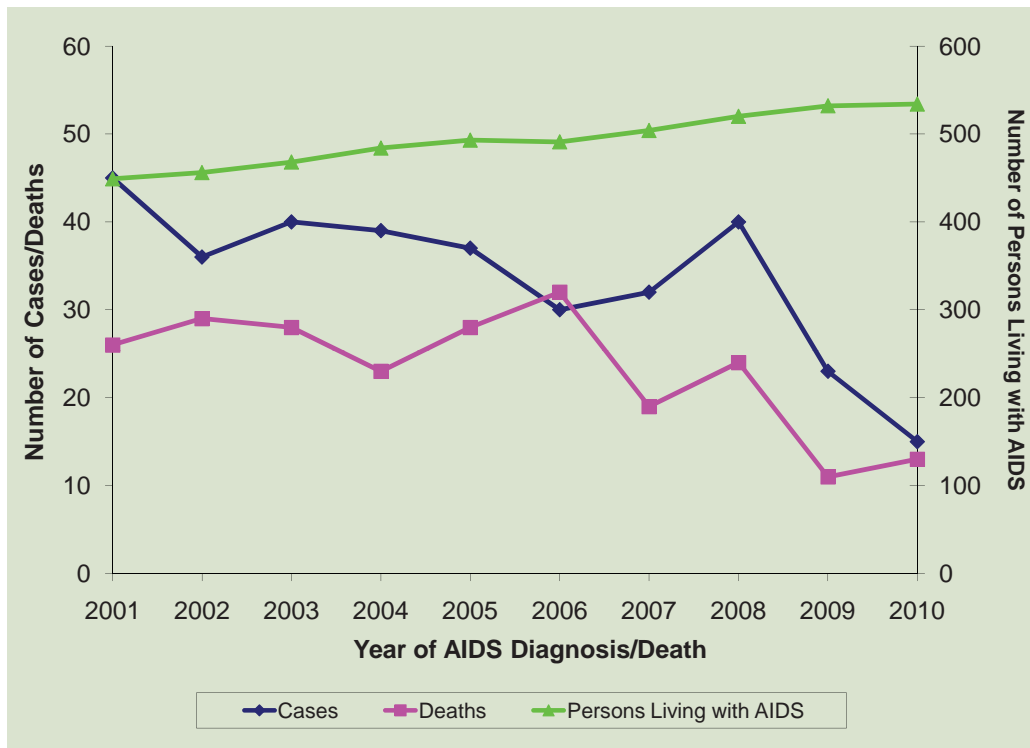
Figure 11.5 Syphilis among women, 2000-2010, San Francisco



12 HIV/AIDS among Women

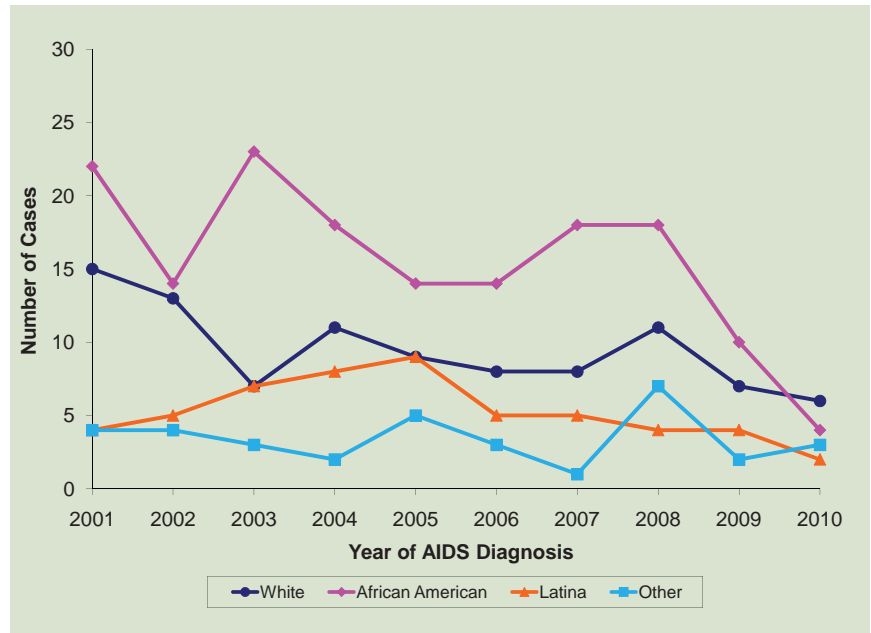
AIDS cases among women in San Francisco declined from 2001 to 2010 (Figure 12.1). The number of deaths remained fairly stable from 2001 to 2005 and declined between 2006 and 2010. The numbers of AIDS cases and deaths in recent years may be underestimated due to delays in reporting. As of December 31, 2010 there were 534 women living with AIDS.

Figure 12.1 AIDS cases, deaths, and prevalence among women, 2001-2010, San Francisco



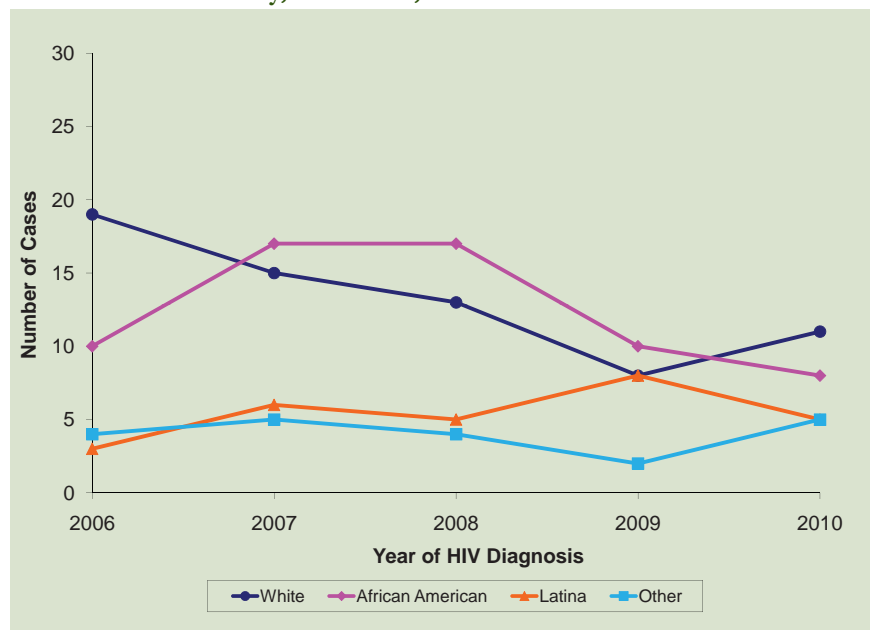
During 2001 to 2009, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 12.2). In 2010, the number of AIDS cases among white women was slightly higher than African American women.

Figure 12.2 Female AIDS cases by race/ethnicity, 2001-2010, San Francisco



African American and white are the two largest race/ethnicity groups among women diagnosed with HIV infection (Figure 12.3), although in 2009 Latina case numbers were similar to whites and African Americans. From 2006 to 2010, African Americans and whites accounted for 35% and 38% of female cases diagnosed with HIV infection, respectively.

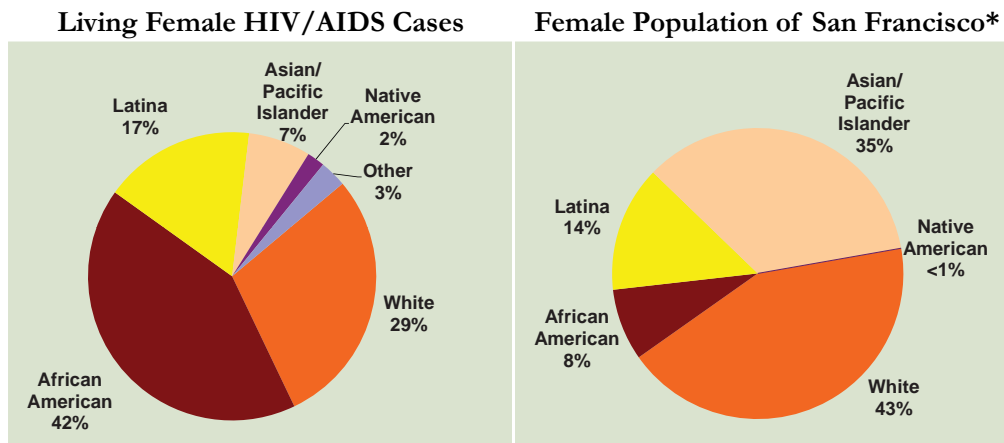
Figure 12.3 Female cases diagnosed with HIV infection* by race/ethnicity, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Compared to the female population of San Francisco, African Americans are disproportionately affected among women diagnosed with HIV/AIDS (Figure 12.4). Although African American women represent 8% of the female population, as of December 31, 2010 they accounted for 42% of the living female HIV/AIDS cases in San Francisco.

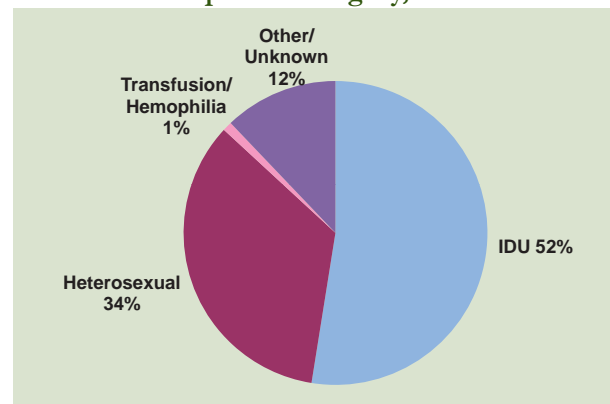
Figure 12.4 Living female HIV/AIDS cases diagnosed through December 2010 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

More than half of all living female HIV/AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 12.5). More than one third of living female HIV/AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 12.5 Living female HIV/AIDS cases diagnosed through December 2010 by exposure category, San Francisco



13 HIV/AIDS among Adolescents and Young Adults

Table 13.1 shows living HIV/AIDS cases diagnosed in San Francisco that were adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2010. There were 21 adolescents and 148 young adults living with HIV/AIDS. Among living adolescent HIV/AIDS cases, the majority were perinatally infected with HIV. African Americans accounted for the highest proportion of living adolescent cases, followed by Latinos. Among living young adult HIV/AIDS cases, the majority were MSM and Latino.

Table 13.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2010, San Francisco

	13-19 Years Old (N=21)	20-24 Years Old (N=148)
Exposure Category		
MSM	24%	69%
IDU	0%	5%
MSM IDU	0%	11%
Heterosexual	0%	3%
Perinatal	62%	5%
Other/Unidentified	14%	6%
Gender		
Male	48%	89%
Female	52%	7%
Transfemale*	0%	4%
Race/Ethnicity		
White	19%	28%
African American	38%	26%
Latino	29%	34%
Asian/Pacific Islander	5%	9%
Other/Unknown	10%	3%

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

Table 13.2 compares cases diagnosed with HIV infection among San Francisco adolescents and young adults with adolescents and young adults diagnosed nationally. Numbers of cases for the U.S. were reported using HIV/AIDS surveillance data from the 40 states with confidential name-based HIV reporting. Compared with national adolescent and young adult HIV/AIDS cases, San Francisco had a lower percentage of adolescent (13-19 years) cases.

Table 13.2 Cases diagnosed with HIV infection* among adolescents and young adults, 2007-2010, San Francisco and the United States

	Year of HIV Diagnosis			
	2007	2008	2009	2010
	Number (%)	Number (%)	Number (%)	Number (%)
San Francisco HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	9 (17)	12 (24)	4 (8)	5 (9)
Age 20-24 years at HIV diagnosis	44 (83)	39 (76)	48 (92)	48 (91)
Total	53 (100)	51 (100)	52 (100)	53 (100)
U.S. HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	1,779 (27)	1,851 (26)	1,771 (25)	N/A
Age 20-24 years at HIV diagnosis	4,700 (73)	5,156 (74)	5,327 (75)	N/A
Total	6,479 (100)	7,007 (100)	7,098 (100)	N/A

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis. U.S. data are based on reported case counts from the 40 states with confidential name-based HIV reporting in CDC HIV Surveillance Report, 2009.

14 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2010, a cumulative total of 38 pediatric AIDS cases (less than 13 years old and resided in San Francisco at time of diagnosis) had been reported. There were 15 pediatric HIV non-AIDS cases reported between 2002 and 2010. The number of pediatric HIV/AIDS cases diagnosed peaked during 1991 and 1995, and declined during 1996-2005 (Figure 14.1). There were no pediatric HIV cases diagnosed after 2005.

Of the pediatric HIV/AIDS cases, 29 were known to be alive as of December 2010, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases acquired infection from a high-risk or AIDS-diagnosed mother (Table 14.1). Sixty-two percent are female and 93% are children of color.

Figure 14.1 Pediatric HIV/AIDS cases by year of HIV diagnosis, 1980-2010, San Francisco

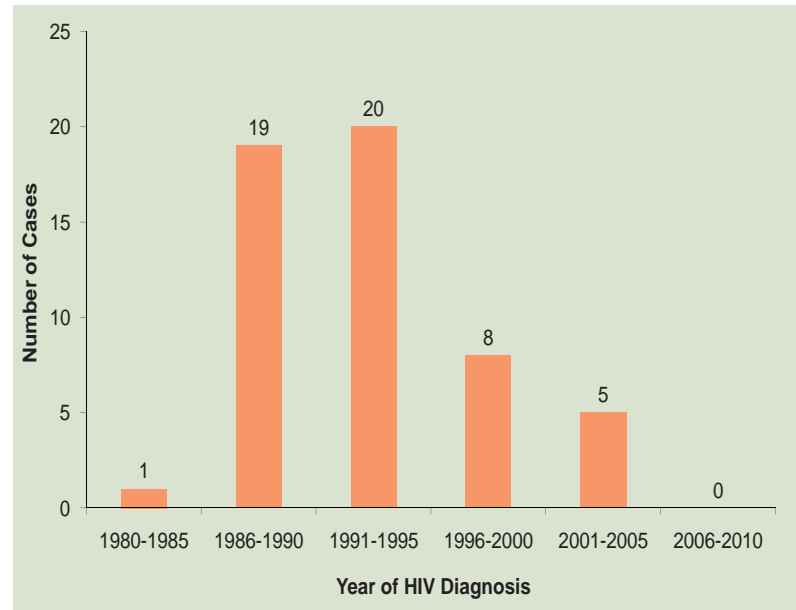


Table 14.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2010, San Francisco

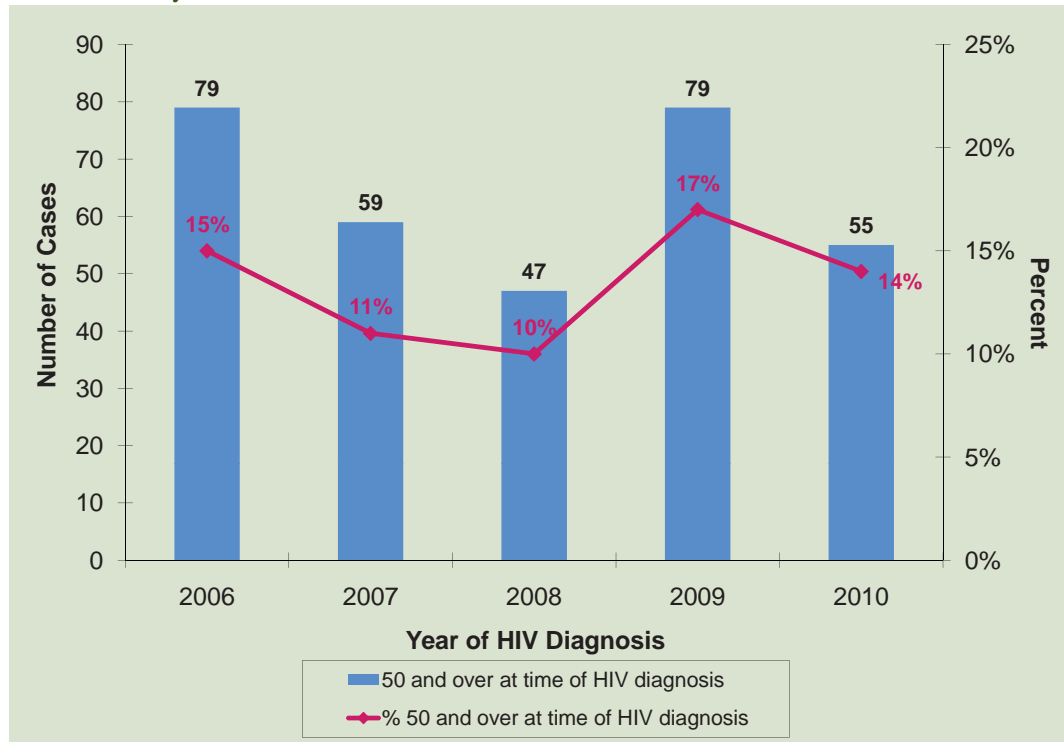
N= 29	
Exposure Category	
Perinatal	90%
Other/Unidentified	10%
Gender	
Male	38%
Female	62%
Race/Ethnicity	
White	7%
African American	31%
Latino	34%
Asian/Pacific Islander	14%
Other/Multirace	14%

15 HIV/AIDS among the Aging Population

With the advent of highly active antiretroviral therapy (HAART), persons with HIV/AIDS are living longer; in particular, those aged 50 and older comprise an increasingly larger proportion of living cases. Between 2006 and 2010, the number of living HIV/AIDS cases ages 50 and over has increased 5,211 to 7,182, and the proportion increased from 35% in 2006 to 45% in 2010. Understanding the trends and characteristics of this emerging population can assist with prevention planning and care resource allocation.

Between 2006 and 2008, the number and percent of newly diagnosed HIV cases among persons aged 50 years and older decreased (Figure 15.1). In 2009, the number of cases diagnosed among those aged 50 years and older shows a noticeable increase despite the decrease in the total number of HIV cases diagnosed in that year (Figure 1.2). In 2010, the number of newly diagnosed cases among aged 50 years and older dropped 30% from the previous year to 55 cases and returned to levels previously observed.

Figure 15.1 Number and percent of persons diagnosed with HIV infection* at age 50 years and older, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Persons diagnosed with HIV/AIDS at the age of 50 years and older differ across various demographics when compared to persons diagnosed under the age of 50. A larger proportion of persons diagnosed with HIV at age 50 years and older are women, white, African Americans, heterosexuals and injection drug users (Table 15.1).

Table 15.1 Characteristics of persons diagnosed with HIV infection in 2006-2010 by age at diagnosis, San Francisco

	Age ≥ 50 years (N=319)		Age < 50 years (N=2,078)	
	Number	(%)	Number	(%)
Gender				
Male	275	(86)	1,878	(90)
Female	38	(12)	137	(7)
Transgender	6	(2)	63	(3)
Race/Ethnicity				
White	183	(58)	1,072	(52)
African American	77	(24)	290	(14)
Latino	41	(13)	454	(22)
Other/Unknown	17	(5)	262	(12)
Exposure Category				
MSM	174	(55)	1,478	(71)
IDU	51	(16)	109	(5)
MSM IDU	35	(11)	262	(13)
Heterosexual	32	(10)	114	(6)
Other/Unidentified	27	(8)	115	(5)

The majority of persons aged 50 years and older living with HIV/AIDS are male (93%), white (69%), and MSM (75%) (Table 15.2). The gender and exposure category characteristics of persons aged 50 years and older are similar to those under 50 years old. The 50 years and older population appears more likely to be white whereas those aged under 50 have a higher proportion of Latinos.

Table 15.2 Characteristics of living HIV/AIDS cases by age group, December 2010, San Francisco

	Age ≥ 50 years (N=7,182)		Age < 50 years (N=8,679)	
	Number	(%)	Number	(%)
Gender				
Male	6,678	(93)	7,919	(91)
Female	400	(6)	511	(6)
Transgender	104	(2)	249	(3)
Race/Ethnicity				
White	4,961	(69)	4,982	(57)
African American	1,084	(15)	1,076	(12)
Latino	796	(11)	1,767	(20)
Asian/Pacific Islander	234	(3)	591	(7)
Native American	32	(1)	67	(1)
Other/Unknown	75	(1)	196	(2)
Exposure Category				
MSM	5,353	(75)	6,182	(71)
IDU	603	(8)	497	(6)
MSM IDU	860	(12)	1,367	(16)
Heterosexual	175	(2)	298	(3)
Other/Unidentified	191	(3)	335	(4)

16 HIV/AIDS among Transgender Persons

Transgender status is determined through review of information in medical records. Information on transgender status has been collected since 1996. During 2007-2010, there were a total of 60 transgender persons diagnosed with HIV in San Francisco (Table 16.1). Transgender cases comprised approximately 3% of all HIV cases diagnosed in this time period. Compared to all HIV cases diagnosed in the same time period, transgender cases were more likely to be non-white, injection drug users, and younger.

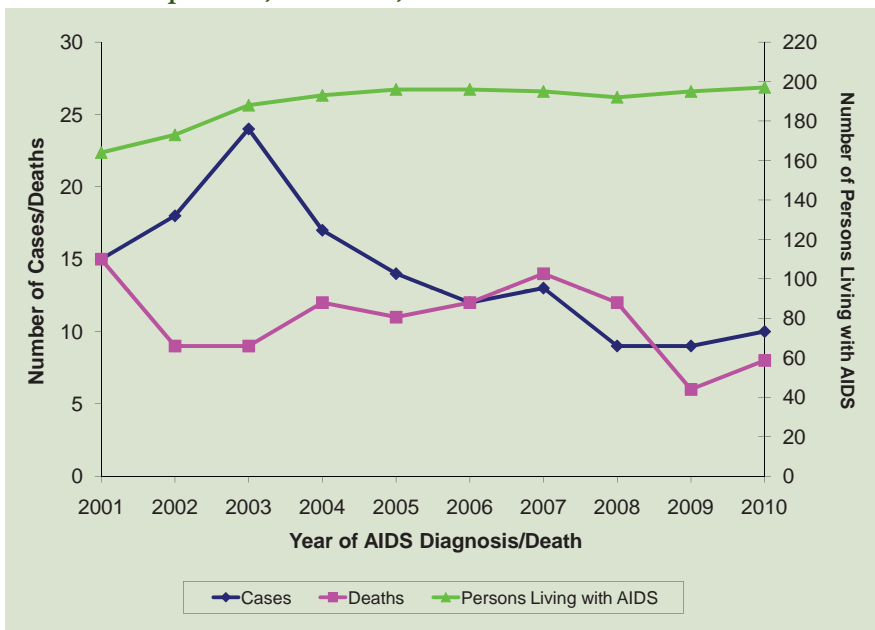
The numbers of transgender AIDS cases and deaths are small and fluctuate by year (Figure 16.1). The number of living transgender AIDS cases has leveled off since 2005. As of December 31, 2010 there were 197 living transgender AIDS cases.

Table 16.1 Characteristics of transgender* HIV cases compared to all HIV cases diagnosed in 2007-2010, San Francisco

	Transgender HIV Cases Diagnosed 2007-2010 (N=60)	HIV Cases Diagnosed 2007-2010 (N=1,877)
Race/Ethnicity		
White	20%	51%
African American	25%	15%
Latino	37%	21%
Other/Unknown	18%	13%
Injection Drug Use		
Yes	32%	19%
No	68%	81%
Age at Diagnosis (Years)		
13 - 29	43%	27%
30 - 39	28%	33%
40 - 49	22%	27%
50+	7%	13%

* See Technical Notes "Transgender Status."

Figure 16.1 AIDS cases, deaths, and prevalence among transgender persons, 2001-2010, San Francisco



Teach project

During 2010 in partnership with the San Francisco Department of Public Health HIV Prevention Section, we conducted a special study focusing on transfemales living in San Francisco. Transfemales are one of the populations most affected by HIV in San Francisco, however data on this hard to reach population are infrequently collected. We used Respondent Driven Sampling (RDS) to sample 314 transfemales over the age of 18. Key to RDS is a process of statistical adjustment that allows inference to the population. Table 16.2 describes the sample and provides estimates of the population. This study confirmed high HIV prevalence (39.5%) among transfemales in San Francisco. Ten percent of HIV-positive participants were unaware of their HIV infection. By race/ethnicity, HIV prevalence was 33.2%, 71.1%, 10.5%, 43.5% and 27.1% among Asian, African American, white, Latina and other race transfemales, respectively. Interestingly, 84.5% of transfemales have some sort of health insurance.

Table 16.2 Crude and Respondent Driven Sampling weighted characteristics among transfemales, Teach Project, San Francisco, 2010

	Crude (N= 314)		Adjusted	
	Number	(%)	(%)	95% Confidence Interval
Race/Ethnicity				
White	52	(16.6)	(17.5)	11.5 - 25.1
African American	88	(28.0)	(22.4)	14.1 - 31.6
Latino	96	(30.6)	(38.1)	26.2 - 50.5
Asian	21	(6.7)	(4.5)	1.5 - 6.5
Other	57	(18.2)	(17.5)	11.6 - 23.8
Age				
18 - 20	5	(1.6)	(1.6)	0.3 - 3.5
21 - 25	26	(8.3)	(7.7)	4.3 - 12.6
26 - 30	31	(9.9)	(9.3)	5.4 - 13.3
31 - 35	25	(7.9)	(9.2)	5.8 - 13.7
36 - 40	46	(14.7)	(16.6)	11.7 - 21.5
41 - 45	59	(18.8)	(19.0)	14.2 - 24.3
46 - 50	51	(16.2)	(14.2)	10.0 - 19.4
50+	71	(22.6)	(22.4)	15.8 - 27.9
Education				
Less than High School	84	(26.8)	(30.6)	23.6 - 36.3
High School	198	(63.1)	(62.2)	55.5 - 69.6
Some College	23	(7.3)	(4.5)	2.4 - 7.2
College Grad	9	(2.9)	(2.8)	0.9 - 5.3
Post-Grad	0	(0.0)	-	-
Income (yearly)				
<21,000	263	(83.8)	(86.5)	81.9 - 90.9
21,000 - 39,999	42	(13.4)	(11.2)	7.4 - 16.3
40,000 - 50,000	7	(2.2)	(1.5)	0.1 - 3.1
51,000 - 75,000	1	(0.3)	(0.4)	0 - 0.9
>75,000	1	(0.3)	(0.4)	0 - 1.1
Current Gender Identification				
Male	0	(0.0)	-	-
Female	150	(47.8)	(48.1)	41.0 - 55.5
Transfemale	164	(52.2)	(51.9)	44.5 - 59.0
Living Full Time as a Woman				
Yes	285	(90.8)	(88.7)	83.3 - 93.9
No	29	(9.2)	(11.3)	6.1 - 16.7
Ever Taken Hormones				
Yes	292	(92.9)	(93.2)	89.9 - 96.3
No	22	(7.1)	(6.8)	3.7 - 10.1
Ever Had Gender Enhancement Surgery				
Yes	73	(23.2)	(21.1)	15.2 - 26.4
No	241	(76.8)	(78.9)	73.6 - 84.8
Has Health Insurance				
Yes	267	(85.0)	(84.5)	79.8 - 89.6
No	47	(15.0)	(15.5)	10.4 - 20.2
HIV-Positive, Self-report				
	99	(31.5)	(36.2)	29.0 - 45.3
HIV-Positive, Tested				
	110	(35.0)	(39.5)	31.8 - 47.8

17 HIV/AIDS among Homeless Persons

A case is classified as homeless if, at the time of HIV or 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 are not classified as homeless.

Figure 17.1 shows a decline in number of homeless AIDS cases diagnosed between 2001 and 2005. Since 2000, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 6% and 19%. For 2010, almost one-fifth of diagnosed AIDS cases (19%) were homeless at the time of diagnosis.

Among all cases diagnosed with HIV infection, the number of homeless cases increased slightly between 2006 to 2010 (Figure 17.2). Homeless persons accounted for 9% to 13% of all cases diagnosed with HIV infection each year. For persons diagnosed in 2010, 13% of cases diagnosed with HIV infection were homeless at the time of HIV diagnosis.

Figure 17.1 Number and percent of homeless AIDS cases by year of diagnosis, 2001-2010, San Francisco

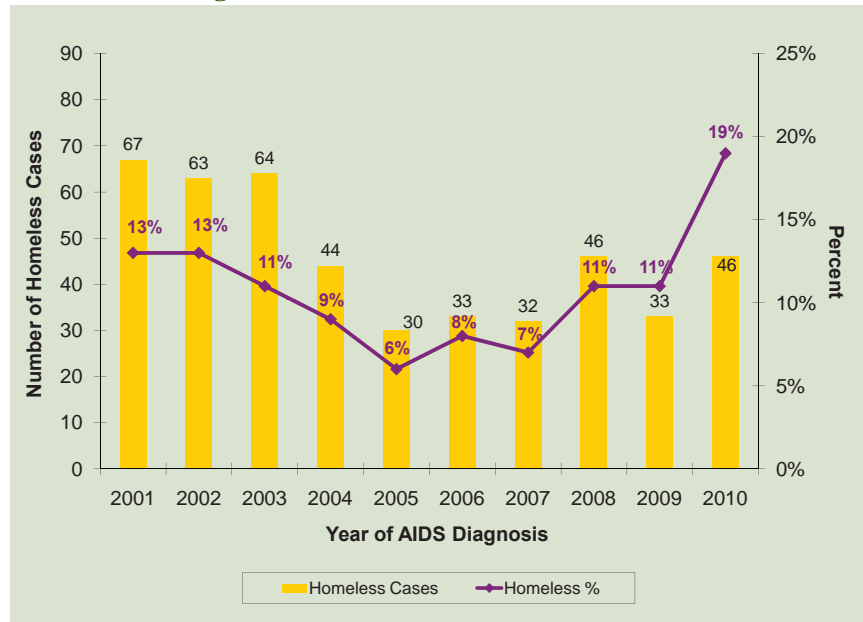
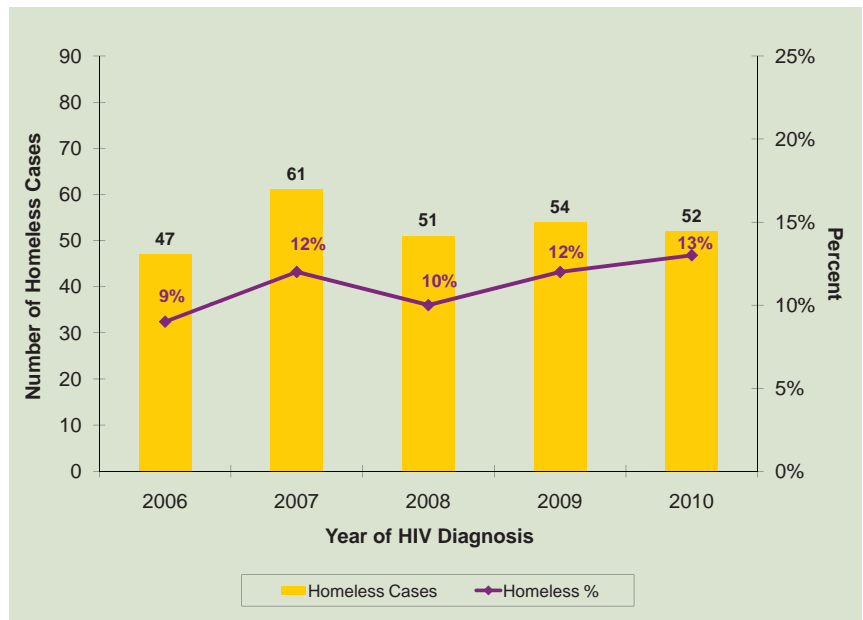


Figure 17.2 Number and percent of homeless cases diagnosed with HIV infection* by year of diagnosis, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Compared to all HIV/AIDS cases diagnosed in 2006 to 2010, persons who were homeless at their HIV/AIDS diagnosis (diagnosed in 2006 to 2010) were more likely to be women, transfemale, African American, and injection drug users. (Table 17.1).

Table 17.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2006-2010, San Francisco

	Homeless HIV/AIDS Cases 2006-2010 (N=265)	HIV/AIDS Cases 2006-2010 (N=2,397)
Gender		
Male	79%	90%
Female	14%	7%
Transfemale*	7%	3%
Race/Ethnicity		
White	45%	52%
African American	31%	15%
Latino	17%	21%
Other/Unknown	7%	12%
Exposure Category		
MSM	37%	69%
IDU	27%	7%
MSM IDU	25%	12%
Heterosexual	6%	6%
Other/Unidentified	5%	6%
Age at Diagnosis (years)		
0 - 19	2%	2%
20 - 29	28%	24%
30 - 39	24%	33%
40 - 49	29%	27%
50+	18%	13%

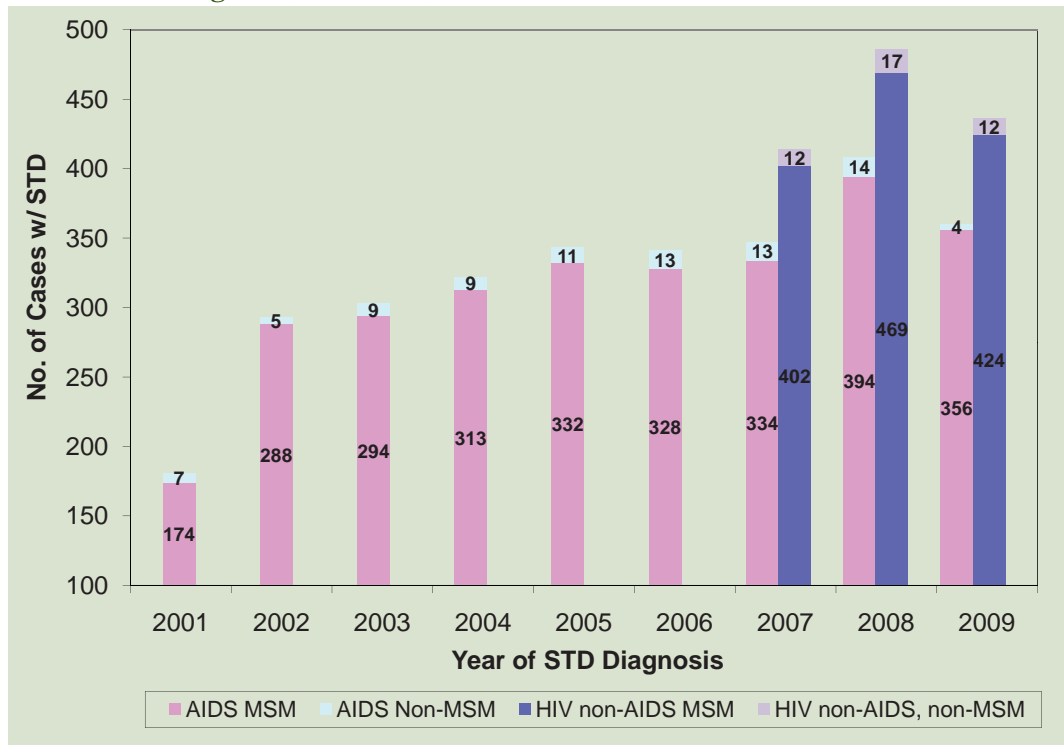
* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

18 Sexually Transmitted Diseases among Persons with HIV/AIDS

The occurrence of sexually transmitted disease (STD) diagnosis among persons living with HIV/AIDS is an important marker for sexual risk behavior and potential HIV transmission. Diagnosis of STD occurring among persons with HIV/AIDS was determined through a computerized match of the HIV/AIDS and STD case registries through 2009. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons living with AIDS had a pronounced increase in 2002, a moderate increase in 2008, followed by a decrease in 2009 (Figure 18.1).

HIV non-AIDS cases reported after 2006 were included in the match to identify STD diagnosis among persons with HIV infection who had not developed AIDS. Similar to the trend among persons living with AIDS, the number of STD cases among persons living with HIV non-AIDS increased from 2007 to 2008, and declined in 2009. Increases in STDs among persons with HIV/AIDS in 2002 and 2008 coincided with steep increases in early syphilis reported in 2002 and the moderate rise in 2008, particularly among MSM diagnosed with HIV (Figure 9.7). In 2009, rectal gonorrhea and male gonococcal proctitis continued to decline among HIV-positive MSM (Figure 9.6). All STDs occurred after the HIV/AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 18.1 Number of HIV/AIDS cases diagnosed with an STD by year of STD diagnosis, 2001-2009, San Francisco



19 Access to Care among Persons with HIV/AIDS

Estimate of unmet need for HIV medical care

We conducted an analysis to estimate unmet need for primary care for San Francisco residents diagnosed with HIV/AIDS. Persons with HIV/AIDS who did not have at least one CD4 or viral load test or did not receive antiretroviral therapy during the 12-month period from July 1, 2008 through June 30, 2009 were considered to have an unmet need for care (see Technical Notes, Estimate of Unmet Need, for data sources and methods).

We estimated that there were 10,049 persons living with AIDS (PLWA) and 8,676 persons living with HIV non-AIDS (PLWH) in San Francisco during this time. A total of 971 (10%) PLWA and 2,353 (27%) PLWH did not receive primary medical care during that time period (Table 19.1). The unmet need for care among PLWA ranged from 6% to 13%. A greater proportion of PLWH had unmet need for care than PLWA. This most likely reflects asymptomatic disease among persons with HIV who had not advanced to AIDS. The proportion of PLWH with unmet need for care, particularly women, highlights the need for prompt referral of persons diagnosed with HIV to medical care and for expanded efforts to retain patients in medical care.

Table 19.1 Unmet need* by demographic and risk characteristics among persons living with HIV/AIDS, July 2008-June 2009, San Francisco

	Persons Living with AIDS N=10,049		Persons Living with HIV/non-AIDS N=8,676		All Persons Living with HIV/AIDS N=18,725	
	with unmet need Number	%	with unmet need Number	%	with unmet need Number	%
Total	971	10%	2,353	27%	3,324	18%
Gender						
Male	924	10%	1,962	25%	2,886	17%
Female	47	8%	391	52%	438	33%
Race/Ethnicity						
White	675	10%	1,388	27%	2,063	18%
African American	133	9%	391	28%	524	19%
Latino	124	8%	331	24%	455	16%
Asian/Pacific Islander	29	6%	118	26%	147	16%
Other/Unknown	10	11%	125	49%	135	38%
Age in Years (as of June 2009)#						
20 - 29	18	11%	167	26%	185	23%
30 - 39	135	13%	618	32%	753	25%
40 - 49	427	11%	939	27%	1,366	19%
50 - 59	276	8%	488	25%	764	14%
60+	113	8%	136	21%	249	12%

* See Technical Notes "Estimate of Unmet Need."

The age category 0-19 years was omitted due to the small sample size.

Assessing access to medical care using CD4 or viral load test as a marker for care

Despite widespread efforts to promote HIV testing, prevention and care, a significant percentage of HIV infected individuals are not receiving or accessing care early in their infection. We assessed receipt of medical care after HIV diagnosis using initial CD4 or viral load test as a marker for entry into medical care. The majority (89%) of persons diagnosed with HIV during 2007-2009 received medical care within 12 months of their HIV diagnosis (Table 19.2). Eighty-six percent of those diagnosed during this time period have CD4 tests within 12 months of HIV diagnosis. The median of the initial CD4 count was 388 cells/ μ L.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, non whites, and persons reported without a risk. Lower initial CD4 count may indicate diagnosis late in the course of HIV disease or delayed entry into care. People diagnosed with AIDS, non whites, heterosexuals, and persons over 50 years of age had a lower initial CD4 count. The CD4 count closest to HIV diagnosis increased over time from 2007 to 2009.

Table 19.2 Percent of HIV cases diagnosed between 2007 and 2009 receiving at least one CD4 or viral load test within 12 months of HIV diagnosis and the median of initial CD4 counts, San Francisco

	Number*	Percent received at least one CD4 or viral load test within 12 months following HIV diagnosis	Median of initial CD4 counts [#] (cells/ μ L)
Total	1,570	89%	388
HIV Status			
HIV infection (not AIDS)	1,198	87%	452
Concurrent HIV and AIDS diagnosis [‡]	146	100%	133
AIDS diagnosed \geq 1 months after HIV diagnosis	226	95%	273
Gender			
Male	1,456	89%	388
Female	114	92%	386
Race/Ethnicity			
White	804	93%	426
African American	243	86%	351
Latino	337	86%	328
Asian/Pacific Islander	134	84%	319
Other/Unknown	52	85%	464
Exposure Category			
MSM	1,108	90%	389
IDU	108	93%	387
MSM IDU	185	90%	437
Heterosexual	92	93%	288
Other/Unidentified	77	65%	340
Age at HIV Diagnosis (years)			
13 – 29	402	88%	428
30 – 39	541	89%	410
40 – 49	429	90%	355
50+	198	91%	315
Year of HIV Diagnosis[§]			
2007	565	89%	372
2008	520	90%	393
2009	485	89%	415

* Excludes 23 cases that were diagnosed at a facility outside of San Francisco and 30 cases who died within six months of diagnosis.

Median of initial CD4 counts measured within 12 months following HIV diagnosis.

‡ AIDS was diagnosed in the same month and year of HIV infection diagnosis.

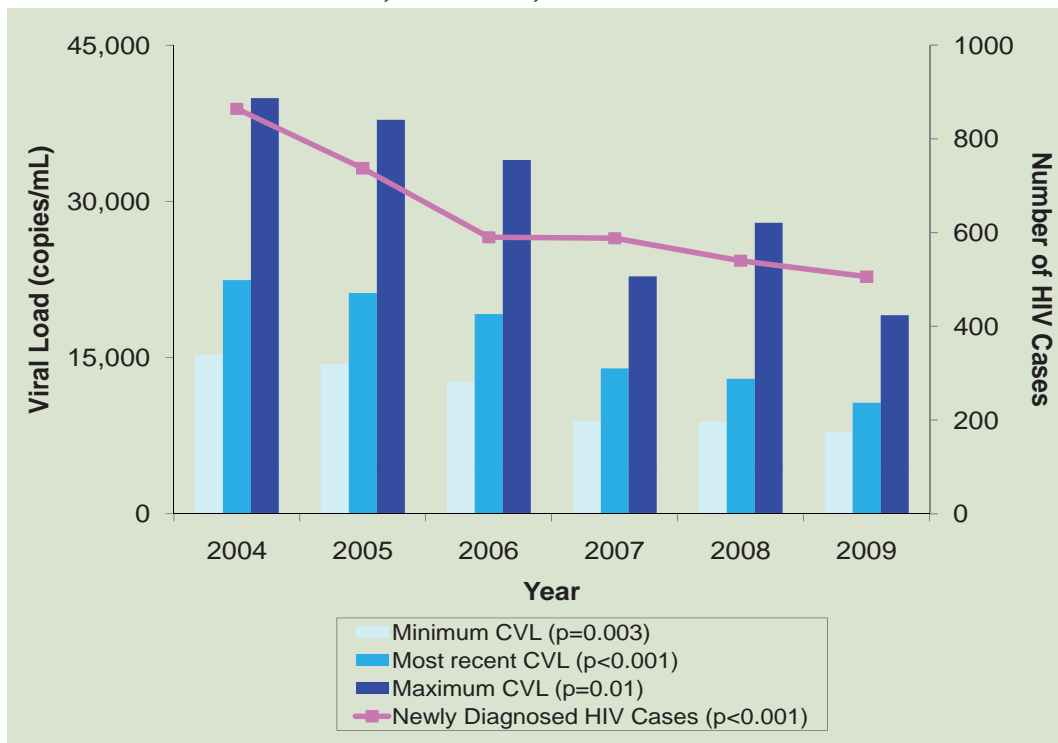
§ Data include persons who were diagnosed in 2007-2009 based on a confirmed HIV test and had a self report of previous HIV test prior to 2007.

Community viral load

We estimated community viral load (CVL) in three ways: taking the average of the most recent viral load, average of the lowest viral load, and average of the highest viral load, for cases who had a viral load in the year. We assessed the relationship of these CVL measures to newly diagnosed and reported HIV cases using Poisson regression.

Most recent, minimum, and maximum measures of CVL all declined significantly during 2004-2009 ($p < 0.001$, $p = 0.003$, and $p = 0.010$) and were associated with decreases in newly diagnosed and reported HIV cases (all $p < 0.001$) (Figure 19.1).

Figure 19.1 Minimum, most recent, maximum community viral load and newly diagnosed HIV cases, 2004-2009*, San Francisco



* Data include persons receiving care in San Francisco who resided in other jurisdictions at time of HIV diagnosis.

20 Special Report: Medical Monitoring Project

The Medical Monitoring Project (MMP) is a national ongoing CDC-funded HIV/AIDS supplemental surveillance project. Multi-stage probability proportional-to-size sampling is used to recruit HIV-infected adults receiving care at outpatient health facilities. Information about care utilization, clinical outcomes, resource needs, and HIV risk behaviors is collected through patient interviews and medical chart reviews. MMP data provide information unavailable through routine surveillance and aim to:

- describe clinical outcomes and co-morbidities among HIV-positive patients in care
- characterize HIV care and ancillary support services received and the quality of these services
- estimate the prevalence of behaviors that can transmit HIV infection
- determine access to and use of prevention services among HIV-positive patients in care
- identify gaps in HIV care and supportive service needs to target HIV prevention and care efforts
- measure adherence to antiretroviral therapy regimens

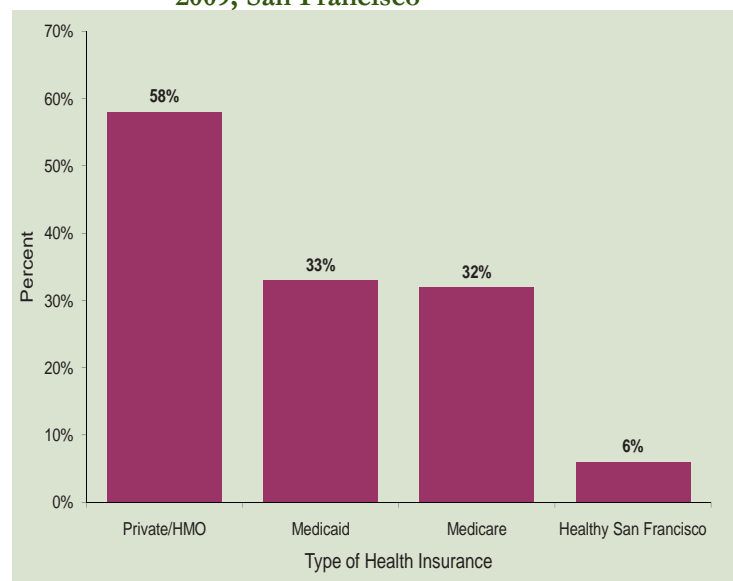
Sociodemographic characteristics

We interviewed 541 MMP participants in San Francisco from 2007 to 2009. Of these, 62% were recruited from private/HMO medical care facilities and 38% from public facilities. The majority of participants were male (94%), 40 years or older at time of interview (84%), white (57%), identified as gay/lesbian (80%) and had some college or higher education (81%). Homelessness in the past 12 months was reported by 11% of participants.

Health insurance coverage

Most participants reported being insured for the entire 12 months prior to interview (89%), while 6% reported being insured for part of the past 12 months and 4% were not insured at all during the past 12 months. Among those insured at least part of the past 12 months, 58% reported having private/HMO insurance, 33% Medicaid, 32% Medicare and 6% reported receiving care through the Healthy San Francisco program (Figure 20.1).

Figure 20.1 Type of health insurance* during the 12 months prior to interview, MMP participants, 2007-2009, San Francisco



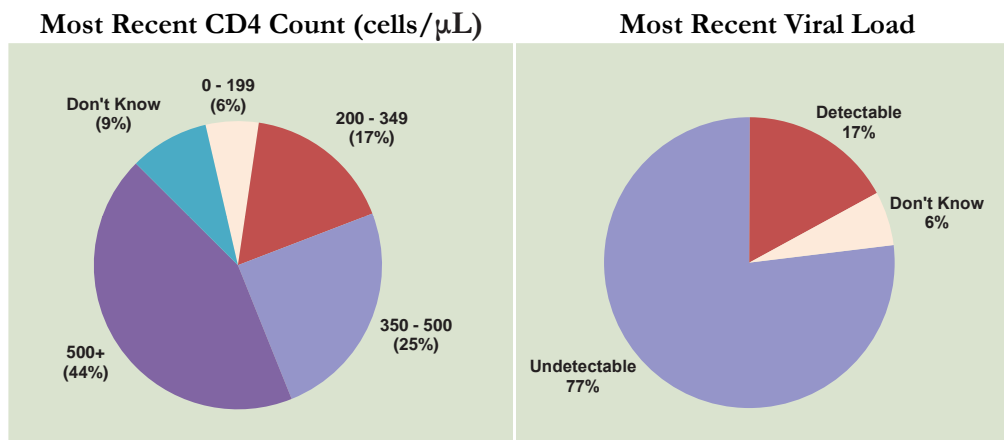
* Health insurance types were not mutually exclusive; patients could report more than one type of health insurance.

HIV care

Nearly all MMP participants reported having a usual place for routine care (99.8%), ever having a CD4 test (99.1%) and ever having a viral load test (98.7%). Figure 20.2 shows participants' self reported most recent CD4 and viral load test results. The majority had a CD4 count over 350 cells/ μ L (69%) and undetectable viral load (77%). Forty-two percent reported ever being told by a physician that they had AIDS. Many participants had a previous HIV test before their first HIV positive test (N=143, 43%). Fifty-seven (17%) reported being offered partner notification services at the time of their HIV diagnosis and 36% reported someone at their provider's office discussed safe sex practices with them in the past 12 months.

Ever initiating antiretroviral therapy (ART) was reported by 503 (93%) participants and 483 (89%) reported taking ART at the time of the interview. Ten percent of the participants taking ART at time of interview reported taking a drug holiday in the past 12 months, defined as purposely stopping ART for at least two consecutive days. Further analysis found that participants who were over the age of 50 were more likely than younger participants to be taking ART at the time of interview. Participants who reported a high school education or less compared to those with some college or higher, being homeless at any point in the past 12 months, being without health insurance for part or the entire past 12 months and those who were incarcerated in the past 12 months were less likely to be on ART at the time of interview.

Figure 20.2 Most recent self-reported CD4 count and viral load test results, MMP participants, 2007-2008*, San Francisco



* This information was only collected during the 2007-2008 cycles.

Supportive services

SSDI benefits, assistance finding dental care, medicine through AIDS drug assistance program (ADAP), mental health counseling and HIV case management were the most frequently reported supportive services needed by HIV-infected adults in care in San Francisco. Table 20.1 displays the services not needed, services needed and received, and services needed but not received. Unmet needs, defined as a service reported needed but not received in the past 12 months, included assistance finding dental care (12%), mental health counseling (10%), HIV peer support (9%), social services (6%) and HIV case management (6%). Overall, 28% of all participants reported at least one unmet need in the past 12 months.

Table 20.1 Top five unmet needs for supportive services reported by MMP respondents, 2007-2009, San Francisco

Service	Service Not Needed		Service Needed and Received		Service Needed but Not Received	
	Number	(%)	Number	(%)	Number	(%)
Assistance finding dental care	276	(51)	201	(37)	64	(12)
Mental health	326	(60)	163	(30)	52	(10)
HIV peer support*	150	(71)	42	(20)	19	(9)
Social services [#]	232	(71)	78	(24)	19	(6)
HIV case management	352	(65)	155	(29)	34	(6)

* Data are available for 2009 only.

Data are available for 2007 and 2008 only.

Sexual behavior

Table 20.2 displays sexual behavior among sexually active MMP participants in San Francisco. The majority of men who had sex with men (MSM) reported two or more partners in the past 12 months (71%), while the majority of men who had sex with women (MSW) and women who had sex with men (WSM) reported one partner (72% and 100%, respectively). Approximately one-third of sexually active participants had a STD diagnosis in the past 12 months. Most participants reported that both partners disclosed their HIV status before sex; 80% of MSM, 56% of MSW and 83% of WSM. Sixty-six percent of MSM, 31% of MSW and 83% of WSM reported unprotected anal or vaginal sex with their most recent sexual partner in the 12 months prior to the interview.

Table 20.2 Sexual behavior among sexually active MMP participants, 2007-2008, San Francisco

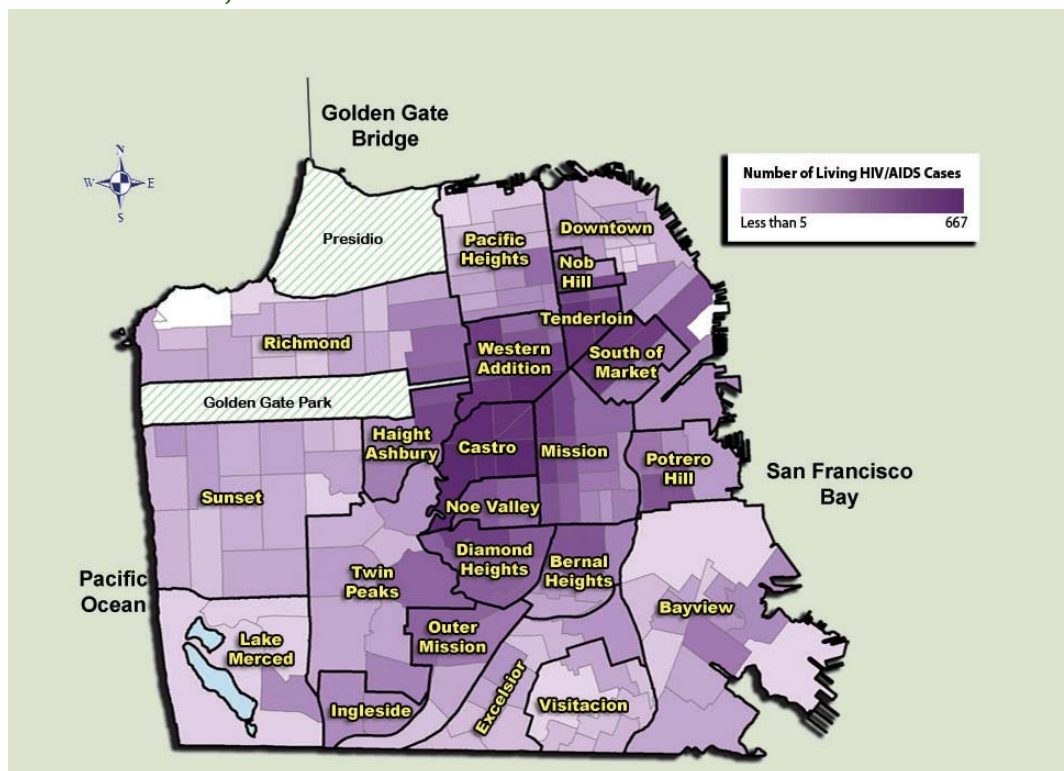
	Men Who Have Sex With Men*		Men Who Have Sex With Women*		Women Who Have Sex With Men	
	Number	(%)	Number	(%)	Number	(%)
Total	235	(100)	18	(100)	6	(100)
Sexual behavior past 12 months						
Number of partners						
1	69	(29)	13	(72)	6	(100)
2-9	85	(36)	4	(22)	0	(0)
10+	81	(35)	1	(6)	0	(0)
Unprotected Anal/Vaginal Sex	131	(72)	5	(31)	6	(100)
STD diagnosis past 12 months	61	(26)	5	(28)	2	(33)
Any exchange sex	13	(6)	1	(6)	0	(0)
Sexual behavior with most recent sexual partner						
Type of last partner						
Main	123	(53)	10	(56)	6	(100)
Casual	110	(47)	8	(44)	0	(0)
Unprotected Anal/Vaginal Sex	103	(66)	4	(31)	5	(83)
Drugs and/or Alcohol before or during sex	65	(28)	7	(39)	0	(0)
Both partners disclosed status before sex	166	(80)	10	(56)	5	(83)
Unprotected sex with unknown status/serodiscordant partner	33	(14)	2	(11)	3	(50)

* Men who have sex with men and men who have sex with women are not mutually exclusive categories.

21 Geographic Distribution of HIV/AIDS

Map 21.1 illustrates the geographic distribution of the number of HIV/AIDS living cases in San Francisco by census tract as of December 31, 2010. The data capture the census tract and neighborhood at HIV/AIDS diagnosis for San Francisco residents and do not necessarily reflect current residence. Census tract level data provide an enhanced understanding of varying numbers of cases within a neighborhood. The Castro has the highest number of living cases ($n=2,749$) followed by the Western Addition ($N=1,754$), Mission ($N=1,463$), and Tenderloin ($N=1,438$).

Map 21.1 Geographic distribution of persons living with HIV/AIDS, December 2010, San Francisco

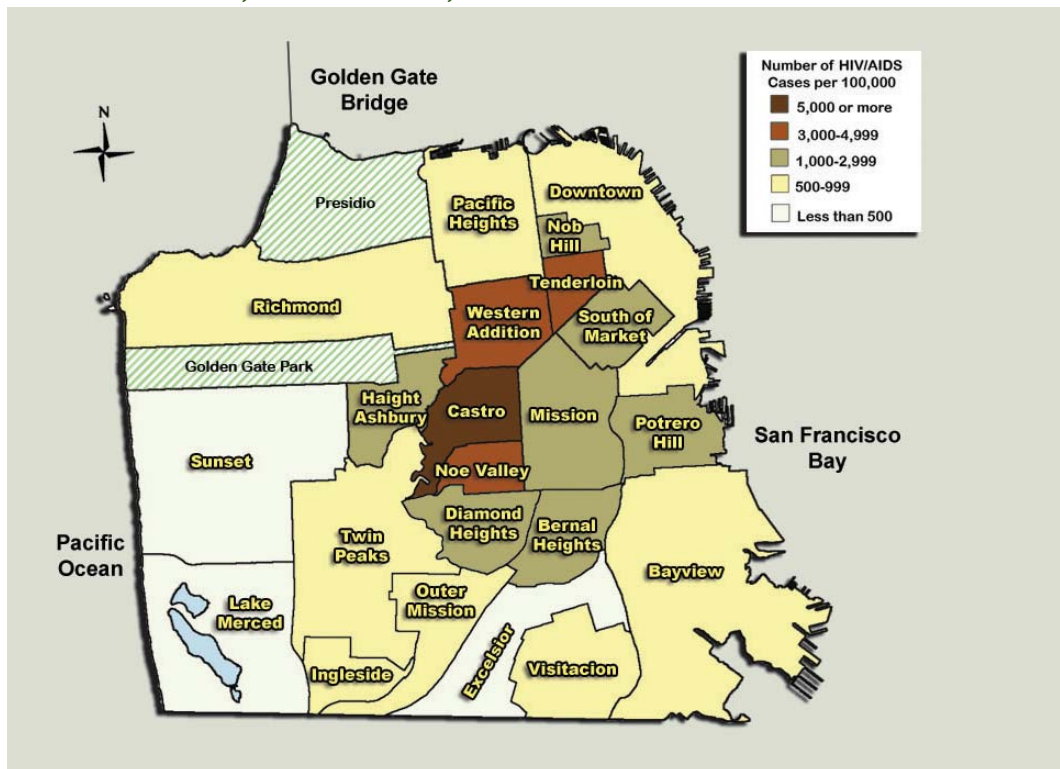


* Living homeless HIV/AIDS cases ($N=1,001$) are not displayed on this map.

Geographic Distribution of HIV/AIDS

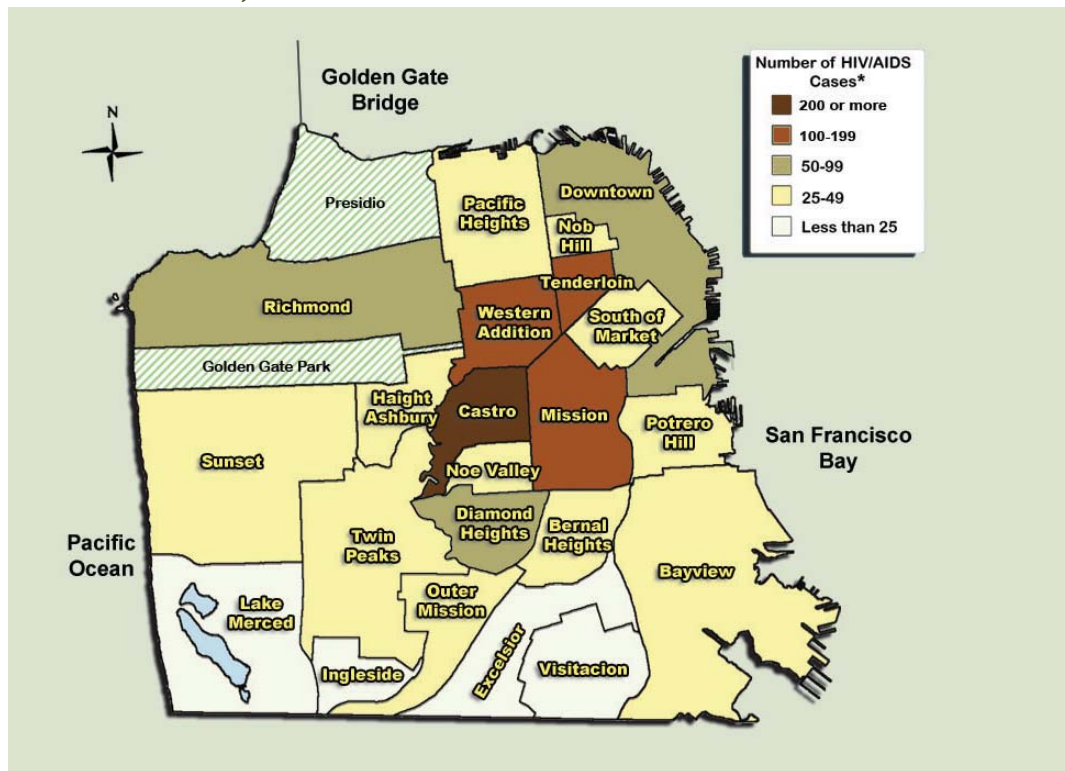
Map 21.2 illustrates the HIV/AIDS prevalence rates among San Francisco residents using the newly released 2010 Census data to estimate the total population size in each neighborhood. The prevalence rate is defined as the number of living HIV/AIDS cases divided by the total population in each neighborhood. The Castro has the highest prevalence rate of 11,558 cases per 100,000 (11.6%), which is more than twice as high as Western Addition, the second highest prevalence rate at 4.4%.

Map 21.2 Geographic distribution of HIV/AIDS prevalence rates per 100,000 population, December 2010, San Francisco



The newly diagnosed HIV/AIDS cases from 2006 to 2010 were examined and mapped by exposure category. Map 21.3 shows the Castro with the highest number of MSM cases (N=251), followed by the adjacent neighborhoods of Mission, Western Addition, and the Tenderloin.

Map 21.3 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among MSM, San Francisco

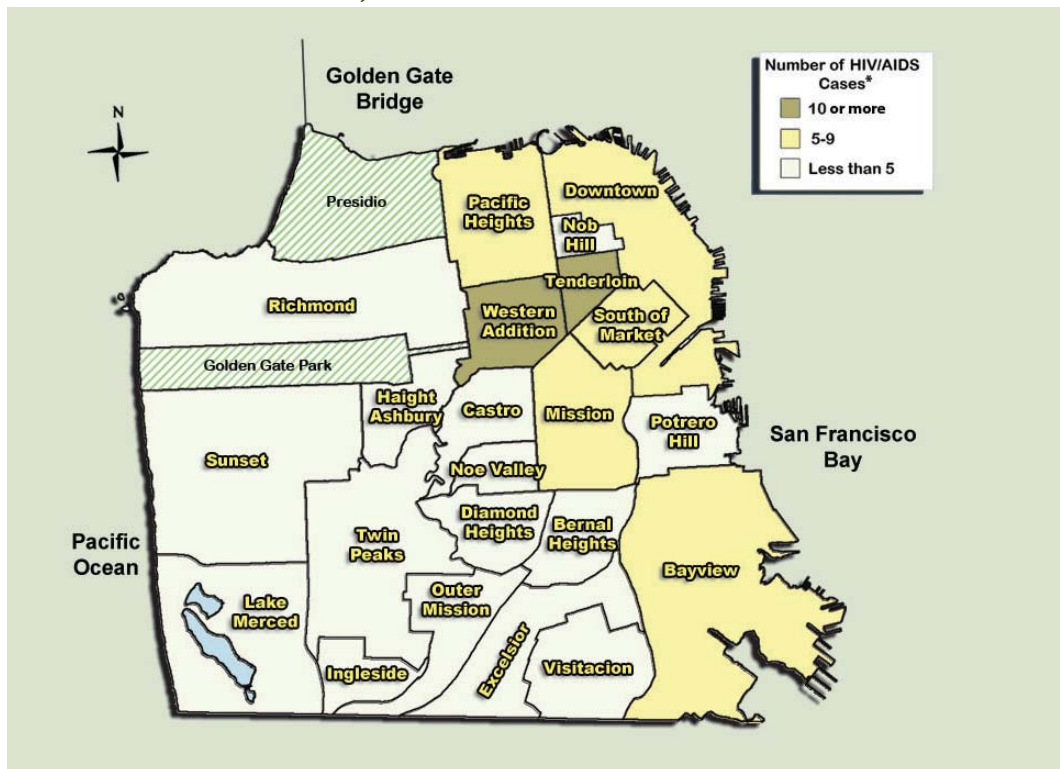


* Newly diagnosed homeless MSM cases in this time period (N=92) are not displayed on the map.

Geographic Distribution of HIV/AIDS

Those who were homeless at time of diagnosis represent the majority of newly diagnosed HIV/AIDS cases among injection drug users (IDU) in 2006 to 2010 ($N=67$, not displayed). The neighborhoods of Tenderloin and Western Addition also had higher numbers of IDU HIV/AIDS cases ($N=18$ and $N=11$, respectively) (Map 21.4).

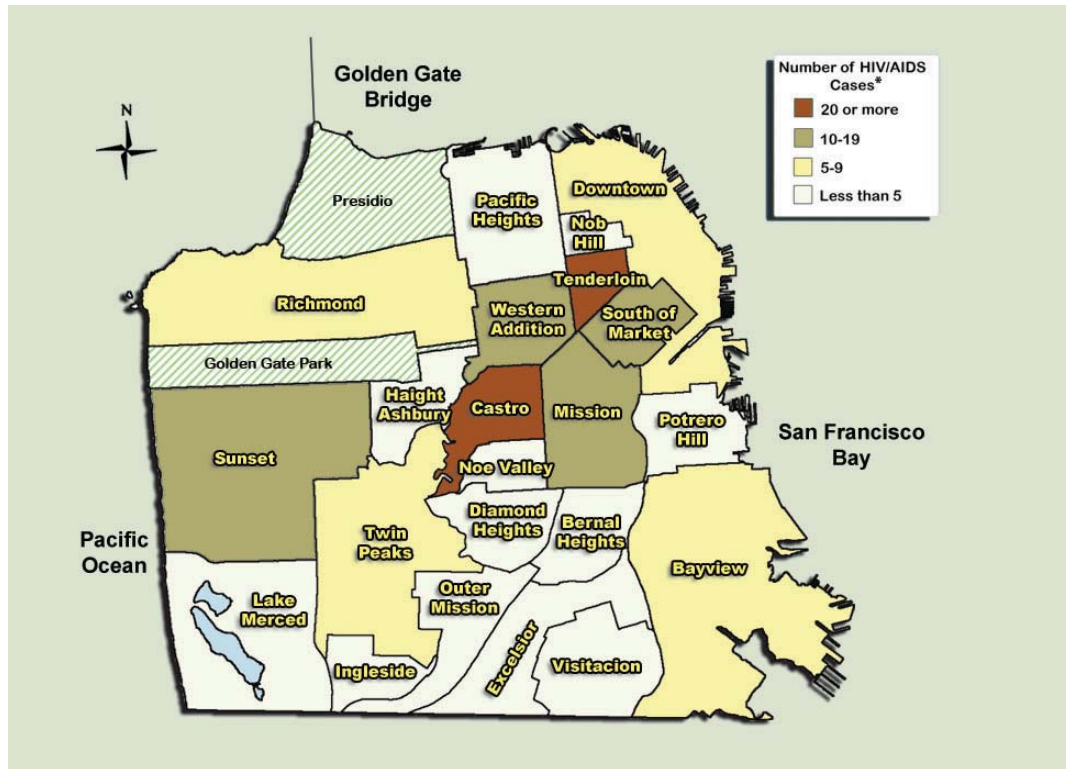
Map 21.4 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among non-MSM IDU, San Francisco



* Newly diagnosed homeless non-MSM IDU cases in this time period ($N=67$) are not displayed on the map.

Map 21.5 illustrates the neighborhood-level distribution of newly diagnosed HIV/AIDS cases among MSM IDU. The homeless population (not displayed) comprised the highest number of diagnosed HIV/AIDS cases in 2006-2010 (N=68), followed by the Tenderloin (N=42). Similar to the distribution of MSM cases, the bordering neighborhoods of South of Market, Mission, Western Addition, and Castro also exhibited higher numbers of cases.

Map 21.5 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among MSM IDU, San Francisco

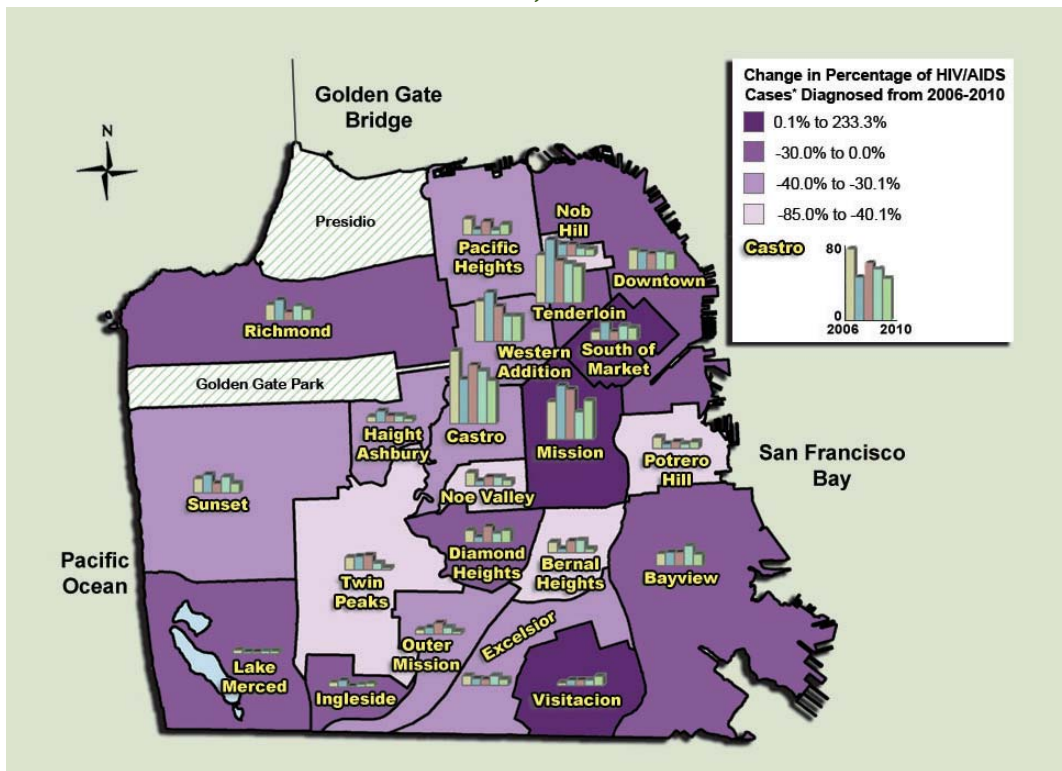


* Newly diagnosed homeless MSM IDU cases in this time period (n=68) are not displayed on the map.

Geographic Distribution of HIV/AIDS

We examined the distribution of newly diagnosed HIV/AIDS cases from 2006 through 2010 by neighborhood. The bars in each neighborhood show the number of cases diagnosed from 2006 to 2010 and the relative fluctuations per year. The base color for each neighborhood is the percentage change in the number of cases diagnosed between 2006 and 2010. The percentage change was calculated as the difference in the number of cases diagnosed between 2006 and 2010 divided by the number of cases in 2006. Map 21.6 shows the majority of the neighborhoods in the city have reported a decrease in HIV diagnoses. Despite the general decrease in newly diagnosed cases in San Francisco, some neighborhoods report increasing numbers of cases from 2006 to 2010 (South of Market, Mission, Visitacion). In particular, Visitacion Valley has continued to show an increase in cases since 2006 although the numbers are small. Newly diagnosed homeless HIV/AIDS cases increased 10.6% during this time period (not displayed).

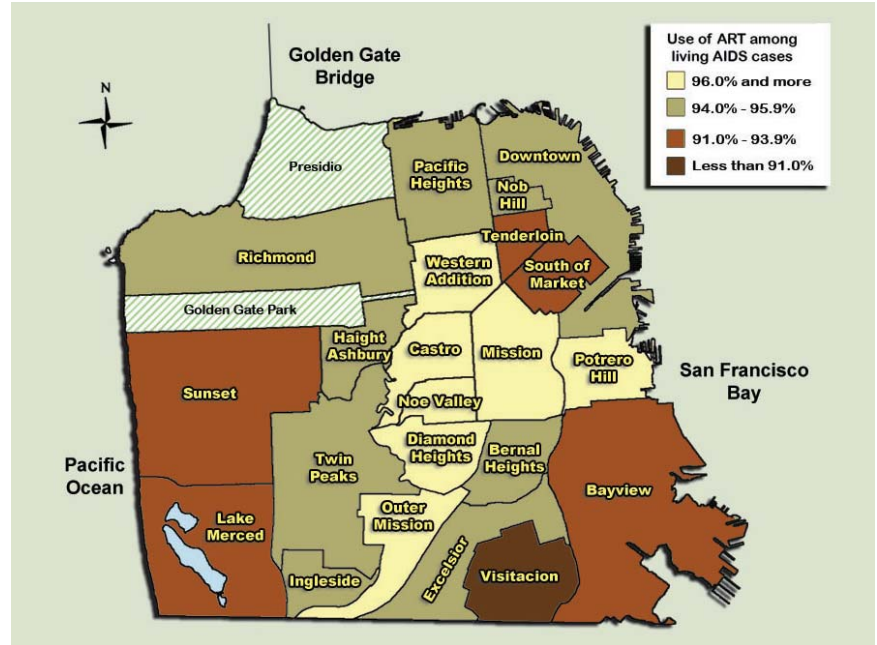
Map 21.6 Geographic distribution of changes in number of HIV/AIDS cases diagnosed between 2006 and 2010, San Francisco



* Newly diagnosed homeless HIV/AIDS cases in this time period are not displayed on the map.

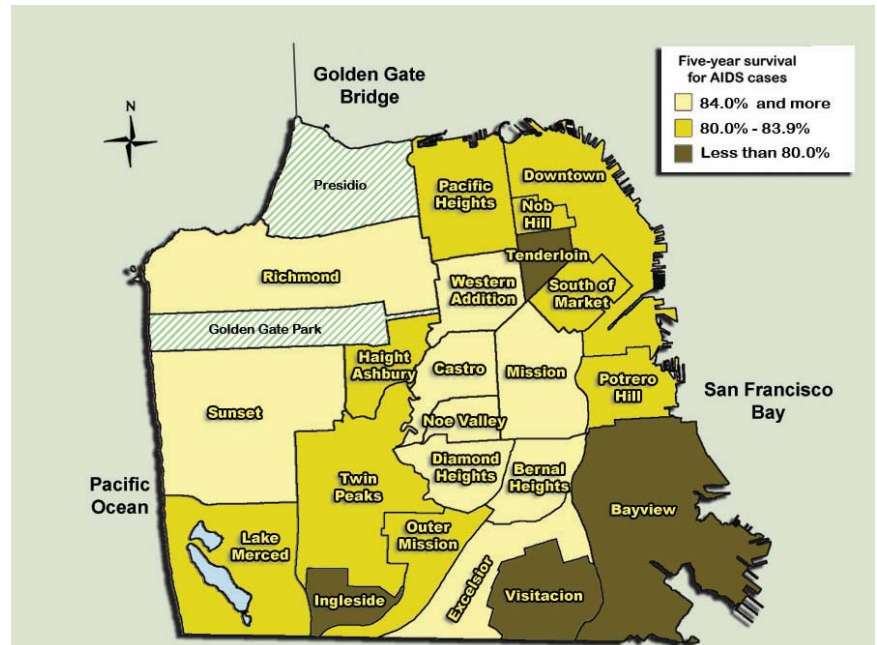
A high correlation between levels of antiretroviral therapy (ART) use and survival following AIDS for neighborhoods is noted in Maps 21.7 and 21.8. High levels of ART use are observed throughout the city in neighborhoods that also exhibited higher percentage of five-year AIDS survival. Neighborhoods with lower use of ART and lower AIDS survival included Visitacion, Bayview, and Tenderloin. Homeless persons at time of AIDS diagnosis had the lowest percentage of receiving ART (82%).

Map 21.7 Geographic distribution of ART use among persons living with AIDS, December 2010, San Francisco



* Data exclude persons who were lost-to-follow-up.

Map 21.8 Geographic distribution of five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009, San Francisco

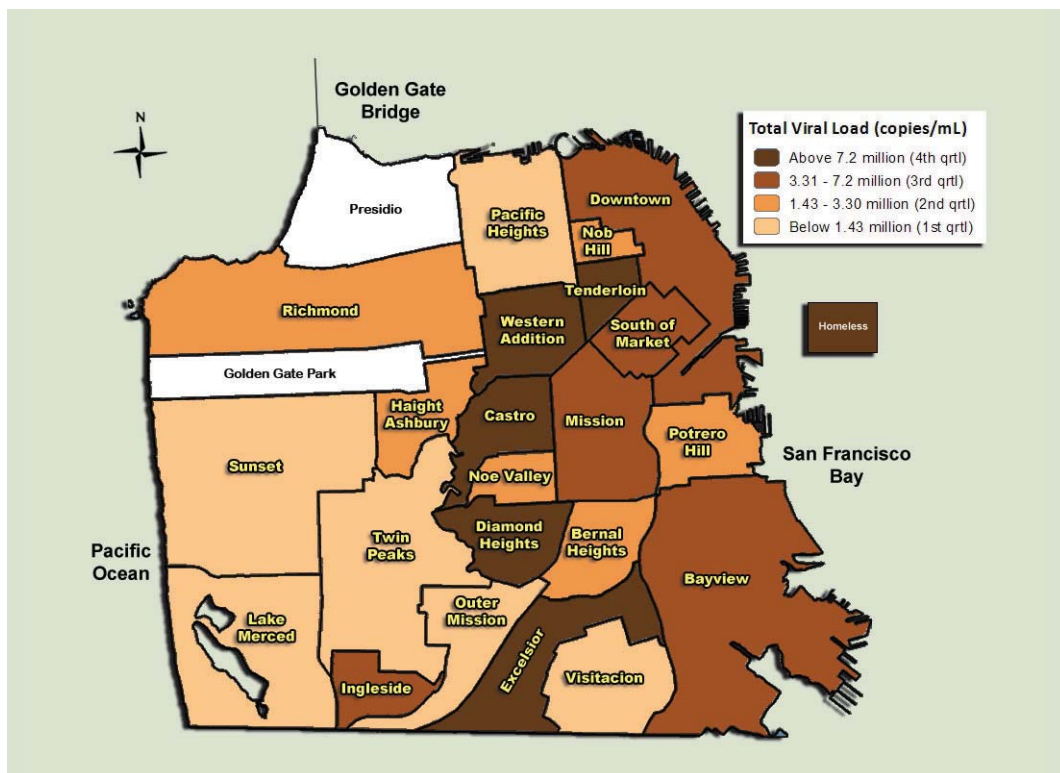


Geographic Distribution of HIV/AIDS

Community viral load (CVL) is a new population-based biomarker of community-level viral burden or overall level of infectiousness. Total CVL, defined as the sum of the most recent viral loads of all reported HIV infected individuals in a community, reflects the total burden of HIV disease. Mean CVL is the total of the most recent viral load divided by the number of HIV-infected individuals in the community. These two measures of CVL may reflect both the success of HIV prevention and care interventions (Das et al. PLoS ONE 2010).

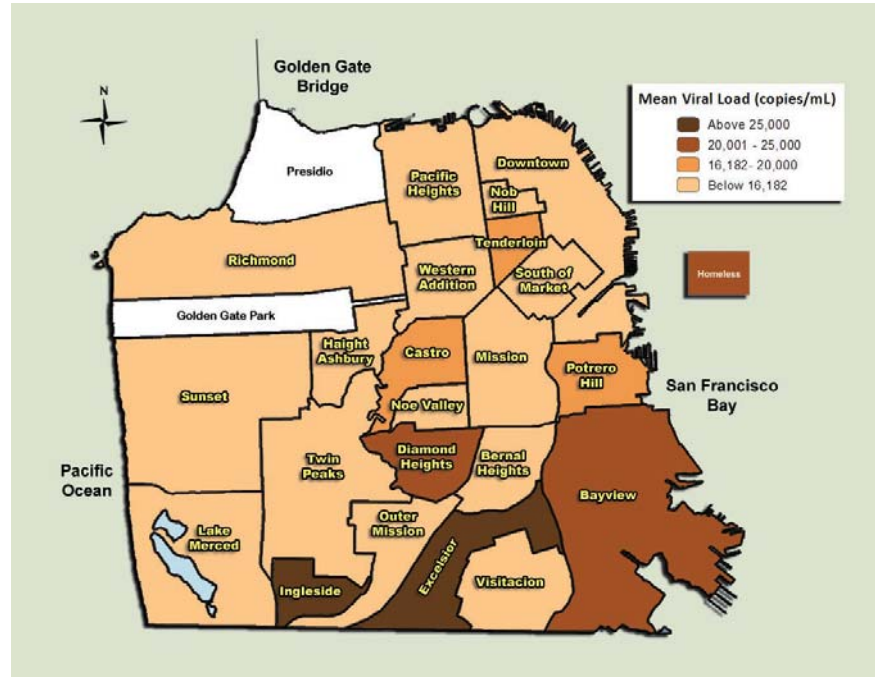
For 2009, Map 21.9 shows the geographic distribution of total CVL; total CVL is highest where there is the greatest number of people living with HIV/AIDS. However, both the Castro and the Tenderloin have similar total CVL, even though the Castro has twice as many people living with HIV/AIDS than the Tenderloin. This may reflect higher viral loads among the residents of the Tenderloin as compared to those in the Castro.

Map 21.9 Geographic distribution of total community viral load, December 2009, San Francisco

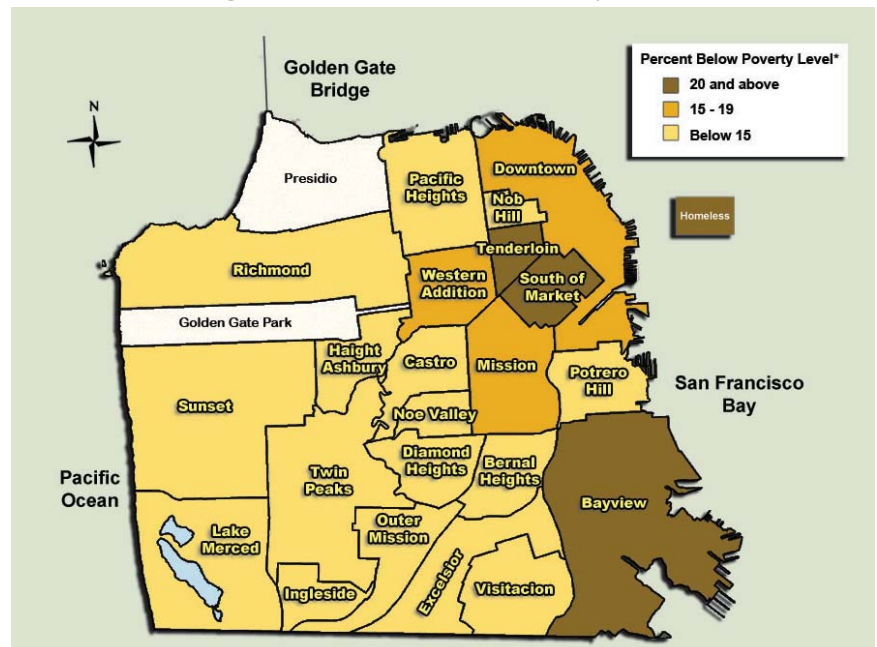


Map 21.10 shows the differences in mean CVL in San Francisco. Ingleside, Excelsior, Diamond Heights, Bayview, and homeless individuals have the highest mean CVL, followed by the neighborhoods of Castro, Potrero Hill, and Tenderloin. Many of the neighborhoods with higher mean CVL are the poor neighborhoods in the city (Map 21.11).

Map 21.10 Geographic distribution of mean community viral load, December 2009, San Francisco



Map 21.11 Geographic distribution of poverty level, San Francisco



* Based on 2000 census data.



Technical Notes

HIV/AIDS Surveillance Methods

San Francisco HIV/AIDS 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/AIDS 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 and AIDS cases reporting in San Francisco is evaluated through a series of sensitivity studies conducted each year at various medical providers and facilities. Data on patients receiving care at the medical provider or facility are matched to the San Francisco HIV/AIDS registry and the completeness of case reporting is calculated. In 2010 sensitivity studies were conducted at various sites in San Francisco and we received data from three sources including: counseling and testing sites funded by the San Francisco Department of Public Health, San Francisco Department of Public Health medical setting sites, and Medical Monitoring Project sampled patients receiving care from January 2010 to April 2010. The completeness of HIV case reporting and AIDS case reporting was found to be greater than 99% for the three data sources.

Publications of our HIV/AIDS data include persons who were residents of San Francisco at the time they were diagnosed with HIV/AIDS. Our data also include San Francisco residents who were diagnosed in other jurisdictions.

HIV/AIDS Case 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. These rates are calculated separately for males and females. The annual populations are not available for transgender persons. Population denominators for the years 2001-2010 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050 data files, May 2004 (www.dof.ca.gov).

AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with at least one low CD4 (count < 200 or percent < 14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of 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). The most recent NDI match included deaths that occurred through December 31, 2008. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2008, whichever was more recent.

Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computerized system to determine the underlying and contributory causes of death (www.cdc.gov/nchs/about/major/dvs/im.htm). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through matches with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses, if listed on death certificates, are included in the category of ‘HIV/AIDS’ cause of death.

Opportunistic Illness Incidence

Annual incidence rates were calculated as the number of adults and adolescents who were diagnosed with the opportunistic illness of interest in a given year divided by the number of adults and adolescents living with AIDS during that year who were at risk of acquiring that opportunistic illness. We excluded cases diagnosed with that particular opportunistic illness prior to the start of that calendar year. Cases who were excluded from the analysis of one opportunistic illness might be included in the analysis of another opportunistic illness.

Grouping of Data Categories

Data regarding certain racial/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS 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 race/ethnicity categories rather than aggregating into the group “Other”. The label “Other” in the Exposure Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring AIDS perinatally, or persons of unidentified risk.

Transgender Status

In September 1996, the San Francisco Department of Public Health 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/AIDS 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/AIDS because data collected for HIV/AIDS 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/AIDS case reporting.

Estimate of ART Use

Using surveillance data to estimate use of antiretroviral therapy (ART) will most likely result in an underestimate of the extent of its 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 at which many persons have not yet begun treatment. The San Francisco Department of Public Health 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 at some point following diagnosis after the date that the case report was completed. Follow-up information is also 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.

Estimate of Unmet Need

Care information was obtained from viral load and CD4 test results reported from laboratories and from medical record reviews, and supplemented by data provided from the California State Office of AIDS. A data file is provided by the California State Office of AIDS to supplement our local data for unmet need estimate. The data file contains unduplicated records for persons with HIV/AIDS in San Francisco who were documented as having received care during July 1, 2008 to June 30, 2009. This information was obtained from Medi-Cal, AIDS Drug Assistance Program (ADAP), Kaiser Permanente Northern California, AIDS Regional Information and Evaluation System (ARIES), and the State HIV/AIDS Reporting System (HARS) records. Because data sources beyond the San Francisco HIV/AIDS case registry are included in this data file, the total numbers of cases in Table 19.1 are larger than the numbers presented in other tables of this report. This is most likely a reflection of differences in the residence at the time of diagnosis and the residence at the time of receipt of care.

The total number of persons living with AIDS (PLWA), the total number of persons living with HIV non-AIDS (PLWH), the proportion of PLWA who did not receive care from a sample of chart reviews, and the number of PLWH who did not receive care were determined. The unmet need estimates did not include undiagnosed cases of HIV infection or infected individuals who are not aware of their infection.

D Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2010, San Francisco 3

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1,236	1,629	1,763	2,161
Deaths	0	8	32	111	273	534	807	877	1,038	1,275
Persons Living with AIDS	3	21	88	251	535	860	1,289	2,041	2,766	3,652

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2,046	2,285	2,328	2,073	1,787	1,563	1,081	805	695	576
Deaths	1,364	1,505	1,641	1,599	1,592	1,481	987	422	401	356
Persons Living with AIDS	4,334	5,114	5,801	6,275	6,470	6,552	6,646	7,029	7,323	7,543

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	556	514	497	562	480	474	440	449	414	314
Deaths	348	322	323	302	305	312	288	269	228	205
Persons Living with AIDS	7,751	7,943	8,117	8,377	8,552	8,714	8,866	9,046	9,232	9,341

	2010
Cases	247
Deaths	136
Persons Living with AIDS	9,452

Figure 2.1 Number of AIDS cases by race/ethnicity, 2001-2010, San Francisco . . . 8

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	295	293	284	261	274	245	261	215	163	118
African American	98	89	105	78	84	80	79	79	61	47
Latino	74	76	126	110	85	81	73	69	62	51
Other	47	39	47	31	31	34	36	51	28	31

Figure 2.2 Number of cases diagnosed with HIV infection by race/ethnicity, 2006-2010, San Francisco 8

	2006	2007	2008	2009	2010
White	296	279	249	230	201
African American	78	80	79	73	57
Latino	104	101	110	97	83
Other	42	66	54	60	58

Figure 2.3 Annual rates of male AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco 9

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	148	147	143	129	138	121	128	103	77	54
African American	232	230	253	187	216	206	190	194	161	131
Latino	113	111	186	168	122	125	111	110	100	84
Other	33	25	34	20	19	23	26	31	18	20

Figure 2.4 Annual rates of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco 9

	2006	2007	2008	2009	2010
White	141	132	119	110	94
African American	227	197	205	205	151
Latino	172	152	174	138	130
Other	28	44	37	41	39

Figure 2.5 Annual rates of female AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco 10

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	9	8	4	7	5	5	5	7	4	4
African American	69	44	74	59	47	47	61	61	34	14
Latina	8	10	14	16	18	10	10	8	8	4
Other	3	3	2	1	4	2	1	5	1	2

Figure 2.6 Annual rates of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco 10

	2006	2007	2008	2009	2010
White	11	9	8	5	6
African American	33	57	57	34	27
Latina	6	12	10	15	10
Other	3	3	3	1	3

Figure 2.7 Number of male AIDS cases by exposure category, 2001-2010, San Francisco 11

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MSM	304	297	352	310	287	282	281	253	200	137
IDU	40	40	53	23	37	21	28	15	23	16
MSM IDU	86	93	76	75	85	78	73	74	40	51
Other	24	13	17	16	14	17	22	23	19	18

Figure 2.8 Number of male cases diagnosed with HIV infection by exposure category, 2006-2010, San Francisco 11

	2006	2007	2008	2009	2010
MSM	361	331	347	323	244
IDU	23	25	17	16	19
MSM IDU	66	66	42	50	54
Other	25	40	37	24	43

Figure 2.9 Number of female AIDS cases by exposure category, 2001-2010, San Francisco 12

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
IDU	30	24	25	29	21	20	14	20	14	6
Heterosexual	10	10	14	6	14	8	16	17	6	7
Other	5	2	1	4	2	2	2	3	3	2

Figure 2.10 Number of female cases diagnosed with HIV infection by exposure category, 2006-2010, San Francisco 12

	2006	2007	2008	2009	2010
IDU	19	14	14	10	10
Heterosexual	13	22	18	11	15
Other	4	7	7	7	4

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2003-2008 29

	2003	2004	2005	2006	2007	2008
Accident	95	78	92	111	134	105
Non-AIDS cancer	89	84	79	76	80	73
Heart disease	107	75	82	83	78	57
HIV/AIDS	126	115	105	79	69	52
Suicide	57	44	41	48	55	48
Homicide	27	34	34	35	36	41
Liver disease	32	24	35	26	25	24
Mental disorder	47	59	58	49	26	22
Cerebrovascular	15	18	17	9	11	7
COPD	9	4	10	6	7	4

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2003-2008 30

	2003	2004	2005	2006	2007	2008
Non-AIDS cancer	78	81	80	72	59	62
Accident	27	30	31	40	30	43
Heart disease	30	23	28	22	14	21
Suicide	14	13	11	11	12	10
HIV/AIDS	16	16	14	15	7	10
Mental disorder	16	8	23	13	7	9
Cerebrovascular	13	5	14	10	8	9
Liver disease	7	8	5	3	7	6
Homicide	4	2	4	5	8	5
COPD	6	7	3	1	4	2

Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2008 31

	White	African American	Latino
HIV/AIDS	25	57	25
Heart disease	21	98	25
Non-AIDS cancer	26	90	9
Accident	43	187	53

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents by age group, 2008 31

	0-29	30-39	40-49	50-59	60+
HIV/AIDS	0	6	45	38	21
Heart disease	2	8	30	145	888
Accident	17	31	49	101	101
Non-AIDS cancer	6	4	32	174	816
Homicide	31	12	20	11	4
Suicide	5	18	22	29	19

Figure 6.1 Incidence rates of opportunistic illnesses among adults and adolescents with AIDS, 1993-2008, San Francisco 34

	PCP	KS	Esophageal Candidiasis	Wasting Syndrome	MAC	CMV	Cytomegalovirus Retinitis	HIV Encephalopathy
1993	11.7%	6.4%	2.8%	4.9%	7.5%	3.2%	4.0%	3.0%
1994	10.1%	6.5%	2.8%	5.7%	6.7%	3.6%	3.5%	3.3%
1995	7.8%	5.7%	2.8%	6.8%	6.1%	3.4%	3.5%	2.9%
1996	5.3%	3.9%	2.2%	4.3%	3.2%	1.7%	2.1%	1.6%
1997	3.2%	1.9%	1.3%	2.1%	1.1%	1.0%	0.5%	0.8%
1998	2.9%	1.1%	0.8%	1.9%	0.9%	0.3%	0.6%	0.9%
1999	2.3%	0.9%	0.9%	1.7%	0.7%	0.4%	0.5%	0.8%
2000	2.6%	0.9%	1.1%	2.2%	0.5%	0.3%	0.4%	0.7%

	PCP	KS	Esophageal Candidiasis	Wasting Syndrome	MAC	CMV	Cytomegalovirus Retinitis	HIV Enceph- alopathy
2001	2.3%	0.9%	0.7%	1.8%	0.7%	0.3%	0.3%	0.5%
2002	1.6%	0.6%	0.7%	1.1%	0.5%	0.3%	0.2%	0.5%
2003	1.8%	0.8%	0.5%	0.9%	0.3%	0.2%	0.1%	0.4%
2004	1.5%	0.7%	0.5%	0.7%	0.3%	0.2%	0.1%	0.3%
2005	1.2%	0.6%	0.6%	0.6%	0.3%	0.3%	0.1%	0.2%
2006	1.0%	0.4%	0.6%	0.3%	0.3%	0.1%	0.2%	0.1%
2007	1.0%	0.4%	0.5%	0.3%	0.2%	0.2%	0.1%	0.2%
2008	0.8%	0.4%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%

Figure 8.1 Trends in insurance status at time of initial HIV diagnosis by gender, 2006-2010, San Francisco 42

Male	2006	2007	2008	2009	2010
Public	13%	15%	22%	22%	28%
Private	49%	37%	41%	38%	32%
None	33%	39%	28%	22%	22%
Female	2006	2007	2008	2009	2010
Public	50%	60%	62%	50%	69%
Private	8%	12%	8%	11%	3%
None	39%	14%	26%	32%	14%
Transfemale	2006	2007	2008	2009	2010
Public	33%	29%	50%	68%	60%
Private	33%	14%	0%	0%	0%
None	33%	52%	30%	32%	20%

Figure 9.1 AIDS cases, deaths, and prevalence among MSM, 2001-2010, San Francisco 44

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	405	407	452	402	386	371	366	335	249	198
Deaths	249	250	231	234	235	228	216	179	174	106
Persons Living with AIDS	6,940	7,097	7,318	7,486	7,637	7,780	7,930	8,086	8,161	8,253

Figure 9.2 AIDS cases among MSM by race/ethnicity, 2001-2010, San Francisco . . 45

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	260	261	255	242	242	226	235	193	141	104
African American	48	44	54	42	51	47	35	45	33	29
Latino	62	70	106	93	70	69	64	58	52	41
Other	35	32	37	25	23	29	32	39	23	24

Figure 9.3 Cases diagnosed with HIV infection among MSM by race/ethnicity, 2006-2010, San Francisco 45

	2006	2007	2008	2009	2010
White	260	244	215	205	170
African American	45	35	45	51	25
Latino	93	84	91	83	62
Other	36	55	48	53	49

Figure 9.6 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2000-2010, San Francisco 47

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Male Rectal Gonorrhea (HIV+)	76	88	106	123	145	198	235	233	194	162	156
Male Rectal Gonorrhea (HIV-)	91	112	145	136	178	185	230	169	176	187	202
Male Gonococcal Proctitis (HIV+)	24	20	18	17	19	30	28	26	18	11	5
Male Gonococcal Proctitis (HIV-)	31	45	27	25	23	21	16	7	17	17	13

Figure 9.7 Early syphilis among MSM by HIV serostatus, 2000-2010, San Francisco . 48

HIV-Positive	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary	4	24	50	51	42	39	42	29	55	52	78
Secondary	13	46	131	143	134	90	87	77	124	115	137
Early Latent	7	25	111	110	110	109	106	86	141	143	167
HIV-Negative	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary	9	21	44	51	72	28	29	29	50	49	55
Secondary	13	24	51	68	67	48	43	39	55	65	59
Early Latent	3	9	33	47	52	45	36	40	45	51	56

Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2001-2010, San Francisco 51

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	70	65	78	52	58	41	42	35	37	22
Deaths	60	58	60	59	62	47	45	37	22	17
Persons Living with AIDS	738	745	763	756	752	746	743	741	756	761

Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, 2001-2010, San Francisco 52

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	28	24	26	15	27	14	16	14	14	9
African American	33	36	35	28	25	19	22	16	16	10
Latino	5	2	14	8	5	6	2	3	3	0
Other	4	3	3	1	1	2	2	2	4	3

Figure 10.3 Cases diagnosed with HIV infection among non-MSM IDU by race/ethnicity, 2006-2010, San Francisco 52

	2006	2007	2008	2009	2010
White	19	22	19	12	12
African American	17	14	9	8	15
Latino	4	2	2	4	1
Other	2	1	1	2	2

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, 2001-2010, San Francisco 54

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	19	16	23	14	19	20	33	27	16	15
Deaths	8	9	6	5	6	6	7	5	6	8
Persons Living with AIDS	159	166	183	192	205	219	245	267	277	284

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, 2001-2010, San Francisco 55

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	2	4	3	3	2	3	3	3	1	3
African American	11	6	14	3	5	9	21	11	8	3
Latino	3	3	3	5	8	6	7	4	7	7
Other	3	3	3	3	4	2	2	9	0	2

Figure 11.3 Cases diagnosed with HIV infection among heterosexuals by race/ethnicity, 2006-2010, San Francisco 55

	2006	2007	2008	2009	2010
White	9	6	6	3	6
African American	10	20	15	9	9
Latino	4	9	8	5	10
Other	2	7	3	1	4

Figure 12.1 AIDS cases, deaths, and prevalence among women, 2001-2010, San Francisco 58

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	45	36	40	39	37	30	32	40	23	15
Deaths	26	29	28	23	28	32	19	24	11	13
Persons Living with AIDS	449	456	468	484	493	491	504	520	532	534

Figure 12.2 Female AIDS cases by race/ethnicity, 2001-2010, San Francisco. 59

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	15	13	7	11	9	8	8	11	7	6
African American	22	14	23	18	14	14	18	18	10	4
Latina	4	5	7	8	9	5	5	4	4	2
Other	4	4	3	2	5	3	1	7	2	3

Figure 12.3 Female cases diagnosed with HIV infection by race/ethnicity, 2006-2010, San Francisco 59

	2006	2007	2008	2009	2010
White	19	15	13	8	11
African American	10	17	17	10	8
Latina	3	6	5	8	5
Other	4	5	4	2	5

Figure 16.1 AIDS cases, deaths, and prevalence among transgender persons, 2001-2010, San Francisco 65

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	15	18	24	17	14	12	13	9	9	10
Deaths	15	9	9	12	11	12	14	12	6	8
Persons Living with AIDS	164	173	188	193	196	196	195	192	195	197

Figure 19.1 Minimum, most recent, maximum community viral load and newly diagnosed HIV cases, 2004-2009, San Francisco 72

	2004	2005	2006	2007	2008	2009
Minimum CVL (p=0.003)	15,298	14,390	12,673	8,934	8,848	7,924
Most recent CVL (p<0.001)	22,435	21,205	19,172	13,960	12,969	10,660
Maximum CVL (p=0.01)	39,903	37,833	33,969	22,802	27,936	19,076
Newly Diagnosed HIV Cases (p<0.001)	864	737	590	588	540	506



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