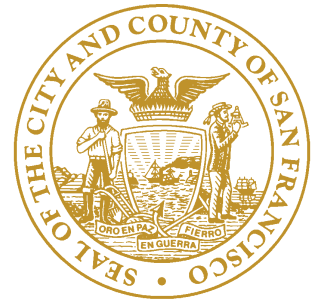




San Francisco Department of Public Health
HIV/AIDS Epidemiology Annual Report
HIV Epidemiology Section

2008





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Executive Summary

Identifying populations at risk for new HIV infections is a priority for HIV surveillance and prevention programs. Traditional surveillance activities capture the number of new HIV diagnoses – which includes both newly acquired infections (also called incident infections) as well as longstanding infections (also called prevalent infections). While HIV prevalence rates include both new and longstanding HIV cases, determining HIV incidence, that is, the occurrence of new HIV infections, is challenging using traditional surveillance techniques.

The Centers for Disease Control and Prevention (CDC) recently released a national HIV incidence estimate using data collected from 22 states in 2006. In this system, blood remaining from standard HIV tests from persons newly diagnosed with HIV is retested using a laboratory assay (called BED) that classifies individuals as either having a recently acquired HIV infection (within the past six months, on average) or having a longer-standing infection. Results from this test are used with a statistical adjustment for frequency of HIV testing to calculate HIV incidence. It was estimated that 56,300 (95% confidence interval [CI] 48,200 – 64,500) persons were newly infected in the U.S. in 2006. Applying this methodology in San Francisco, we estimated that there were 935 new HIV infections (95% CI 658 – 1,212) in 2006. Among men who have sex with men (MSM), including MSM who inject drugs (MSM IDU), the estimate was 716 (95% CI 489 – 944).

Although estimating HIV incidence is new at the national level, San Francisco has estimated incidence among high risk populations since 1990 by reviewing surveillance, research, and community program data. Using this ‘consensus’ method, we estimated that the number of new HIV infections among adults in San Francisco in 2006 was 975 (lower and upper plausible bounds, 801 and 1,082, respectively) and among MSM (including MSM IDU), was 851 (732 – 1,023) (see HIV/AIDS Epidemiology Annual Report 2005).

Using the CDC method, we recently calculated incidence for 2007 and estimated that there were 792 (95% CI 552 – 1,033) new infections in San Francisco in 2007. Among MSM and MSM IDU, the estimate was 626 (95% CI 444 – 814).

Both methods of estimating HIV incidence have limitations. The CDC method extrapolates from a relatively small number of new HIV diagnoses and BED tests to the entire population of San Francisco and the consensus estimate relies on a synthesis of data that cannot be directly combined. It is worth noting that the 2006 CDC and the consensus estimates are very close, providing support that these estimates are likely to be similar to the ‘true incidence.’ Although the point estimates from the CDC method for 2006 and 2007 show a decrease, the confidence intervals overlap, suggesting that incidence has been stable.

Technologies to identify HIV infections at earlier stages are under development and should provide us with the ability to determine recent infections on the individual level. In the meantime, we will use the HIV incidence surveillance system to produce a population-based HIV incidence estimate each year and adding this estimate to the other available sources of data to gauge the HIV epidemic in San Francisco.

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). Since the beginning of the epidemic to December 31, 2008, a cumulative total of 28,114 San Francisco residents were diagnosed with AIDS (Table 1.1). This comprises 18% of California AIDS cases and three percent of cases reported nationally. Compared to cases reported in California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM IDU).

Table 1.1 Characteristics of cumulative AIDS cases in San Francisco, California, and the United States[#]

	San Francisco (N = 28,114)		California (N = 152,318)	United States (N = 1,030,832)
	Number	%	%	%
Gender				
Male	26,563	94%	91%	80%
Female	1,160	4%	9%	20%
Transgender*	391	1%	<1%	--
Race/Ethnicity				
White	20,090	71%	55%	39%
African American	3,610	13%	18%	40%
Latino	3,305	12%	23%	19%
Asian/Pacific Islander	918	3%	2%	<1%
Native American	149	1%	<1%	<1%
Other/Unknown	42	<1%	<1%	<1%
Exposure Category				
MSM	20,901	74%	67%	44%
IDU	2,150	8%	10%	23%
MSM IDU	4,195	15%	9%	7%
Heterosexual	432	2%	6%	14%
Transfusion/Hemophilia	166	<1%	2%	2%
Other/Unidentified	270	1%	6%	11%

[#] San Francisco data are reported through March 9, 2009 for cases diagnosed through December 2008; California data are reported through December 2008. U.S. data are reported through December 2007 and may be found in the CDC HIV/AIDS Surveillance Report, 2007. Vol. 19. Percentage may not add to 100% due to rounding.

* 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, heterosexual injection drug use is the second leading exposure category, but for men of all other racial/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2 percent 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, 45% acquired their infection through heterosexual contact, 30% through injection drug use, and 16% through transfusion of blood or blood products.

Compared to men and women with AIDS, male to female transgender AIDS cases were more likely to be in a transmission category involving injection drug use. Among transgender AIDS cases, 56% of whites, 69% of African Americans, 44% of Latinos and 39% Asian/Pacific Islander were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2008, San Francisco

	White		African American		Latino		Asian/Pacific Islander		Native American	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male										
MSM	16,039	(82)	1,538	(52)	2,375	(78)	680	(84)	69	(52)
IDU	515	(3)	687	(23)	167	(6)	25	(3)	10	(8)
MSM IDU	2,893	(15)	594	(20)	382	(13)	61	(7)	49	(37)
Heterosexual	32	(<1)	54	(2)	31	(1)	11	(1)	2	(2)
Transfusion/ Hemophilia	50	(<1)	17	(1)	22	(1)	14	(2)	0	(0)
Other/Unidentified	67	(<1)	57	(2)	58	(2)	23	(3)	2	(2)
Male Subtotal	19,596		2,947		3,035		814		132	
Female										
IDU	252	(66)	379	(71)	72	(46)	21	(30)	11	(85)
Heterosexual	84	(22)	120	(22)	61	(39)	31	(45)	2	(15)
Transfusion/ Hemophilia	29	(8)	13	(2)	10	(6)	11	(16)	0	(0)
Other/Unidentified	18	(5)	25	(5)	12	(8)	6	(9)	0	(0)
Female Subtotal	383		537		155		69		13	
Transgender (Male to Female Only*)										
IDU	62	(56)	87	(69)	50	(44)	11	(39)	#	
Non IDU	48	(44)	39	(31)	64	(56)	24	(61)	#	
Transgender Subtotal	110		126		114		35		#	

* 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 2,327 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 2007 and 2008 may be revised upward in future reports. By the end of 2008, there were 9,248 San Francisco residents living with AIDS.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2008, San Francisco

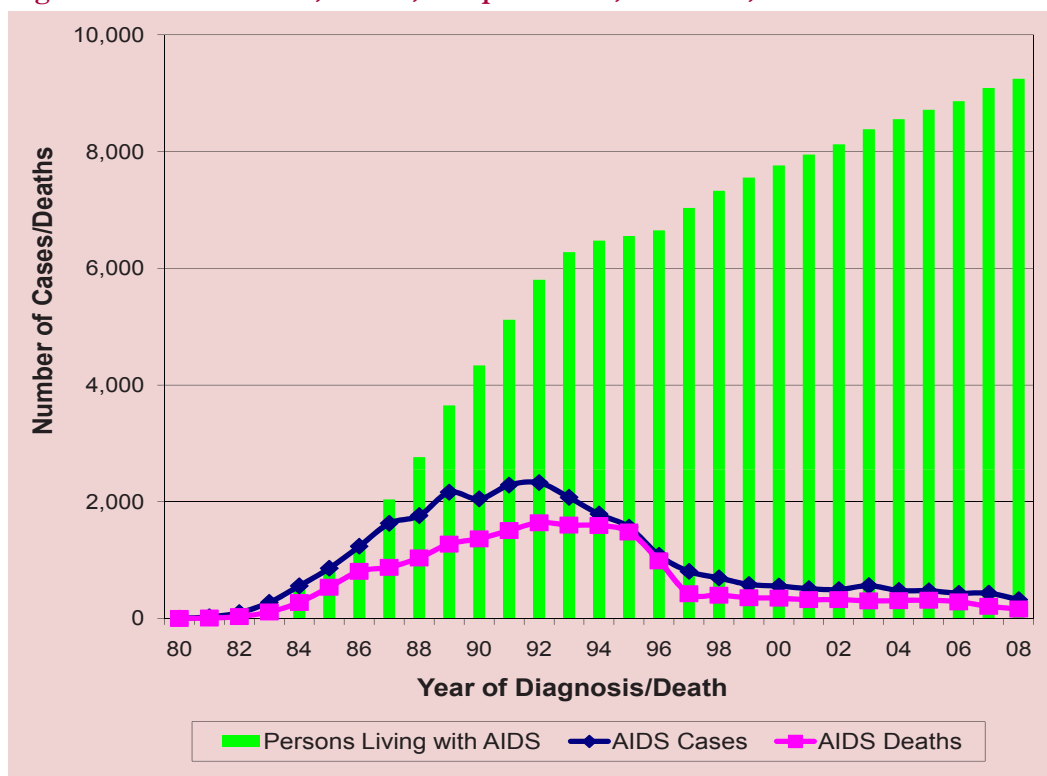
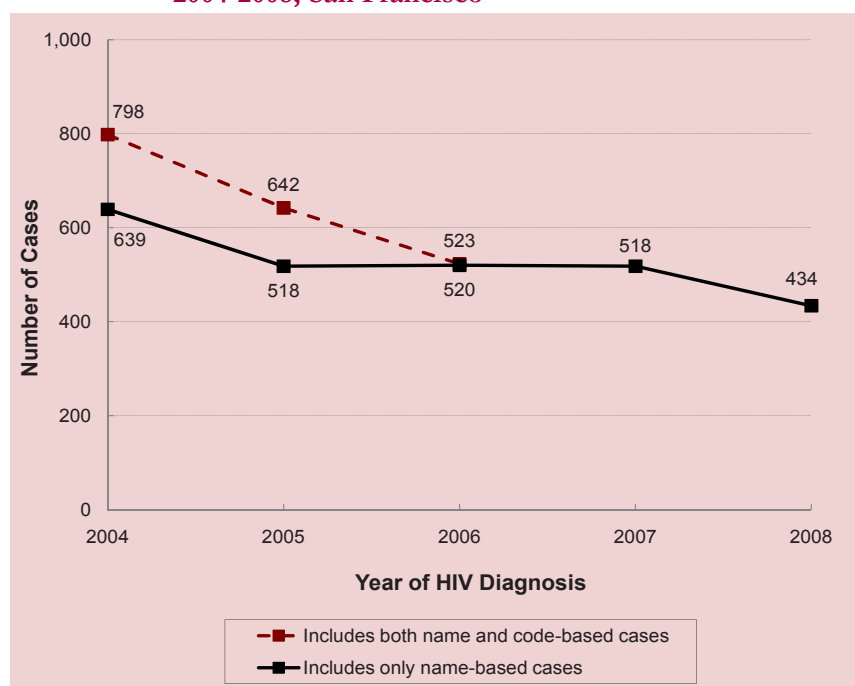


Figure 1.2 illustrates the number of persons newly diagnosed with HIV disease (including HIV and AIDS) between 2004 and 2008. The date of HIV diagnosis was determined based on the earliest date of HIV antibody test, viral load or CD4 test, initiation of antiretroviral therapy, or patient self-report of a positive HIV test. Persons with HIV non-AIDS were reported by a non-name code prior to April 2006. The dashed line demonstrates the number of cases reported by name as well as by code, while the solid line includes cases reported only by name. The majority of code-based HIV cases reported prior to April 2006 have been re-reported to name-based HIV cases. However, for about 20% of code-based HIV cases names have not been ascertained. It is possible that for some code-based cases the date of HIV diagnosis is earlier than what was initially reported. For example, a person may have been tested or diagnosed at another facility at an earlier time but the information cannot be obtained due to the limitation of using the non-name code. Therefore some of the code-based HIV cases may have been diagnosed before 2004 and this would result in the numbers for 2004 and 2005 falling in between the dashed and solid lines shown in the figure.

The number of HIV/AIDS cases diagnosed was relatively stable between 2006 and 2007 and declined in 2008 (Figure 1.2). In general, there is a delay between the time a person is diagnosed with HIV disease and the time that person is reported to the health department. For this reason, numbers of cases diagnosed in recent years were often lower because of persons diagnosed in these years who have not yet been reported. There is a statistical method developed by the Centers for Disease Control and Prevention to take reporting delay into account when examining the trends in HIV disease diagnosis. If we apply this statistical method to our data to adjust for reporting delay, the number of persons diagnosed with HIV between 2006 and 2008 would be steadily increasing. Therefore, careful attention should be paid to the actual numbers of new diagnoses over time.

Figure 1.2 Number of cases newly diagnosed with HIV disease, 2004-2008, San Francisco



In addition, trends in HIV diagnosis using case reporting data should be interpreted with caution. These data include HIV infected persons who have been tested or who are in care and do not include persons who are not aware of their infection. These data also do not necessarily reflect trends in new HIV infections. Our estimate of HIV incidence in San Francisco (see Executive Summary) indicates that the number of new HIV infections remain relatively stable between 2006 and 2007. Therefore, if the upward trends in HIV diagnosis between 2006 and 2008 estimated after accounting for reporting delay is true (which can only be validated in a few years by examining the data retrospectively), it may reflect increases in HIV testing and diagnosis among those who were previously unaware of their infection.

Table 1.3 shows the characteristics of persons diagnosed with HIV between 2004 and 2008. The majority were male, white, aged 25-49 years, and MSM. There was a slight increase in the proportion of persons of color.

Table 1.3 Characteristics of persons newly diagnosed with HIV between 2004 and 2008, San Francisco

	Year of HIV Initial Diagnosis*				
	2004	2005	2006	2007	2008
Total Number	798	642	523	518	434
Gender					
Male	91%	89%	91%	88%	90%
Female	7%	9%	7%	8%	8%
Transgender	2%	2%	2%	4%	2%
Race/Ethnicity					
White	55%	53%	57%	54%	50%
African American	14%	17%	14%	15%	16%
Latino	19%	19%	20%	19%	22%
Asian/Pacific Islander	8%	6%	6%	8%	9%
Native American	1%	1%	1%	0%	1%
Other/unknown	4%	4%	2%	4%	4%
Age at HIV Diagnosis (years)					
0 – 12	<1%	<1%	0%	0%	0%
13 – 24	9%	9%	10%	11%	10%
25 – 49	80%	80%	75%	78%	80%
50+	12%	11%	15%	11%	9%
Exposure Category					
MSM	70%	66%	71%	67%	70%
IDU	9%	8%	8%	8%	7%
MSM IDU	12%	12%	12%	11%	10%
Heterosexual	4%	6%	4%	8%	6%
Other/Unidentified	6%	8%	6%	6%	7%

* 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 SFDPH as of March 9, 2009.

Characteristics of living HIV/AIDS cases in San Francisco are different compared to statewide and nation-wide 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 2008

	San Francisco		California		United States³
	Living HIV Non-AIDS Case¹	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases²	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,509	15,757	34,006	100,366	551,932
Gender					
Male	92%	92%	86%	87%	72%
Female	6%	6%	13%	12%	27%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	63%	64%	48%	47%	33%
African American	14%	14%	19%	19%	48%
Latino	14%	15%	28%	30%	17%
Asian/Pacific Islander	5%	5%	3%	3%	<1%
Native American	1%	1%	<1%	<1%	<1%
Other/Unknown	3%	1%	1%	1%	<1%
Exposure Category					
MSM	73%	73%	67%	65%	46%
IDU	7%	8%	7%	9%	19%
MSM IDU	11%	13%	7%	8%	5%
Heterosexual	3%	3%	9%	10%	28%
Other/Unidentified	6%	3%	10%	8%	2%

1. San Francisco HIV non-AIDS cases include both the name-based and code-based HIV cases.

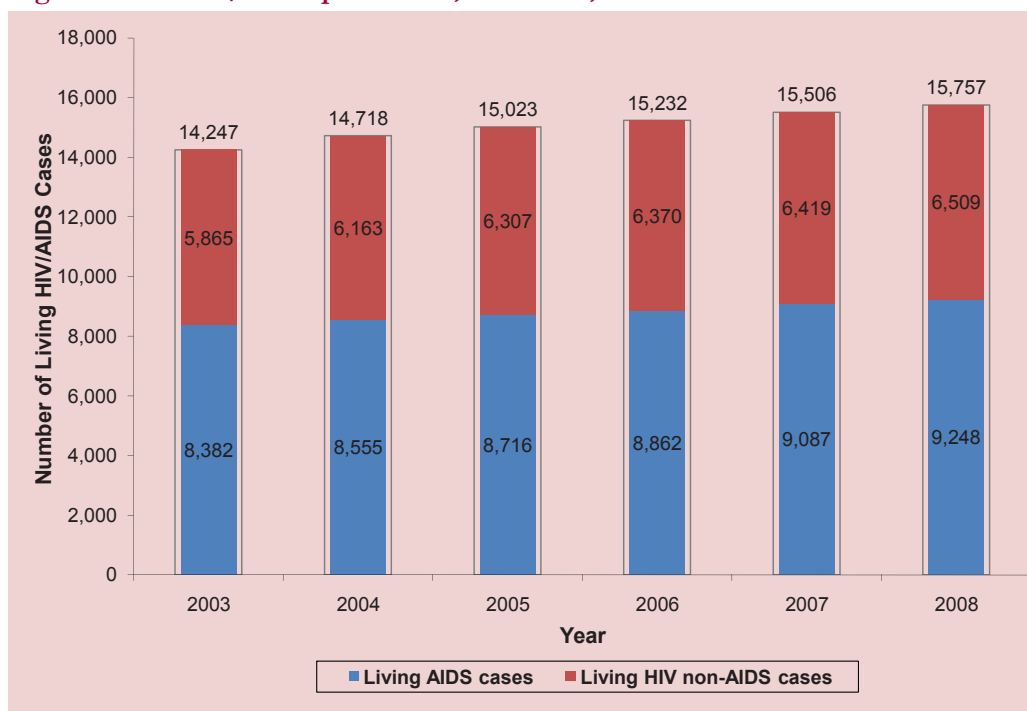
2. California HIV non-AIDS cases include only the name-based HIV cases.

3. U.S. data are through December 2007 and include 34 states with confidential name-based HIV reporting. These are estimates by the CDC that reflect adjustments in reported case counts.

The number of persons living with HIV/AIDS reported to the San Francisco Department of Public Health increased from 14,247 in 2003 to 15,757 in 2008 (Figure 1.3). The number includes AIDS cases and both code-based and name-based HIV cases. The “2006 HIV Consensus Estimates” estimated 18,735 persons living with HIV/AIDS in San Francisco on January 1, 2006 (see HIV/AIDS Epidemiology Annual Report 2005).

The gap between the consensus estimate and the case reporting data indicates that a proportion of persons with HIV are not aware of their infection. In addition, reporting of HIV cases is incomplete, especially for those diagnosed in earlier years. Also, case report data only includes persons diagnosed with HIV/AIDS who are residents of San Francisco at the time of their diagnosis. Persons who are residents of other counties and receive medical care in San Francisco are not included in the case counts. Persons who were residents of San Francisco at the time of their diagnosis but now reside elsewhere continue to be counted in these data.

Figure 1.3 HIV/AIDS prevalence, 2003-2008, San Francisco



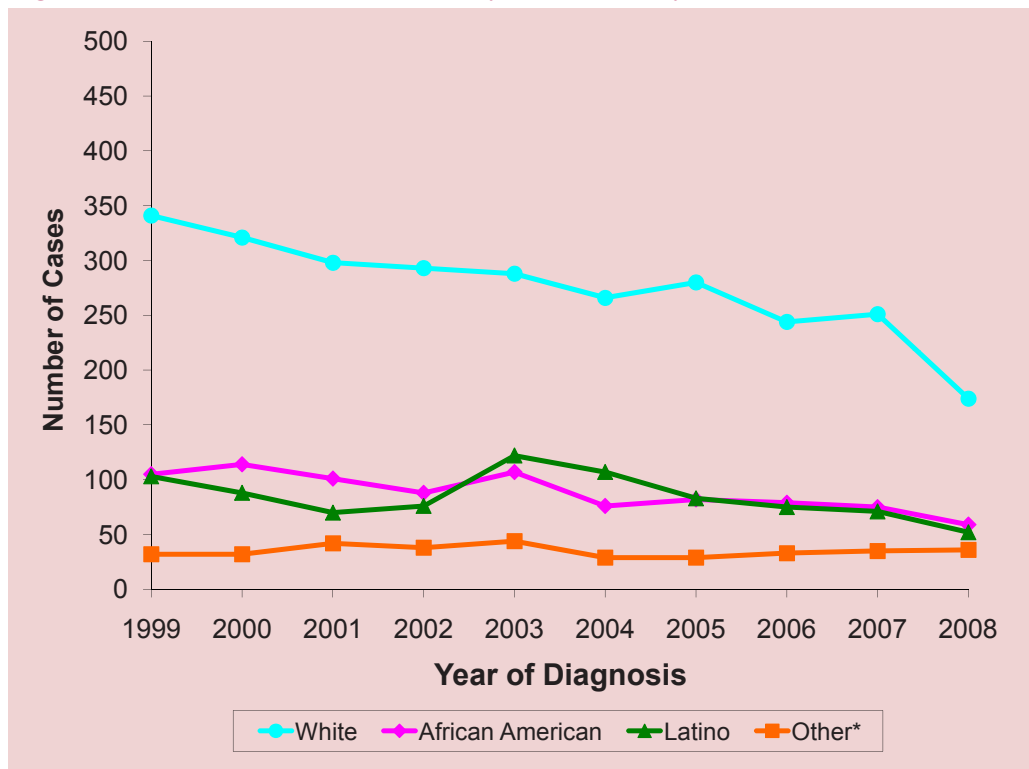
2

Trends in 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 1998, but has been level between 2004 and 2007. 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 2008.

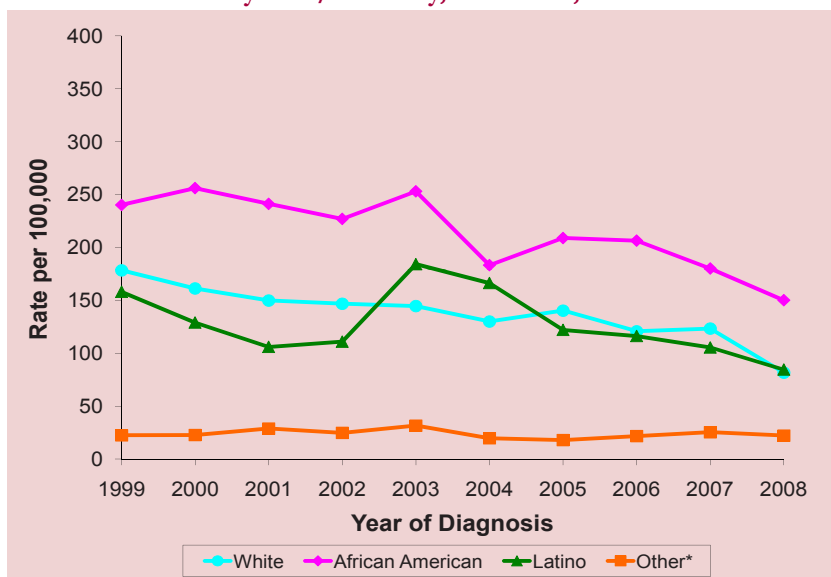
Figure 2.1 Number of AIDS cases by race/ethnicity, 1999-2008, San Francisco



* Cases in the "Other" race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Since 1999, the AIDS incidence rates among African American men have been higher than for men of all other racial/ethnic groups (Figure 2.2). The AIDS incidence rates for white men and Latino men have been similar since 2005. In 2008, the incidence rate of AIDS per 100,000 population was 150 among African American men, 82 for white men, and 84 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2008.

Figure 2.2 Male annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1999-2008, San Francisco

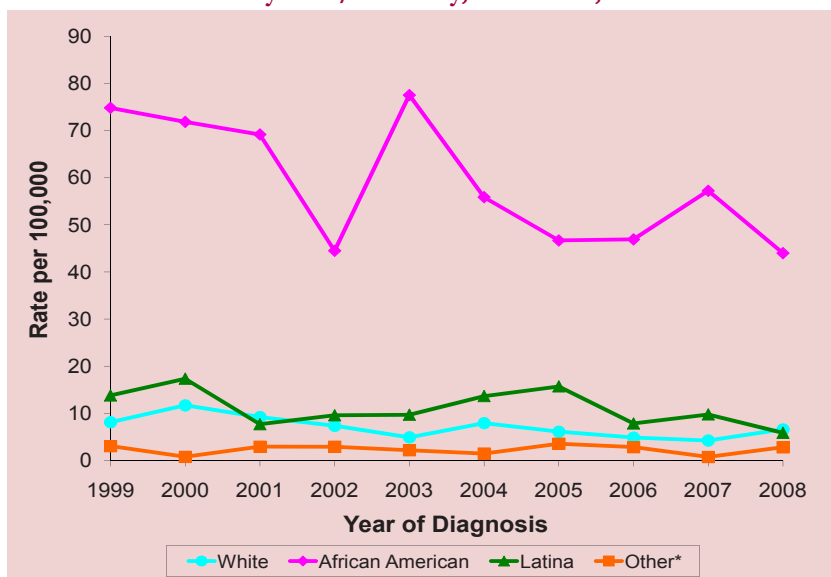


[#] See Technical Notes "AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 81% Asian/Pacific Islanders and 11% Native Americans.

AIDS incidence 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 racial/ethnic groups. Although the AIDS incidence rate for African American women has declined since 1999, in recent years (2004 to 2008) they have been relatively stable (Figure 2.3). In 2008, the incidence rate of AIDS per 100,000 population was 44 for African American women, 6 for Latina women, 7 for white women, and 3 for women of other racial/ethnic groups.

Figure 2.3 Female annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1999-2008, San Francisco



[#] See Technical Notes "AIDS Incidence Rates."

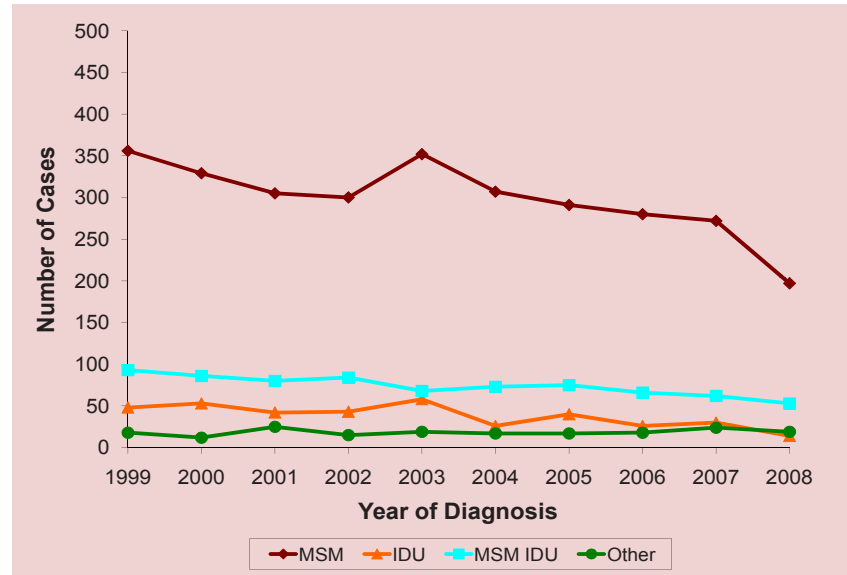
* Cases in the "Other" race/ethnicity category include 83% Asian/Pacific Islanders and 10% Native Americans.

Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 1999 and 2008 (Figure 2.4). For MSM IDU the number of AIDS cases was fairly stable between 2003 and 2007. In 2008, 70% of male AIDS cases were MSM, 19% were MSM IDU, and 5% were heterosexual IDU.

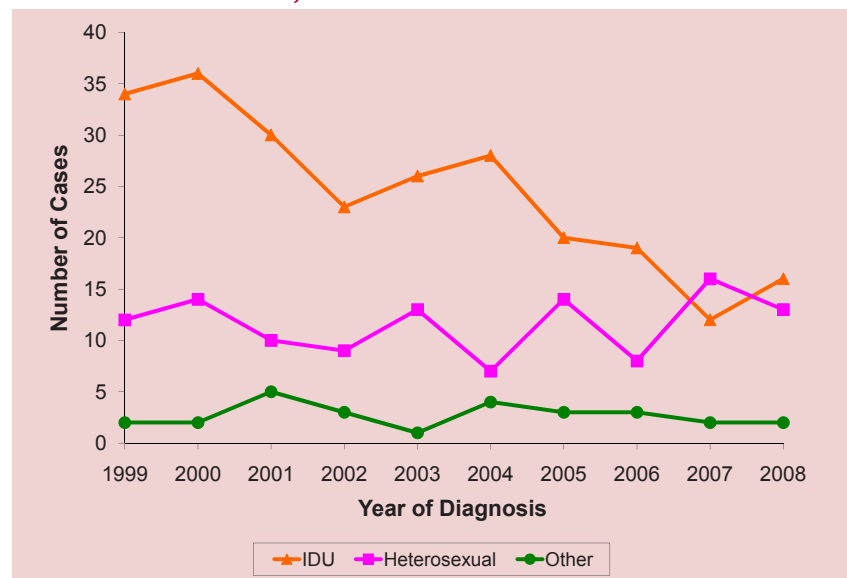
Injection drug use is the predominant exposure category for female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 1999, while female AIDS cases due to heterosexual contact and other exposure categories have remained stable. In 2008, 52% of female cases were due to injection drug use and 42% were attributed to heterosexual contact. Nationwide, heterosexual contact continued to be the predominant exposure category for female AIDS cases reported in 2007.

Figure 2.4 Number of male AIDS cases* by exposure category, 1999-2008, San Francisco



* Excludes male-to-female transgender AIDS cases.

Figure 2.5 Number of female AIDS cases* by exposure category, 1999-2008, San Francisco



* Excludes female-to-male transgender AIDS cases.

Age

Cumulatively, the largest number of men, women, and transgender persons 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 transgender AIDS cases than male AIDS cases. For cases diagnosed in 2005-2008, there was an increase in the proportion of women diagnosed with AIDS in the 50+ year age group, as well as the proportion of men in the over 40 year age groups.

The trend is different among transgender AIDS cases. In 2005-2008, the proportion of transgender persons diagnosed in the 40+ year age group was level and the proportion diagnosed in the 13-29 year age group increased compared to the previous time period.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1997-2008, San Francisco

	1997-2000		2001-2004		2005-2008		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	3	(<1)	5	(<1)	4	(<1)	49	(<1)
20 - 29	226	(10)	139	(8)	143	(10)	2,967	(11)
30 - 39	1,012	(43)	686	(38)	447	(30)	11,892	(45)
40 - 49	778	(33)	634	(35)	587	(40)	8,428	(32)
50+	339	(14)	350	(19)	303	(20)	3,227	(12)
Male Subtotal	2,358	(100)	1,814	(100)	1,484	(100)	26,563	(100)
Female (Age in Years)								
0 - 19	3	(2)	2	(1)	0	(0)	23	(2)
20 - 29	23	(12)	21	(13)	18	(14)	164	(14)
30 - 39	71	(36)	51	(32)	40	(31)	447	(39)
40 - 49	75	(38)	57	(36)	39	(30)	350	(30)
50+	26	(13)	28	(18)	31	(24)	176	(15)
Female Subtotal	198	(100)	159	(100)	128	(100)	1,160	(100)
Transgender (Age in Years)								
13 - 29	19	(24)	7	(10)	12	(26)	95	(24)
30 - 39	32	(41)	34	(47)	14	(30)	172	(44)
40+	28	(35)	31	(43)	20	(43)	124	(32)
Transgender Subtotal	79	(100)	72	(100)	46	(100)	391	(100)

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. 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, 2008, 15,757 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 2004 and 2008; the largest numbers are white, age 40-49 years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 30% to 40% between 2004 and 2008. 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, 2004-2008[#], San Francisco

	2004		2005		2006		2007		2008	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender										
Male	13,522	(92)	13,799	(92)	14,013	(92)	14,259	(92)	14,501	(92)
Female	864	(6)	890	(6)	886	(6)	906	(6)	916	(6)
Transgender	332	(2)	334	(2)	333	(2)	341	(2)	340	(2)
Race/Ethnicity										
White	9,573	(65)	9,712	(65)	9,814	(64)	9,944	(64)	10,043	(64)
African American	2,131	(14)	2,152	(14)	2,161	(14)	2,186	(14)	2,212	(14)
Latino	2,086	(14)	2,175	(14)	2,250	(15)	2,321	(15)	2,397	(15)
Asian/Pacific Islander	657	(4)	682	(5)	696	(5)	733	(5)	766	(5)
Native American	97	(1)	102	(1)	104	(1)	102	(1)	104	(1)
Other/Unknown	174	(1)	200	(1)	207	(1)	220	(1)	235	(1)
Age in Years (at end of each year)										
0 - 19	42	(<1)	38	(<1)	35	(<1)	34	(<1)	31	(<1)
20 - 29	648	(4)	656	(4)	635	(4)	642	(4)	622	(4)
30 - 39	3,552	(24)	3,245	(22)	2,993	(20)	2,804	(18)	2,624	(17)
40 - 49	6,127	(42)	6,293	(42)	6,296	(41)	6,290	(41)	6,234	(40)
50+	4,349	(30)	4,791	(32)	5,273	(35)	5,736	(37)	6,246	(40)
Exposure Category										
MSM	10,590	(72)	10,837	(72)	11,031	(72)	11,252	(73)	11,462	(73)
IDU	1,269	(9)	1,251	(8)	1,233	(8)	1,225	(8)	1,223	(8)
MSM IDU	2,066	(14)	2,067	(14)	2,064	(14)	2,065	(13)	2,061	(13)
Heterosexual	340	(2)	373	(2)	388	(3)	421	(3)	442	(3)
Transfusion/Hemophilia	36	(<1)	36	(<1)	35	(<1)	35	(<1)	35	(<1)
Other/Unknown	417	(3)	459	(3)	481	(3)	508	(3)	534	(3)
Total	14,718		15,023		15,232		15,506		15,757	

[#] Persons living with HIV/AIDS at the end of each year.

As of December 31, 2008, a total of 9,248 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transgender. 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 white and African American men, half or more of living AIDS cases were 50 years of age or older. For Latino, Asian Pacific Islander, and Native American men the majority of living AIDS cases were less than 50 years of age.

Among women living with AIDS, African American was the largest racial/ethnic group (45%) followed by white (29%). 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 25-49 years of age.

Table 3.2 Persons living with AIDS by gender, exposure category, age and race/ethnicity, December 2008, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number*
Male									
<i>Exposure category</i>									
MSM	4,686	(81)	520	(52)	1,059	(81)	349	(80)	6,632
IDU	190	(3)	221	(22)	50	(4)	18	(4)	482
MSM IDU	841	(15)	194	(19)	145	(11)	46	(11)	1,231
Heterosexual	15	(<1)	33	(3)	23	(2)	7	(2)	79
Other	4	(<1)	4	(<1)	4	(<1)	6	(1)	19
No reported risk	33	(1)	28	(3)	26	(2)	12	(3)	99
<i>Age in Years (at end of 2008)</i>									
<13	0	(0)	0	(0)	1	(<1)	0	(0)	2
13 - 24	8	(<1)	6	(<1)	9	(<1)	6	(1)	30
25 - 49	2,766	(48)	496	(50)	874	(67)	277	(63)	4,434
50+	2,995	(52)	498	(50)	423	(32)	155	(35)	4,076
Male Subtotal	5,769		1,000		1,307		438		8,542
Female									
<i>Exposure category</i>									
IDU	97	(64)	153	(66)	35	(41)	10	(23)	296
Heterosexual	42	(28)	65	(28)	39	(46)	26	(59)	172
Other	5	(3)	4	(2)	6	(7)	4	(9)	19
No reported risk	7	(5)	9	(4)	5	(6)	4	(9)	26
<i>Age in Years (at end of 2008)</i>									
13 - 24	0	(0)	3	(1)	5	(6)	1	(2)	9
25 - 49	95	(63)	117	(51)	48	(56)	32	(73)	294
50+	56	(37)	111	(48)	32	(38)	11	(25)	210
Female Subtotal	151		231		85		44		513
Transgender	45		60		62		26		193
Total	5,965		1,291		1,454		508		9,248

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

As of December 31, 2008, 6,509 living HIV non-AIDS cases (persons living with HIV who had not developed AIDS) had been reported 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 transgender. 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 both men and women, 25-49 year olds accounted for the largest number of living HIV cases.

There were larger proportions of living HIV non-AIDS cases reported without risk information compared to living AIDS cases. This was partly due to the non-name code-based HIV reporting system used to report HIV non-AIDS cases until April 17, 2006. This former reporting system resulted in the inability to follow up and obtain complete case information. Risk information is expected to be more complete as the name-based HIV reporting system becomes more mature.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2008, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number*
Male									
<i>Exposure Category</i>									
MSM	3,209	(82)	380	(55)	712	(84)	263	(85)	4,653
IDU	114	(3)	111	(16)	21	(2)	8	(3)	257
MSM IDU	477	(12)	97	(14)	66	(8)	24	(8)	675
Heterosexual	11	(<1)	27	(4)	14	(2)	4	(1)	60
Other	5	(<1)	2	(<1)	4	(<1)	1	(0)	12
No reported risk	112	(3)	69	(10)	35	(4)	9	(3)	302
<i>Age in Years (at end of 2008)</i>									
13 - 24	29	(1)	26	(4)	31	(4)	6	(2)	96
25 - 49	2,630	(67)	386	(56)	693	(81)	269	(87)	4,112
50+	1,269	(32)	274	(40)	128	(15)	34	(11)	1,751
Male Subtotal	3,928		686		852		309		5,959
Female									
<i>Exposure Category</i>									
IDU	64	(56)	79	(45)	22	(37)	14	(40)	184
Heterosexual	24	(21)	59	(34)	22	(37)	18	(51)	128
Other	3	(3)	4	(2)	3	(5)	0	(0)	12
No reported risk	24	(21)	34	(19)	12	(20)	3	(9)	79
<i>Age in Years (at end of 2008)</i>									
<13	0	(0)	1	(1)	2	(3)	0	(0)	4
13 - 24	5	(4)	6	(3)	4	(7)	0	(0)	16
25 - 49	85	(74)	94	(53)	42	(71)	27	(77)	257
50+	25	(22)	75	(43)	11	(19)	8	(23)	126
Female Subtotal	115		176		59		35		403
Transgender	33		59		32		18		147
Total	4,076		921		943		362		6,509

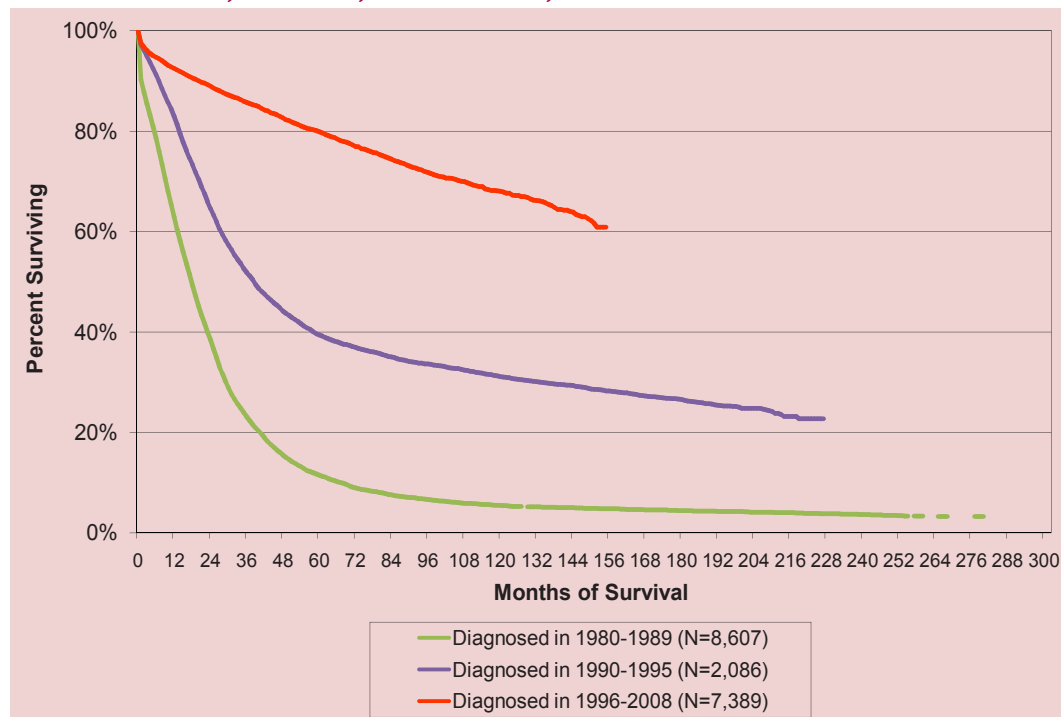
* Includes persons with multiple race or whose race/ethnicity information is not available.

4

Survival among Persons with AIDS

The Kaplan-Meier curve in Figure 4.1 demonstrates that survival improved for San Francisco AIDS cases between 1996 and 2008, 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 61% of persons diagnosed with AIDS between 1996 and 2008 are still alive as of December 31, 2008. Improved survival among persons diagnosed with AIDS after 1995 is attributed to more effective antiretroviral therapies.

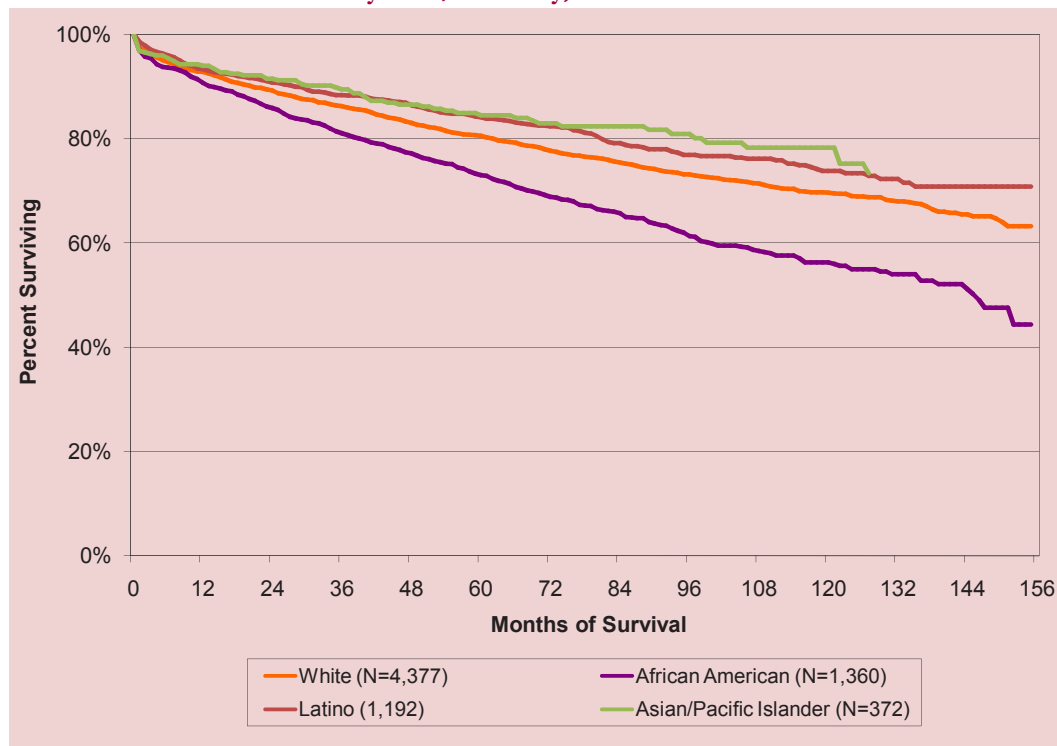
Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2008, San Francisco



* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other racial/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2008, the percent of African Americans surviving 60 months (five years) after AIDS was 73%, compared to 81% for whites, 84% for Latinos, and 84% for Asian/Pacific Islanders. The percent surviving 84 months (seven years) after AIDS diagnosis was 66% for African Americans, 75% for whites, 79% for Latinos, and 82% for Asian/Pacific Islanders.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by race/ethnicity, San Francisco

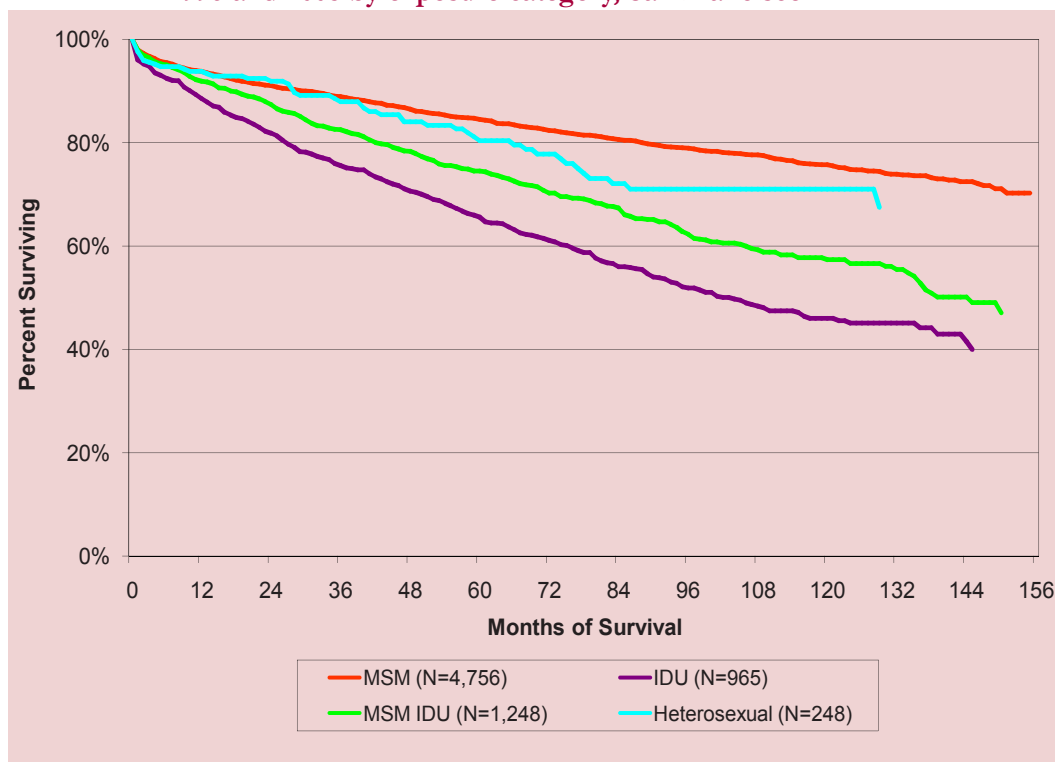


* See Technical Notes "AIDS Survival."

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 2008, the five-year (60 months) survival was 85% for MSM, 81% for heterosexuals, 74% 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.

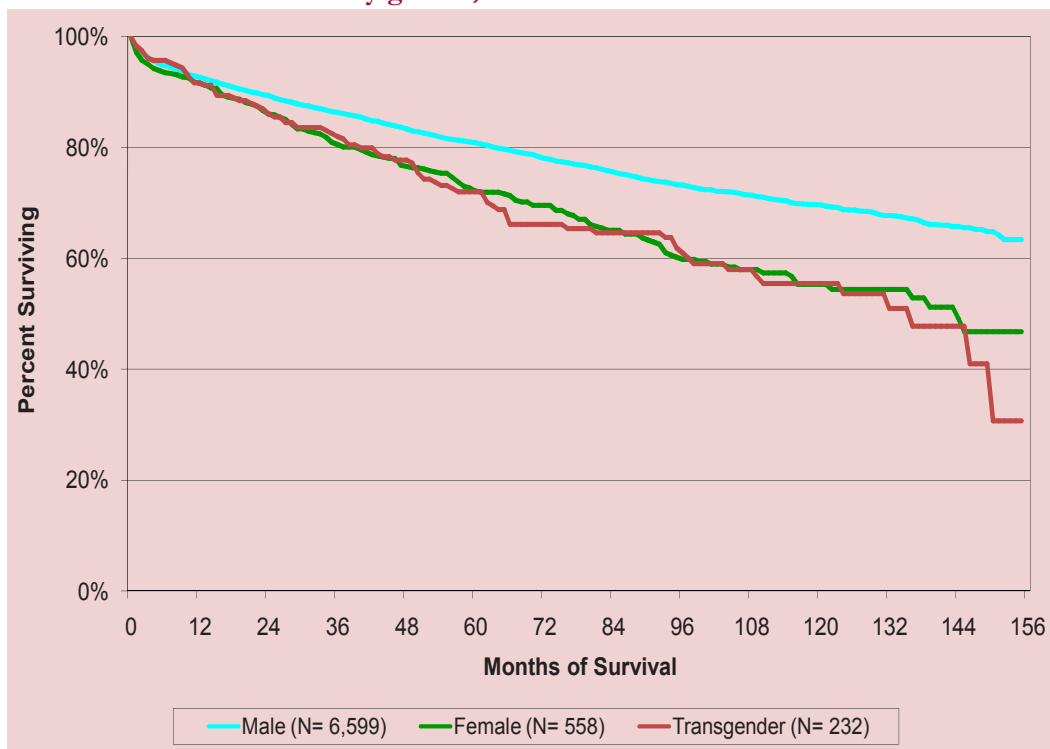
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by exposure category, San Francisco



* See Technical Notes "AIDS Survival."

By gender, male AIDS cases have better survival than female and transgender AIDS cases. The Kaplan-Meier curves show that female and transgender AIDS cases have similar survival experiences (Figure 4.4). The five-year (60 months) survival was 81% for men, 72% for women and 72% for transgender persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies and more IDU among women and transgender AIDS cases.

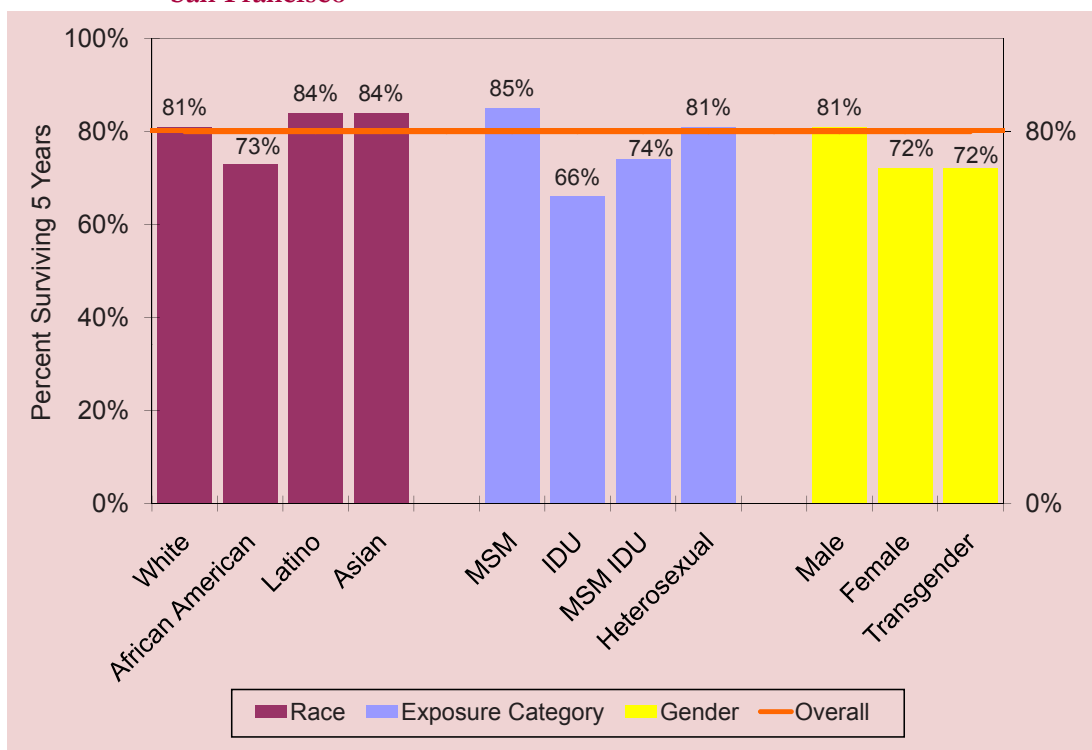
Figure 4.4 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by gender, San Francisco



* See Technical Notes "AIDS Survival."

The overall five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2008 is 80% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transgender 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 2008 by race/ethnicity, exposure category, and gender, San Francisco



5

Trends in HIV/AIDS Mortality

AIDS surveillance data

As of December 31, 2008, a total of 18,866 deaths have occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths in recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2005 and 2006. Cumulatively, the largest number of deaths occurred in the 30-39 year old age group. However, in recent years, the largest number of deaths has shifted to the 40-49 year old age group. The 50-59 year old age group had the second largest number of deaths.

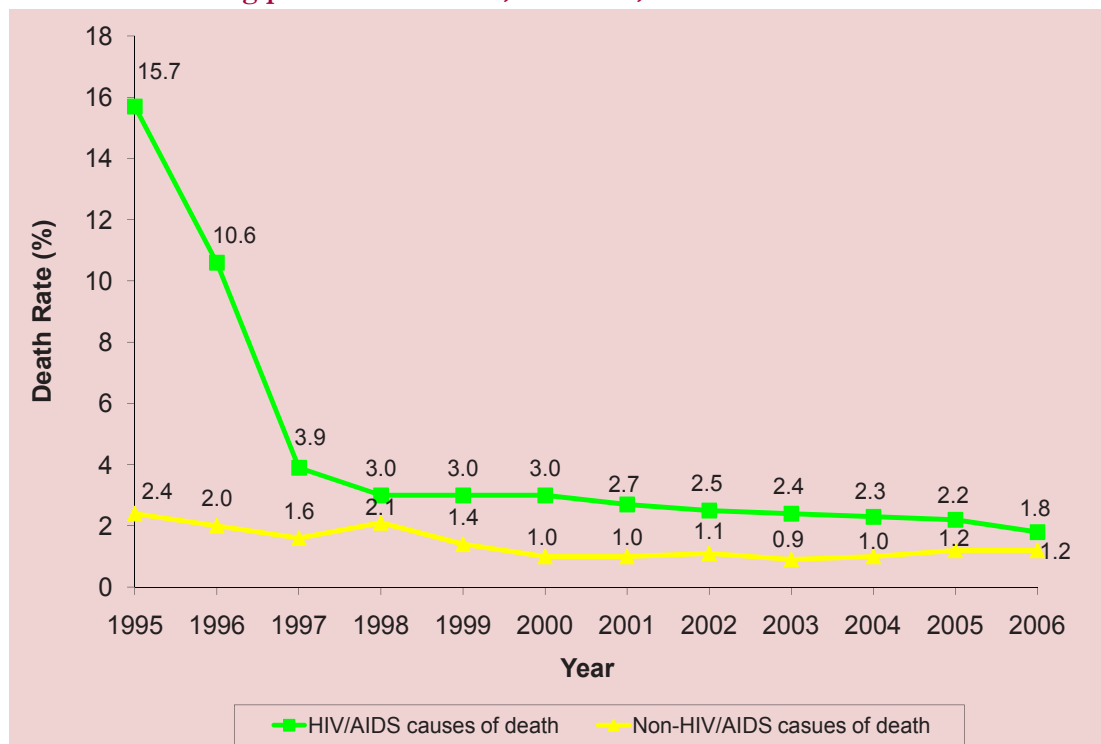
Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2005-2008, San Francisco

	Year of Death				Cumulative Totals as of 12/31/2008
	2005 Number (%)	2006 Number (%)	2007* Number (%)	2008* Number (%)	
Gender					
Male	274 (88)	241 (85)	182 (88)	128 (80)	18,021
Female	28 (9)	32 (11)	16 (8)	21 (13)	647
Transgender	11 (4)	12 (4)	9 (4)	11 (7)	198
Race/Ethnicity					
White	183 (58)	179 (63)	128 (62)	102 (64)	14,125
African American	87 (28)	59 (21)	43 (21)	36 (23)	2,319
Latino	29 (9)	28 (10)	27 (13)	17 (11)	1,851
Other	14 (4)	19 (7)	9 (4)	5 (3)	571
Exposure Category					
MSM	165 (53)	159 (56)	112 (54)	82 (51)	14,176
IDU	63 (20)	50 (18)	39 (19)	26 (16)	1,369
MSM IDU	70 (22)	63 (22)	48 (23)	43 (27)	2,869
Heterosexual	6 (2)	6 (2)	6 (3)	4 (3)	179
Other/Unknown	9 (3)	7 (2)	2 (1)	5 (3)	273
Age at Death (years)					
0 - 29	3 (1)	1 (0)	6 (3)	1 (1)	1,095
30 - 39	39 (12)	32 (11)	19 (9)	11 (7)	7,168
40 - 49	130 (42)	119 (42)	70 (34)	57 (36)	7,077
50 - 59	93 (30)	95 (33)	66 (32)	59 (37)	2,609
60+	48 (15)	38 (13)	46 (22)	32 (20)	917
Total	313 (100)	285 (100)	207 (100)	160 (100)	18,866

* Data 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 2006.

The trend in death rates in persons with AIDS was examined according to the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 15.7 per 100 persons per year with AIDS in 1995 to 1.8 per 100 persons with AIDS in 2006. The drop in death rates beginning in 1996 reflects the impact of highly active antiretroviral therapies. For non-HIV/AIDS-related causes, the death rate in 1995 was 2.4 per 100 persons with AIDS, declining to 1.2 per 100 persons with AIDS in 2006.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1995-2006, 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 81% of AIDS deaths occurring in 1995-1998 to 66% in 2003-2006 (Table 5.2). Other frequently occurring underlying causes of death in 2003-2006 include non-AIDS cancer (9.0%) and heart disease (5.9%). The proportion of deaths associated with substance abuse (drug overdose, mental disorders due to substance use), and the proportion of deaths due to suicide and chronic obstructive lung disease increased over time.

Table 5.2 Underlying causes of death among persons with AIDS*, 1995-2006, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1995-1998		1999-2002		2003-2006	
	N= 3,215		N= 1,295		N= 1,161	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	2,587	(80.5)	927	(71.6)	767	(66.1)
Non-AIDS cancer	80	(2.5)	82	(6.3)	105	(9.0)
Lung cancer	19	(0.6)	25	(1.9)	33	(2.8)
Liver cancer	9	(0.3)	16	(1.2)	22	(1.9)
Anal cancer	3	(0.1)	7	(0.5)	4	(0.3)
Heart disease	61	(1.9)	60	(4.6)	68	(5.9)
Coronary heart disease	20	(0.6)	38	(2.9)	36	(3.1)
Cardiomyopathy	6	(0.2)	9	(0.7)	10	(0.9)
Liver disease	28	(0.9)	32	(2.5)	21	(1.8)
Liver cirrhosis	9	(0.3)	14	(1.1)	14	(1.2)
Alcoholic liver disease	10	(0.3)	15	(1.2)	6	(0.5)
Drug overdose	54	(1.7)	33	(2.5)	40	(3.4)
Mental disorders due to substance use	16	(0.5)	17	(1.3)	24	(2.1)
Suicide	34	(1.1)	23	(1.8)	29	(2.5)
Chronic obstructive lung disease	18	(0.6)	13	(1.0)	22	(1.9)
Cerebrovascular disease	12	(0.4)	13	(1.0)	8	(0.7)
Viral hepatitis	73	(2.3)	12	(0.9)	7	(0.6)
Septicemia	8	(0.2)	3	(0.2)	4	(0.3)
Renal disease	7	(0.2)	3	(0.2)	2	(0.2)
Aspergillosis	48	(1.5)	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 each time period, HIV/AIDS-related causes contributed to more than 82% of deaths in AIDS cases. In the time periods 1999-2002 and 2003-2006, the proportion of deaths from liver disease, pneumonia and aspergillosis declined. Deaths due to non-AIDS cancers showed the largest relative increase between time periods 1999-2002 and 2003-2006.

Table 5.3 Multiple causes of death among persons with AIDS*, 1995-2006, San Francisco

Multiple Causes of Death [#]	Year of Death					
	1995-1998		1999-2002		2003-2006	
	N = 3,215		N = 1,295		N = 1,161	
	No.	(%)	No.	(%)	No.	(%)
HIV/AIDS	2,971	(92.4)	1,103	(85.2)	957	(82.4)
Heart disease	483	(15.0)	252	(19.5)	230	(19.8)
Coronary heart disease	38	(1.2)	62	(4.8)	65	(5.6)
Cardiomyopathy	43	(1.3)	32	(2.5)	24	(2.1)
Liver disease	218	(6.8)	206	(15.9)	160	(13.8)
Liver cirrhosis	73	(2.3)	79	(6.1)	74	(6.4)
Alcoholic liver disease	17	(0.5)	18	(1.4)	9	(0.8)
Viral hepatitis	125	(3.9)	163	(12.6)	159	(13.7)
Pneumonia	496	(15.4)	200	(15.4)	152	(13.1)
Non-AIDS cancer	209	(6.5)	117	(9.0)	154	(13.3)
Lung cancer	22	(0.7)	27	(2.1)	36	(3.1)
Liver cancer	12	(0.4)	20	(1.5)	24	(2.1)
Anal cancer	5	(0.2)	9	(0.7)	8	(0.7)
Septicemia	219	(6.8)	123	(9.5)	134	(11.5)
Renal disease	133	(4.1)	105	(8.1)	123	(10.6)
Mental disorders due to substance use	62	(1.9)	70	(5.4)	84	(7.2)
Chronic obstructive lung disease	56	(1.7)	42	(3.2)	60	(5.2)
Drug overdose	64	(2.0)	45	(3.5)	47	(4.0)
Cerebrovascular disease	47	(1.5)	40	(3.1)	35	(3.0)
Suicide	34	(1.1)	23	(1.8)	29	(2.5)
Aspergillosis	69	(2.1)	17	(1.3)	7	(0.6)

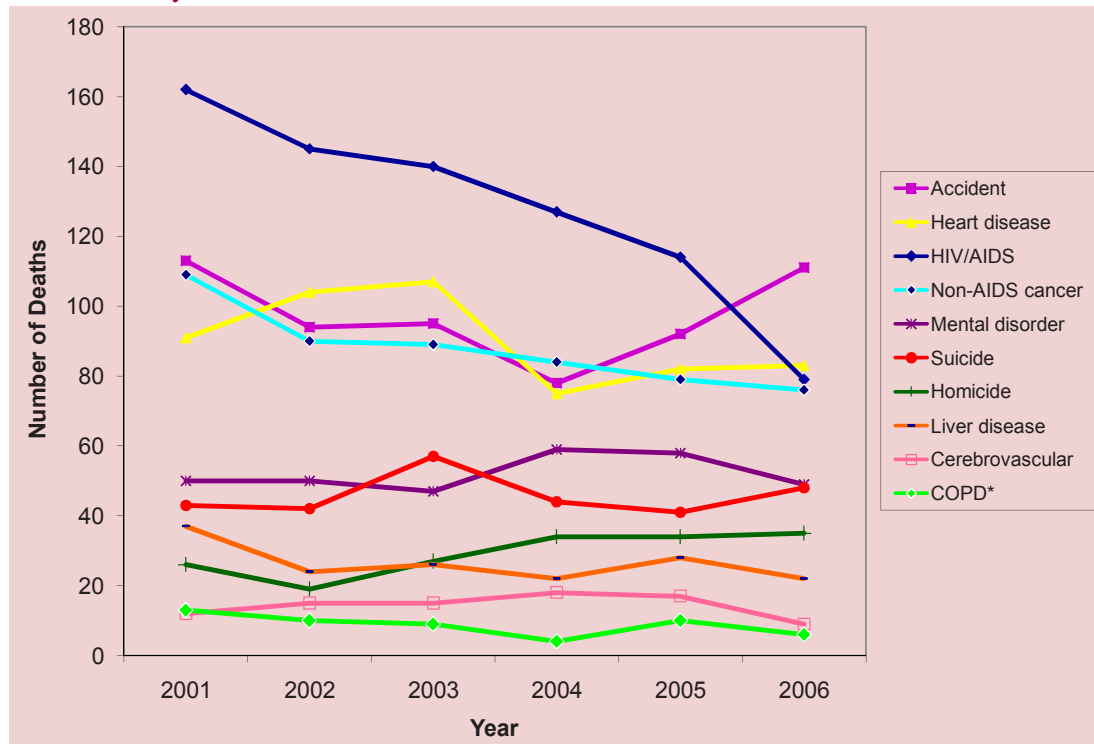
* Deceased AIDS cases without cause of death information are not represented in this table.

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

Vital statistics death data

We examined the data obtained from the California Vital Statistics Death Files for San Francisco residents who died from 2001 to 2006 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. However, accidents surpassed HIV/AIDS to become the leading cause of death in 2006 (Figure 5.2) while HIV/AIDS dropped to the third leading cause of death. This was due in part to a steady decrease in the number of deaths due to HIV/AIDS during this time period in conjunction with an increase in accidents starting in 2004.

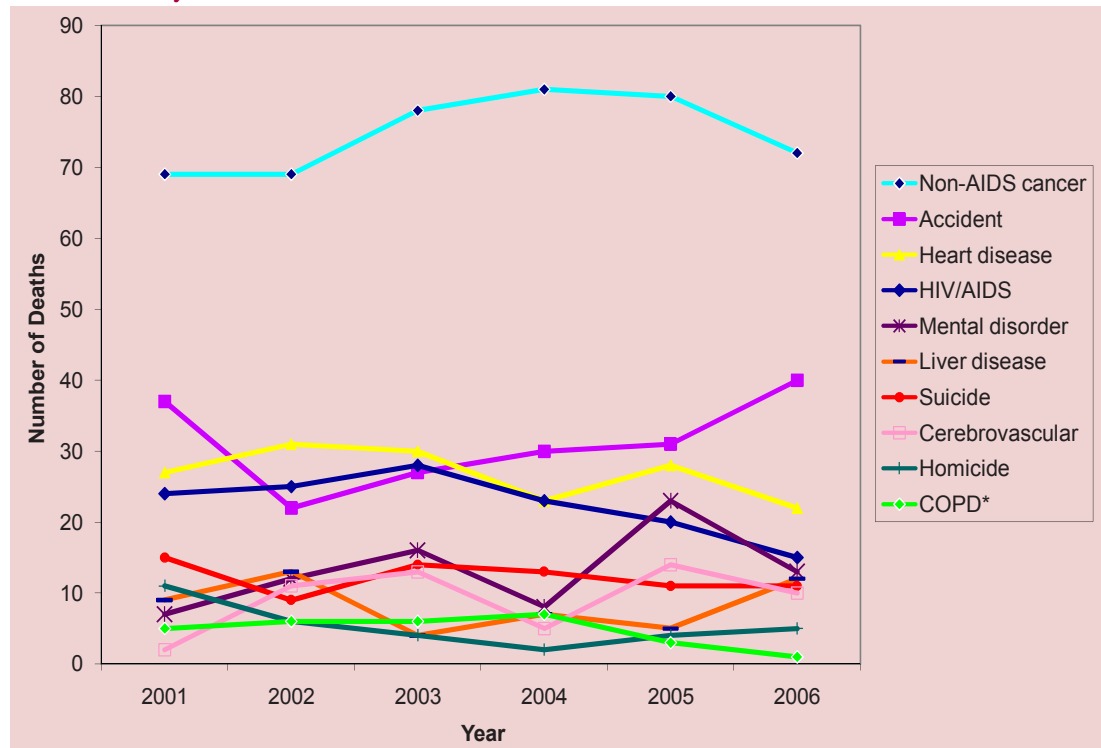
Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2001-2006



* COPD: chronic obstructive pulmonary disease.

Deaths due to HIV/AIDS among San Francisco women were significantly lower than among their male counterparts. Among those aged 25-54 years in 2006, the number of deaths among males due to HIV/AIDS ($n=79$) was approximately five times higher than the number of deaths among females ($n=15$). In recent years, the greatest number of deaths attributed to HIV/AIDS among women occurred in 2003 (Figure 5.3). Deaths due to HIV/AIDS decreased slightly thereafter to become the fourth leading cause of death among women in 2006. Non-AIDS related cancer remained the leading cause of death among women aged 25-54 years from 2001 to 2006.

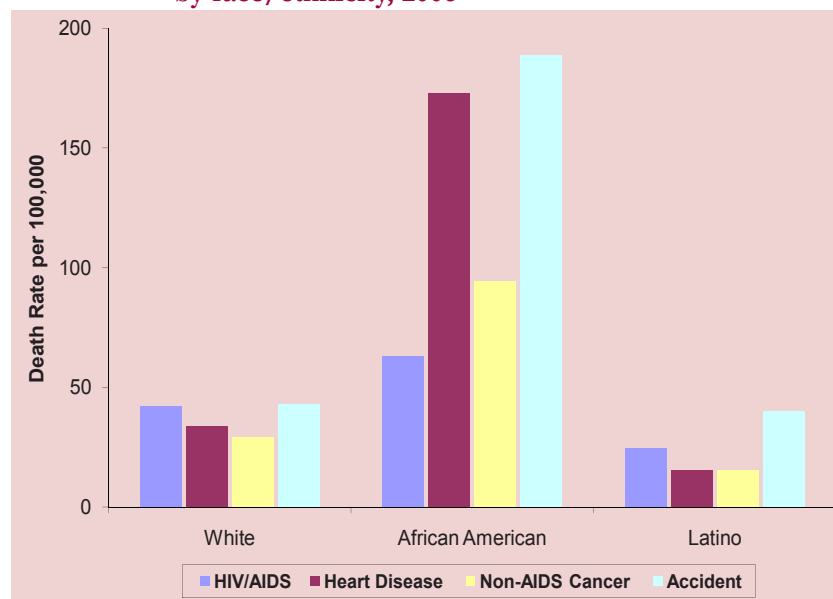
Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2001-2006



* COPD: chronic obstructive pulmonary disease.

In 2006, African American males suffered from higher death rates from the top four leading causes of death than did Latino and white men (Figure 5.4). The greatest discrepancy was observed for deaths due to accidents and heart disease. The HIV/AIDS death rate for African Americans (63 per 100,000) was about 2.5 times greater than the death rate among Latino men (25 per 100,000) and 1.5 times greater than the death rate among whites (42 per 100,000). HIV/AIDS is the second leading cause of death among both whites and Latinos.

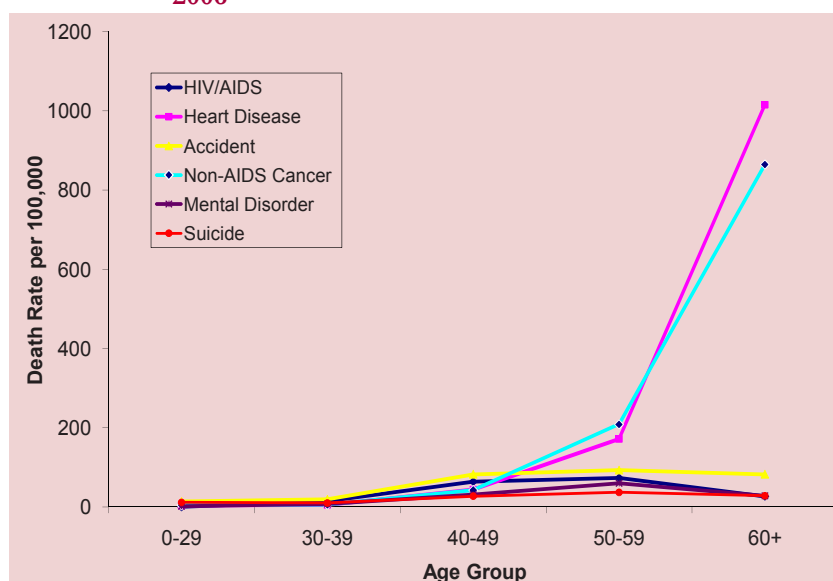
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2006



* 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. Accidents were the leading cause of death among men under 50. The HIV/AIDS related death rate was the greatest among those aged 50-59 (73 per 100,000) followed by those aged 40-49 (64 per 100,000). Men over age 50 died at a 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, 2006



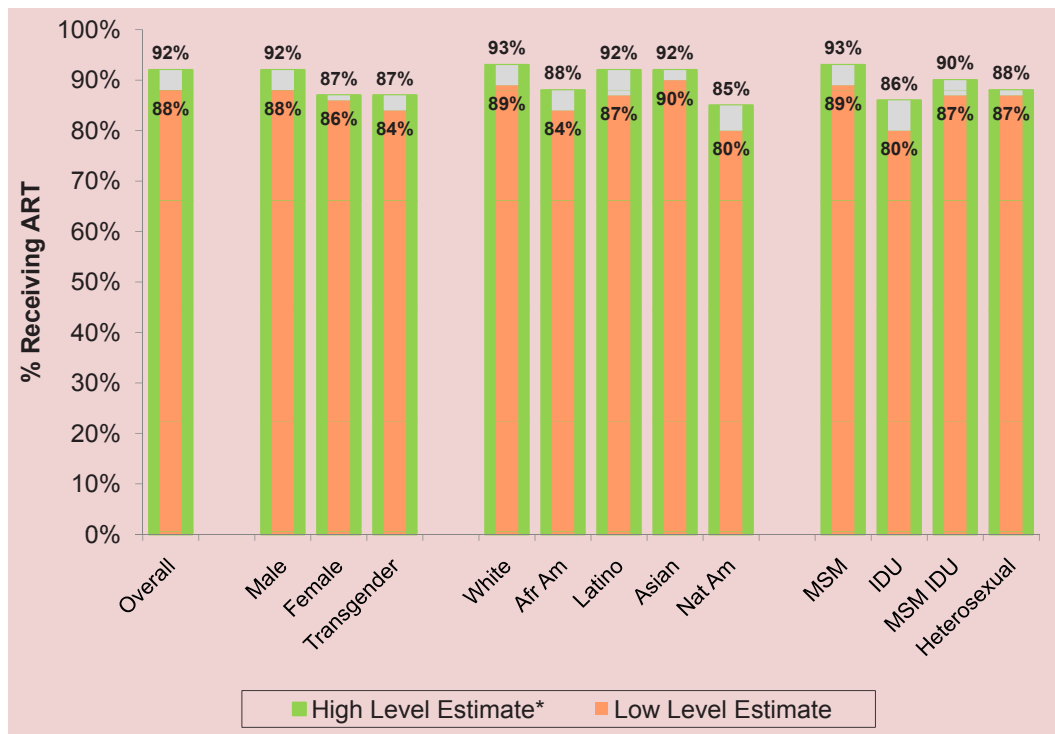
* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file

6

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.1 shows an estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2008. Information on ART is obtained from medical chart review and persons who have been prescribed ART are assumed to have received it. The lower percentage shown in the figure provides the crude estimate of ART use among all persons living with AIDS. The higher percentage, including the grey area, 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. Because this calculation excludes persons who moved or who have been lost-to-follow-up (whose treatment information may be incomplete), it provides an upper level estimate of ART use. Overall, 88%-92% of persons living with AIDS received ART. ART use was lower among females, transgender persons, African Americans, Native Americans and injection drug users.

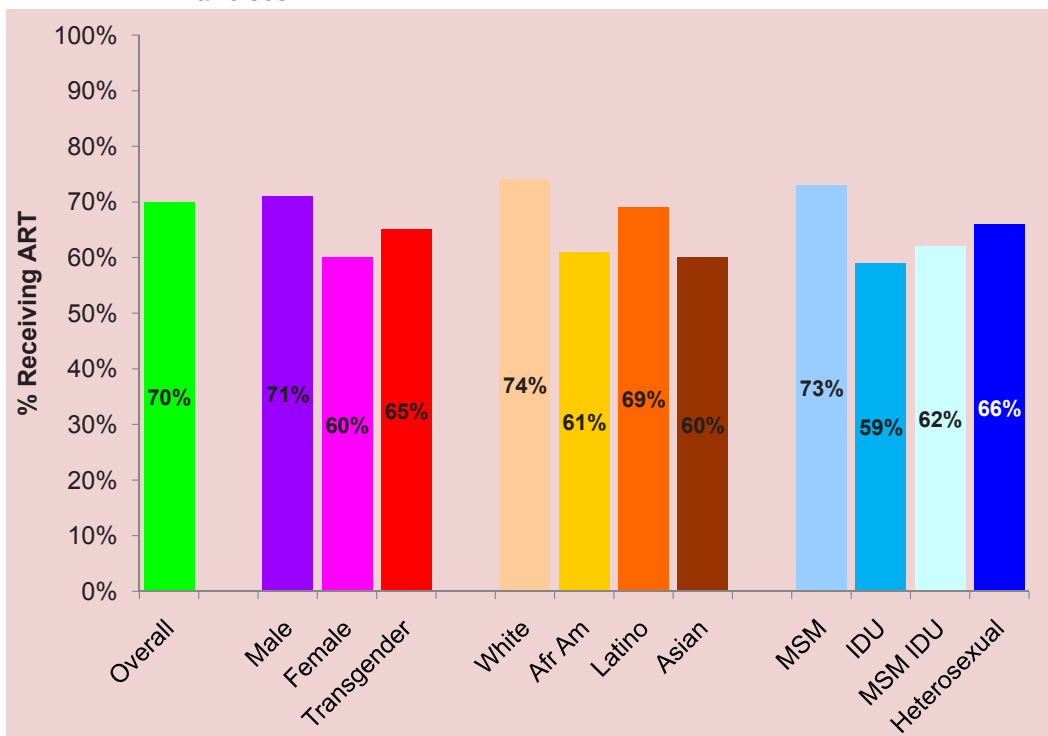
Figure 6.1 Estimate of antiretroviral therapy use among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2008, San Francisco



* Top value of percentage (including the grey area) indicates the proportion of ART use after excluding persons who were lost-to-follow-up.

Figure 6.2 shows use of ART among persons living with HIV who have not progressed to AIDS and have a CD4 count between 200 and 350 cells/ μ L (the current eligibility criteria for ART use in the U.S.) at any point after their HIV diagnosis. As of December 31, 2008, there were a total of 6,508 persons living with HIV non-AIDS. Of these, 90% have at least one CD4 count available and 75% have a CD4 count obtained within 12 months after their HIV diagnosis. Thirty-seven percent, or 2,424, of living HIV cases met the eligibility criteria for ART use. Overall, 70% of persons with HIV non-AIDS, who were eligible for treatment, received ART. Disparity in ART use is apparent, with females and transgender persons being less likely to receive ART than males. People of color were also less likely to receive ART. Information for Native Americans is not listed due to small numbers. Injection drug users have the lowest proportion of ART use.

Figure 6.2 Use of antiretroviral therapy among persons living with HIV non-AIDS by gender, race/ethnicity, and exposure category, December 2008, San Francisco



7 Insurance Status at Time of HIV/AIDS Diagnosis

The insurance status at time of AIDS diagnosis differs among men, women, and transgender persons. The proportion of men with private insurance was stable between 2003 and 2008 and was consistently higher than the proportions of women and transgender persons with private insurance (Figure 7.1). Among women and transgender persons, over 40% had public insurance, and among women, this proportion has increased since 2003.

For AIDS cases diagnosed between 2003 and 2008, 94% of transgenders and 86% of women had no insurance or public insurance, compared to 54% of men (Figure 7.2).

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2003-2008, San Francisco

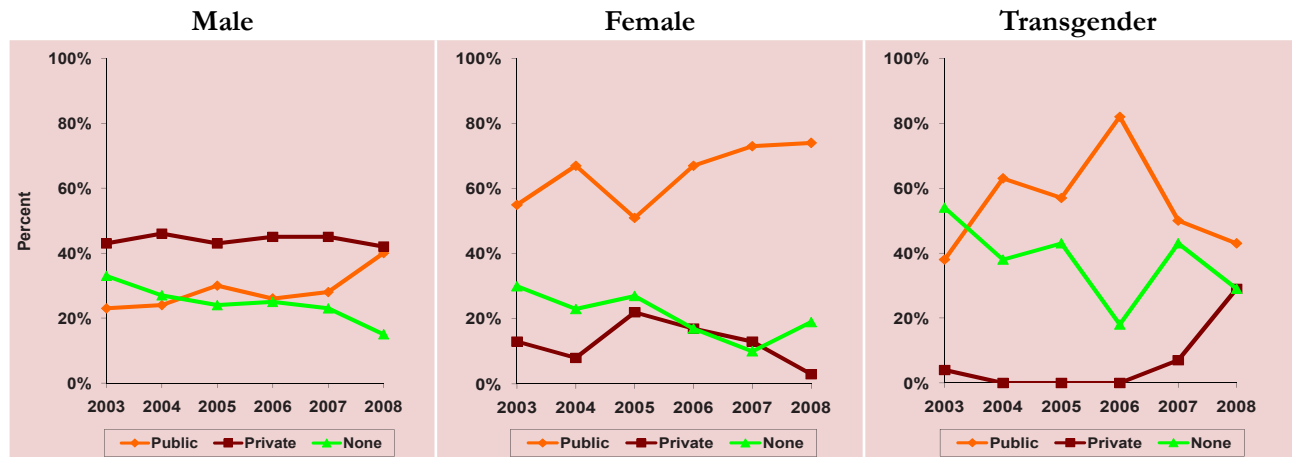
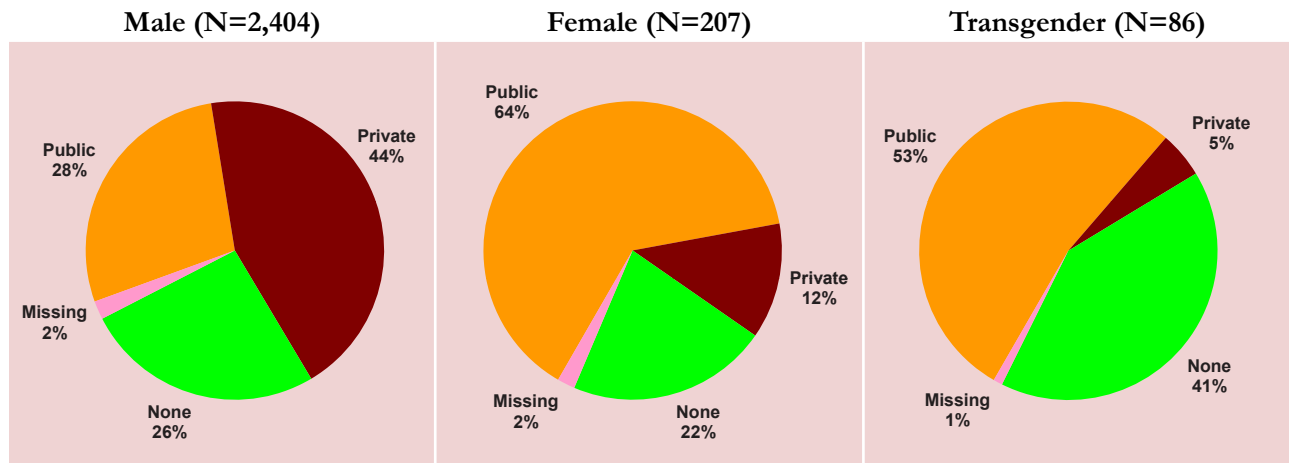


Figure 7.2 AIDS cases by gender and insurance status at diagnosis, 2003-2008, San Francisco

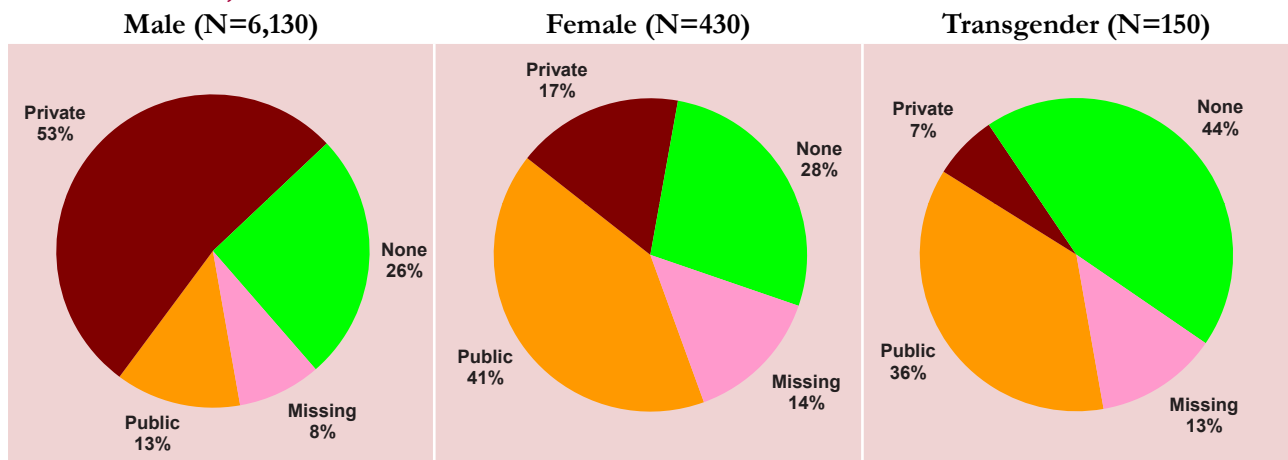


Insurance Status at Time of HIV/AIDS Diagnosis

We examined the insurance status for persons with HIV infection who had not progressed to AIDS (HIV non-AIDS) reported between 2003 and 2008, which includes cases diagnosed before and during this time period. Compared to AIDS cases (Figure 7.2), a higher proportion of HIV non-AIDS cases had private insurance at the time of HIV diagnosis (Figure 7.3). In addition, a greater percentage of HIV non-AIDS cases did not have insurance status available. HIV non-AIDS cases without insurance information reported were those whose follow-up information could not be obtained from the health care providers.

Similar to AIDS cases, there were differences in insurance status by gender for HIV non-AIDS cases. Thirty-nine percent of male HIV non-AIDS cases were under-insured, compared to 69% of female and 80% of transgender HIV non-AIDS cases (Figure 7.3).

Figure 7.3 HIV non-AIDS cases by gender and insurance status at diagnosis, cases reported in 2003-2008, San Francisco



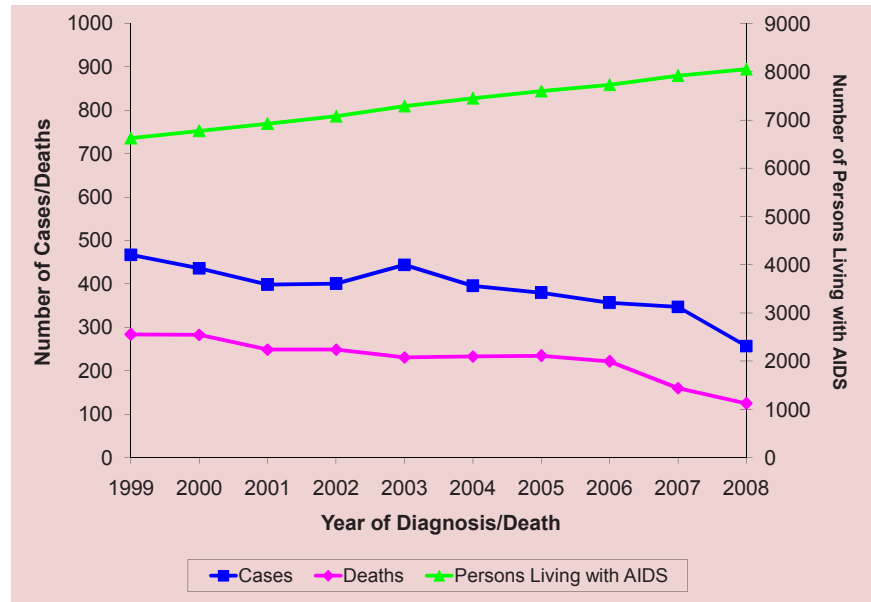


HIV/AIDS among Men Who Have Sex with Men

AIDS surveillance data

Over the last decade, numbers of 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 8.1). In 2008, there were 8,051 MSM living with AIDS in San Francisco.

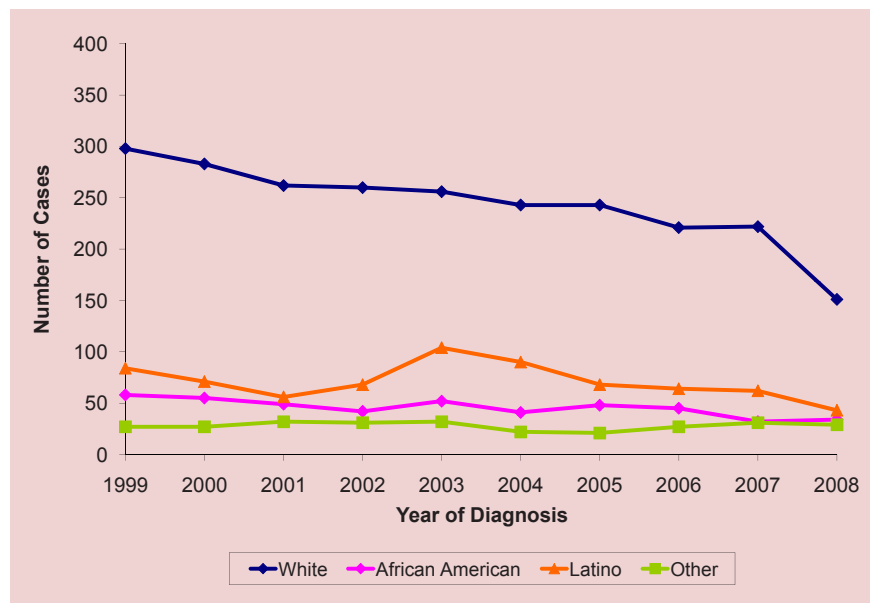
Figure 8.1 AIDS cases, deaths, and prevalence among MSM*, 1999-2008, San Francisco



* Includes MSM and MSM IDU.

The majority of San Francisco's MSM AIDS cases are white (Figure 8.2). Since 1999, the second most frequent racial/ethnic group among MSM AIDS cases was Latinos. In 2008, there were 151 white MSM, 43 Latino MSM, and 34 African American MSM diagnosed with AIDS in San Francisco.

Figure 8.2 AIDS cases among MSM* by race/ethnicity, 1999-2008, San Francisco



* Includes MSM and MSM IDU.

HIV sexual behavior data

The Stop AIDS Project collects information on sexual behavior and self-reported HIV status in the course of outreach prevention activities for MSM in San Francisco. Their data provide an opportunity to track trends in HIV-related risk behavior in a large, community-recruited sample of MSM. Such data may not be representative of all MSM in San Francisco.

Figure 8.3 shows trends in unprotected anal intercourse (UAI) from 1999 through 2008 by self-reported HIV serostatus. Among HIV-positive MSM, the percent reporting UAI fluctuates but generally shows an upward trend over the decade, and an apparent drop in the most recent year. Among HIV-negative MSM, UAI has shown a more steady increase over the last 10 years.

Figure 8.4 shows the proportion of MSM who reported UAI with sex partners whose HIV status was not known to them. This measure gauges the potential for HIV transmission by excluding sex between individuals known to be of the same HIV status. Overall, UAI between potentially HIV-serodiscordant men peaked in 2001. Potentially serodiscordant UAI reached a low in 2004 for HIV-negative MSM and in 2005 for HIV-positive MSM. Serodiscordant UAI appears to have leveled off, with fluctuation, in recent years.

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco

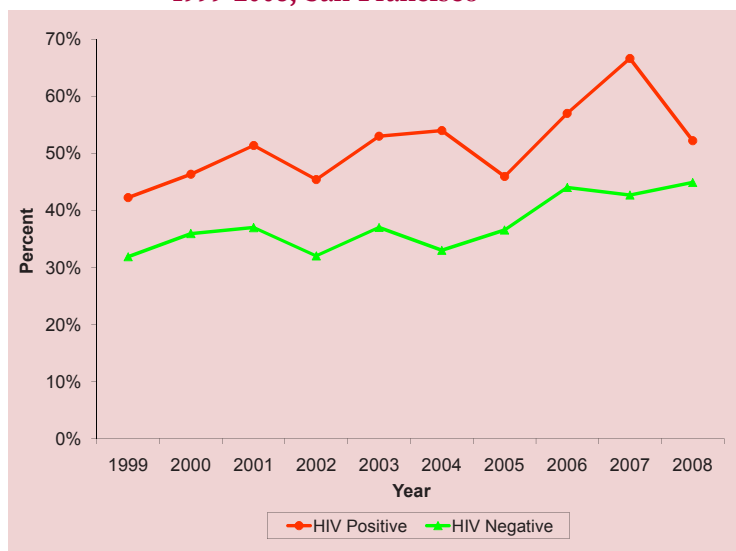
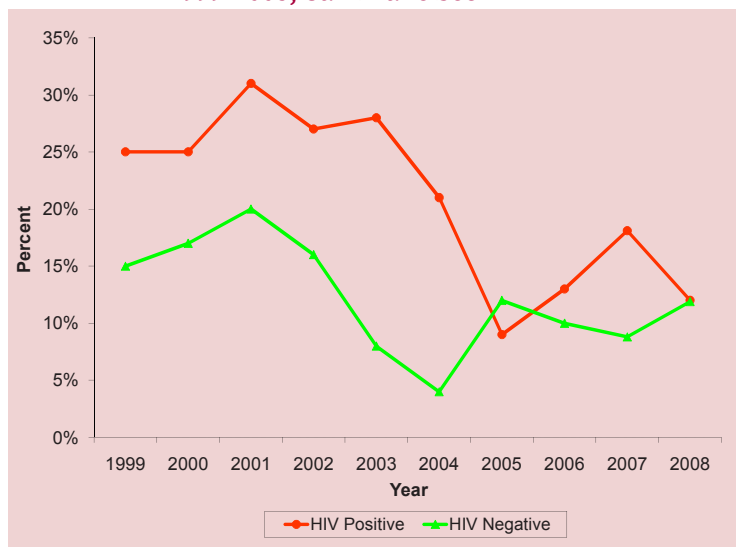
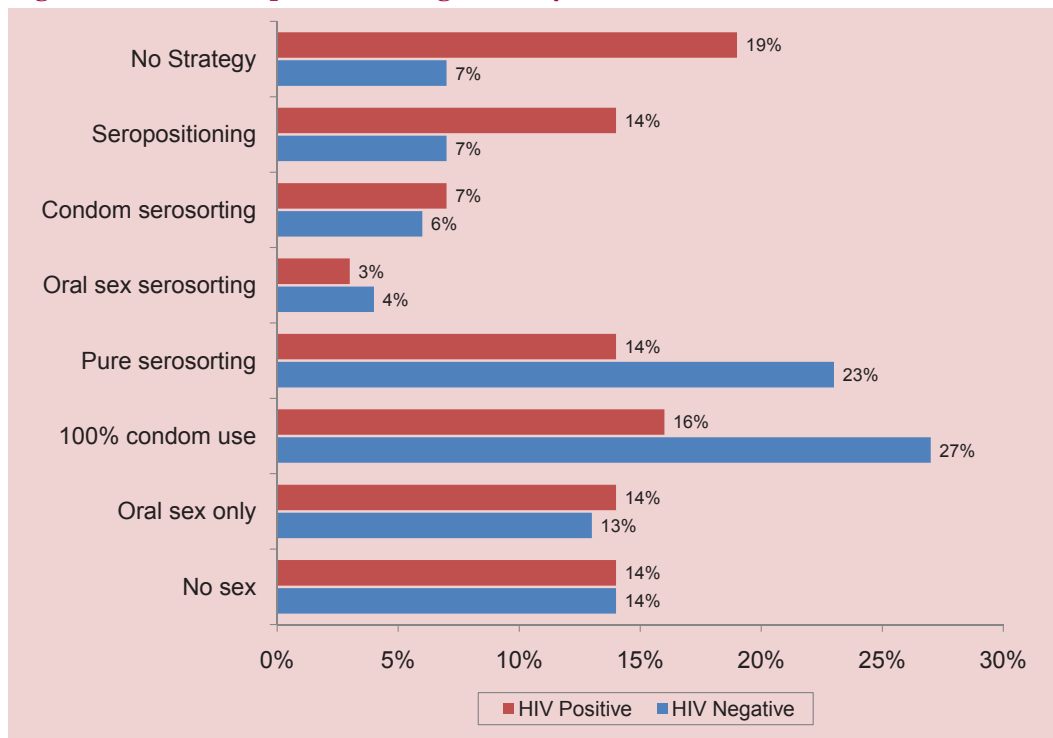


Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco



“Seroadaptation” broadly includes a range of sexual practices that may reduce the risk of HIV transmission that are guided by knowledge of one’s own and one’s sexual partners’ HIV serostatus. Figure 8.5 shows the prevalence of several seroadaptive strategies measured in a community-based sample of MSM. Data originate from a National Institutes of Health (NIH)-funded randomized, venue-based survey of MSM in San Francisco which included 1,212 MSM describing 2,717 partnerships of HIV-negative MSM and 762 partnerships of HIV-positive MSM. Consistent 100% condom use was reported by 27% of HIV-negative MSM and 16% of HIV-positive MSM. Having only partners of the same serostatus was reported by 23% of HIV-negative MSM and 14% of HIV-positive MSM. Other seroadaptive strategies include having oral sex only, having only oral sex when the partner is serodiscordant or of unknown serostatus, using condoms when the partner is serodiscordant or of unknown serostatus, and seropositioning. Seropositioning is when the HIV-negative partner has unprotected insertive anal intercourse (“top”) with an HIV-positive partner having receptive anal intercourse (“bottom”). It is not known how effective seroadaptive strategies are in preventing HIV transmission or how well they are adhered to.

Figure 8.5 Seroadaptation among MSM by HIV status, San Francisco, 2008



Sexually transmitted diseases among MSM

Figure 8.6 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 1998 through 2008. 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 several years have seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease after 2006. Male gonococcal proctitis are cases 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 8.6 Male rectal gonorrhea and male gonococcal proctitis among MSM, 1998-2008, San Francisco

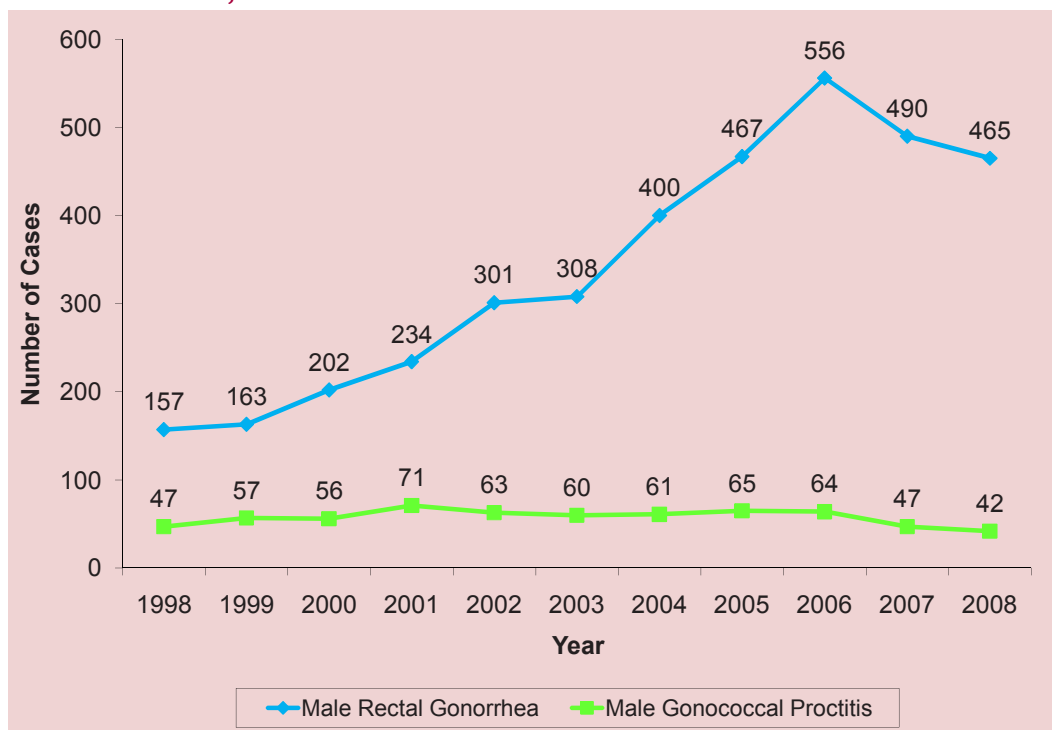
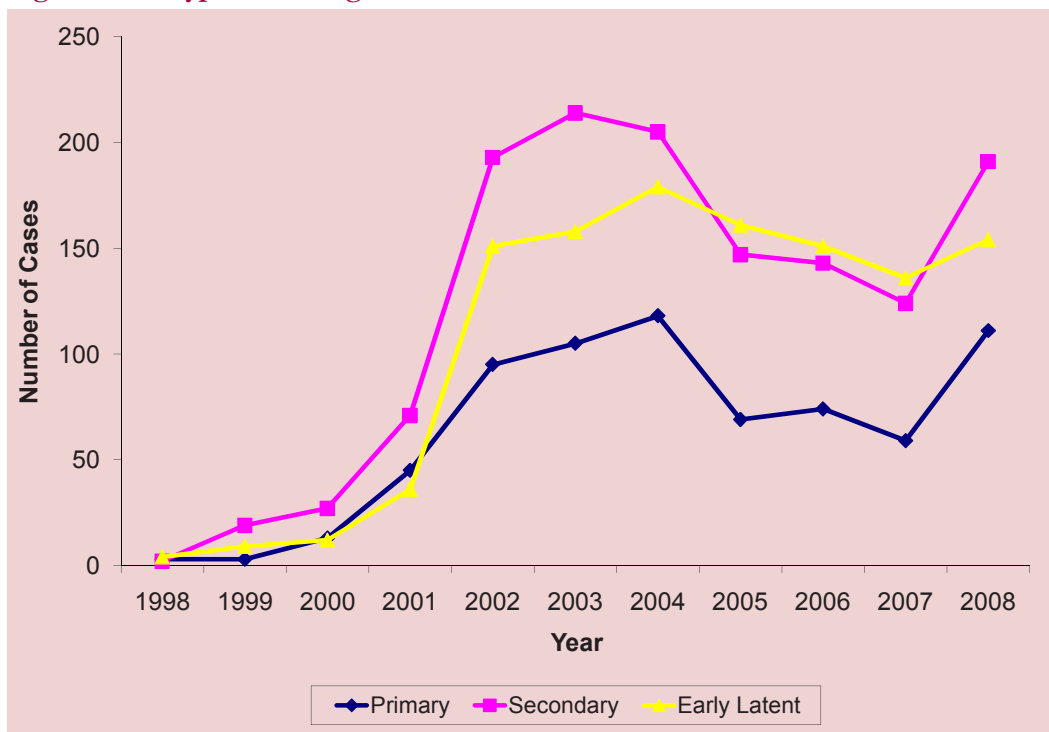


Figure 8.7 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 1998 through 2008. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior. The increase in early syphilis among MSM in San Francisco since 1998 is dramatic. In 2005, for the first time since this rapid rise, early syphilis among MSM declined. However, in 2008, primary, secondary and early syphilis among MSM began to rise again.

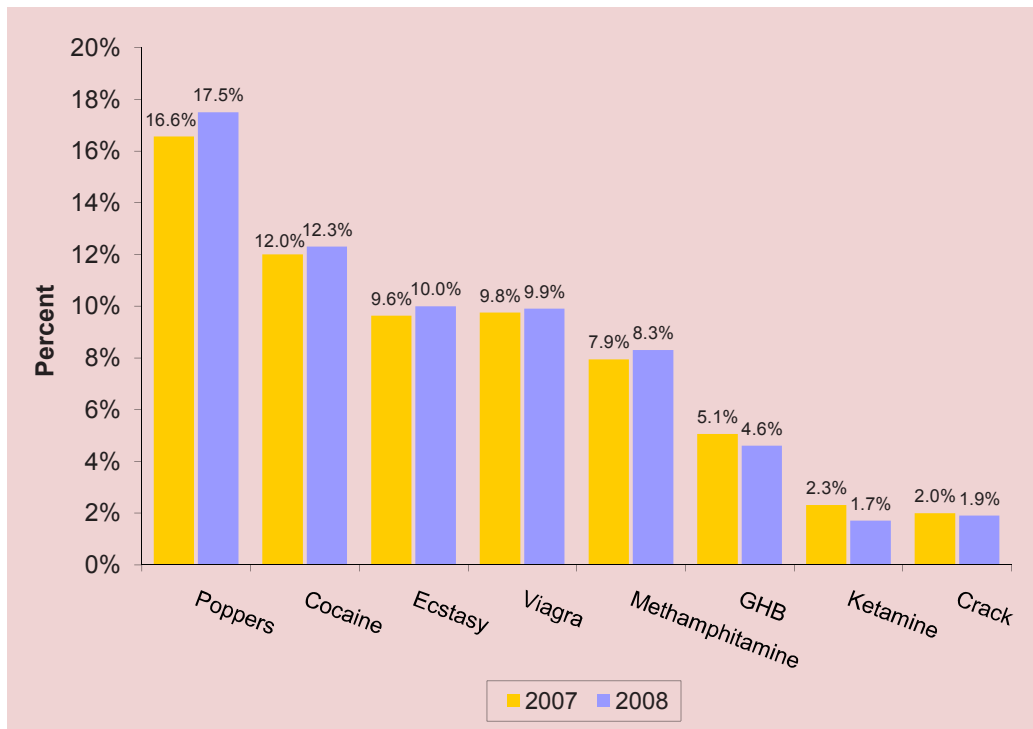
Figure 8.7 Syphilis among MSM, 1998-2008, San Francisco



Substance use

The STOP AIDS Project also records substance use in the last six months among MSM. Overall, the percent reporting use of a variety of drugs in 2008 did not change substantially from 2007 (Figure 8.8).

Figure 8.8 Substance use among MSM, the Stop AIDS Project, 2007-2008, San Francisco



9

HIV/AIDS among Injection Drug Users

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 2004 to 2008 (Figure 9.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2008, there were 781 non-MSM IDU living with AIDS in San Francisco.

From 1999 to 2004, African Americans accounted for the greatest number of AIDS cases among non-MSM IDU (Figure 9.2). 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/ethnicities accounted for few AIDS cases between 1999 and 2008.

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1999-2008, San Francisco

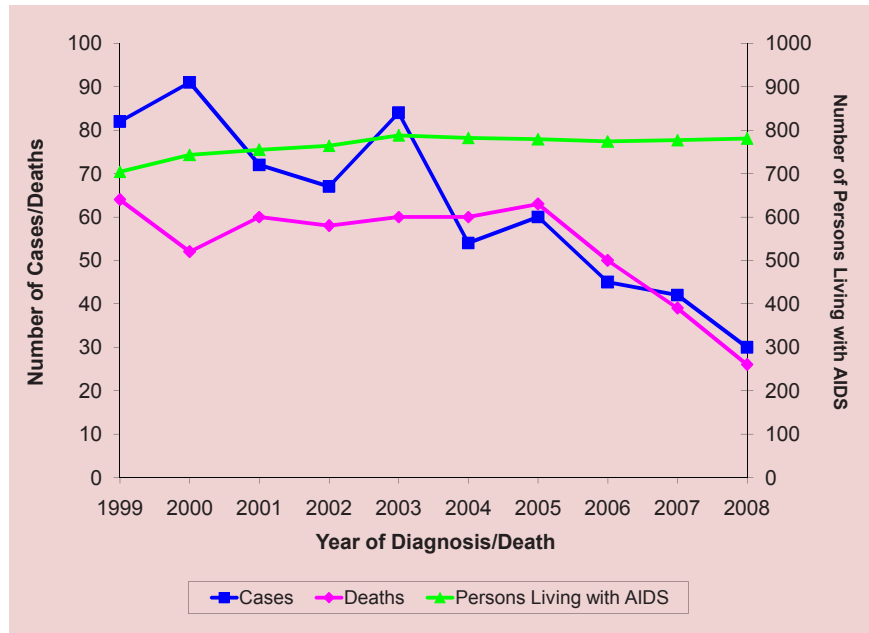


Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1999-2008, San Francisco

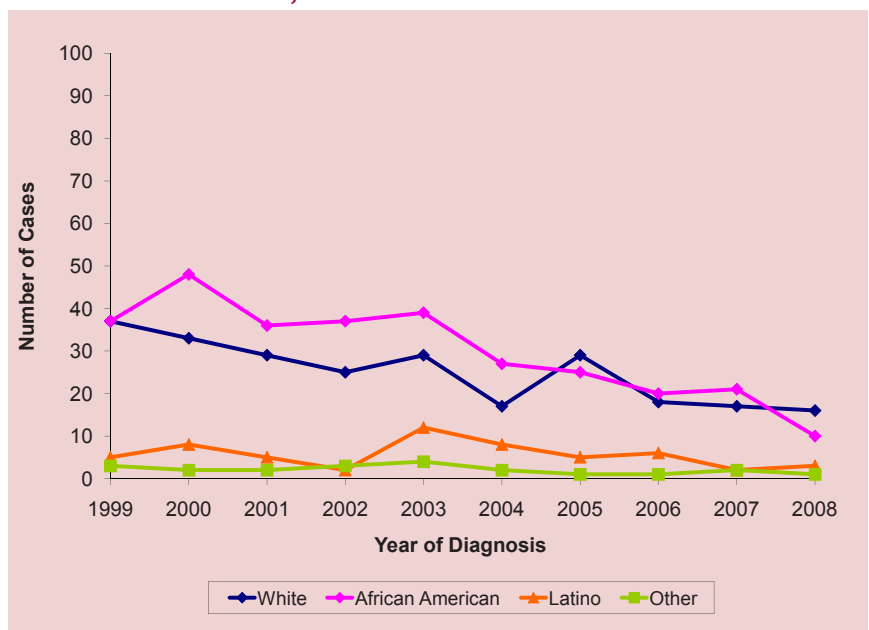


Table 9.1 shows the risk and race/ethnicity distributions of AIDS cases that were directly, or indirectly, associated with injection drug use. MSM IDU account for 64% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 22%. Whites make up the largest proportion of MSM IDU and Lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in other exposure categories.

Table 9.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2008, San Francisco

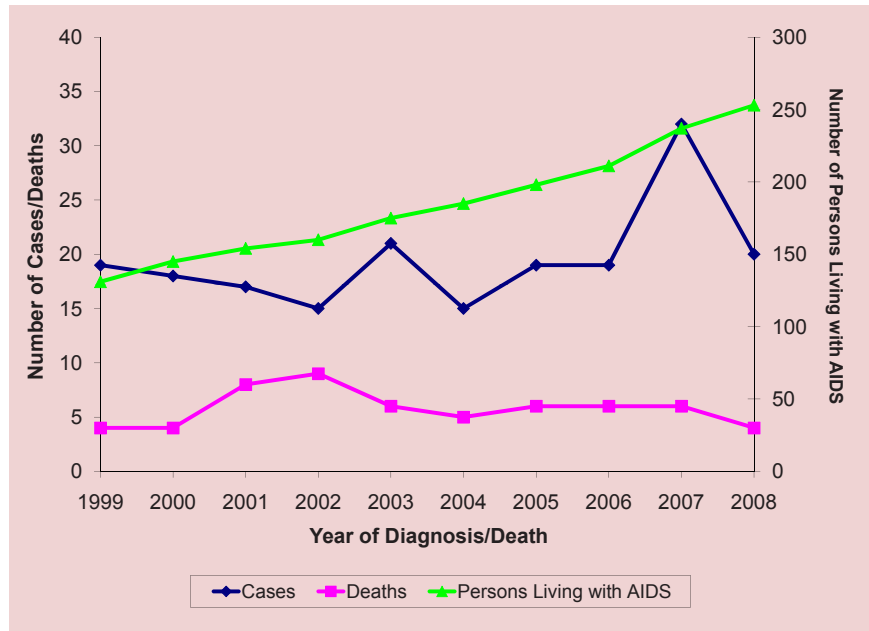
Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,412	37%	49%	12%	3%
Female heterosexual IDU	682	33%	52%	10%	5%
MSM IDU	4,195	70%	16%	10%	3%
Lesbian IDU	56	46%	38%	11%	5%
Heterosexual contact with IDU	150	33%	43%	15%	9%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

10 HIV/AIDS among Heterosexuals

AIDS surveillance data

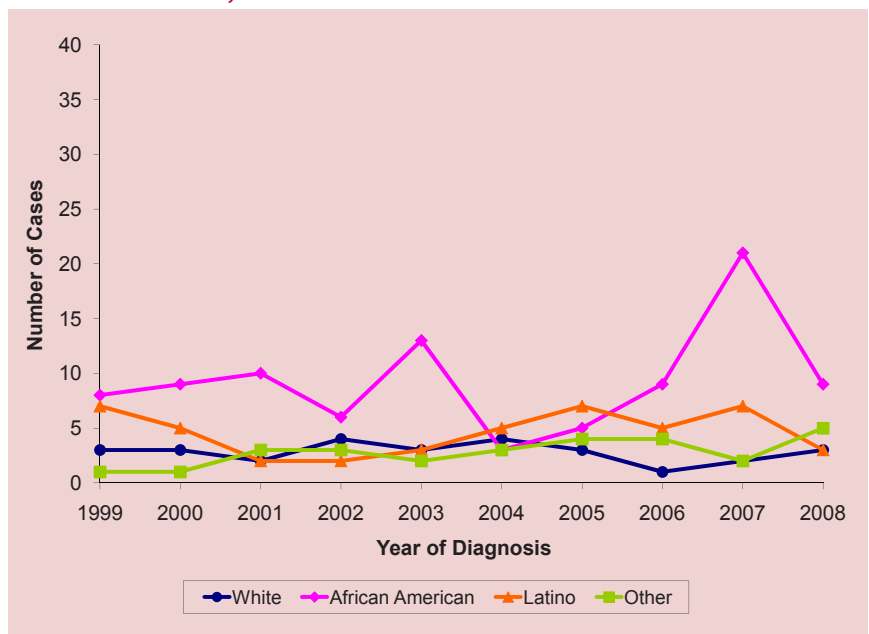
Between 1999 and 2006 the number of AIDS cases among persons who were infected with HIV through heterosexual contact was fairly level (Figure 10.1). Deaths among non-IDU heterosexuals have been stable during the last decade. The number of non-IDU heterosexuals living with AIDS increased to 253 by December 31, 2008.

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1999-2008, San Francisco



Trends in heterosexual AIDS cases by race/ethnicity are difficult to characterize due to the small number of cases (Figure 10.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 1999.

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1999-2008, San Francisco



The majority of heterosexually-acquired AIDS cases occurred in women (Table 10.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women, accounting for 71% of men exposed heterosexually and 45% of women exposed heterosexually.

Table 10.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2008, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	36	27%	114	38%
Sex with bisexual men	N/A	N/A	48	16%
Sex with HIV+ transfusion recipient	<5	-	<5	-
Sex with HIV+ persons of unknown risk	94	71%	134	45%

Sexually transmitted diseases among heterosexuals

Figure 10.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 1998 through 2008. 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 but with an increase in 2008.

Figure 10.4 Syphilis among heterosexual men, 1998-2008, San Francisco

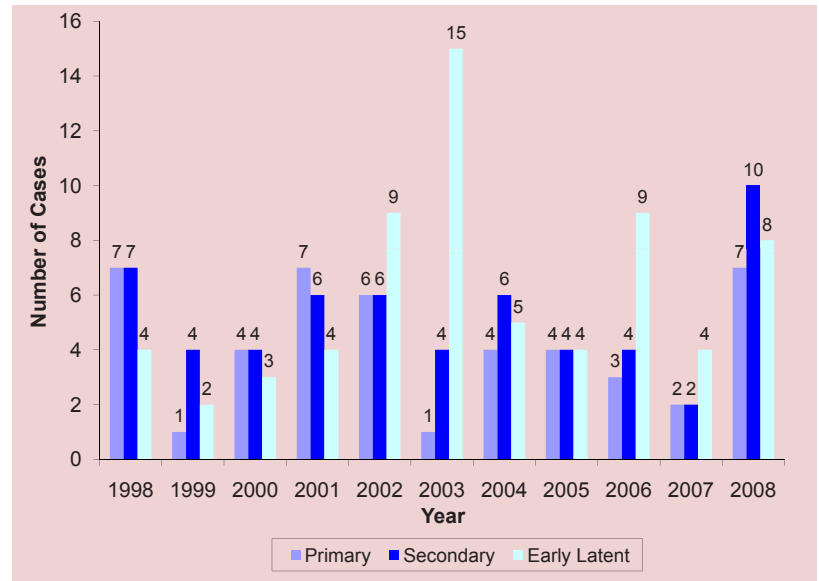
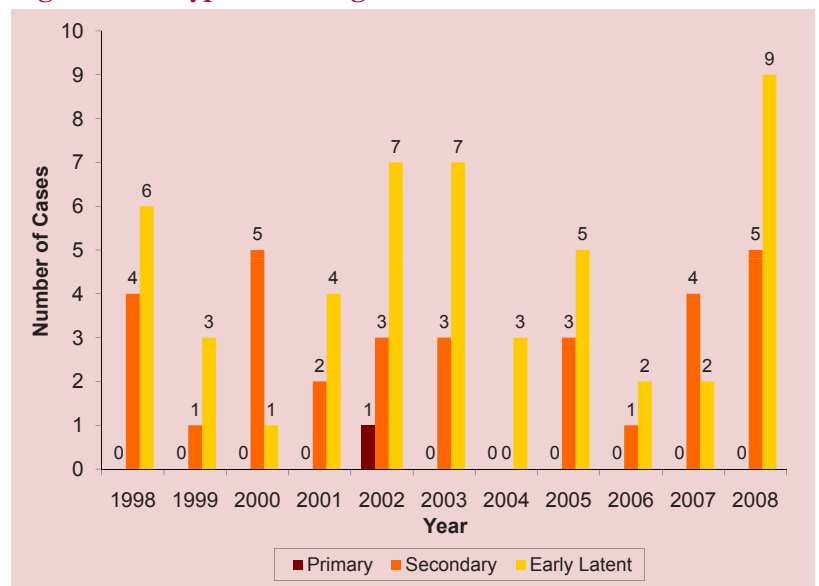


Figure 10.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 1998 through 2008. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD 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.

Figure 10.5 Syphilis among women, 1998-2008, San Francisco

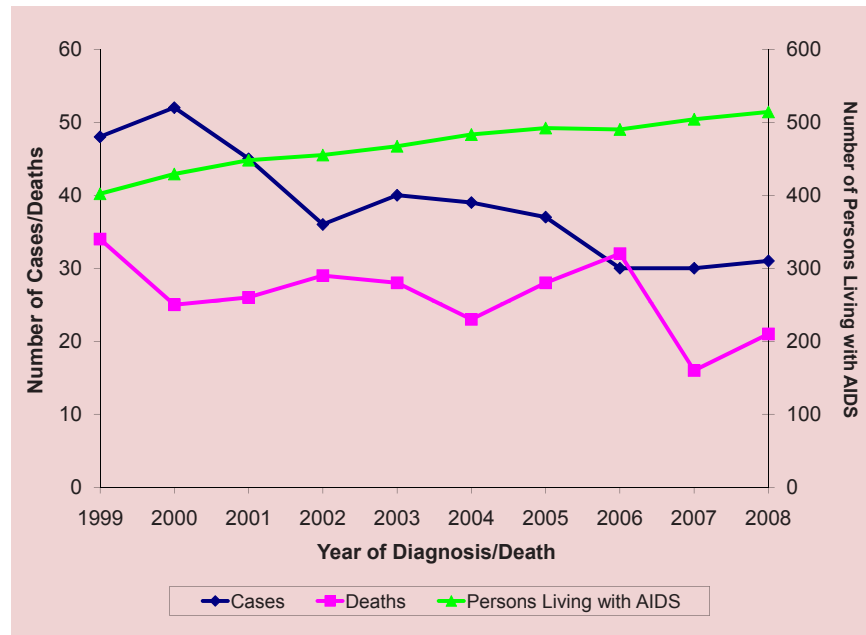


11

HIV/AIDS among Women

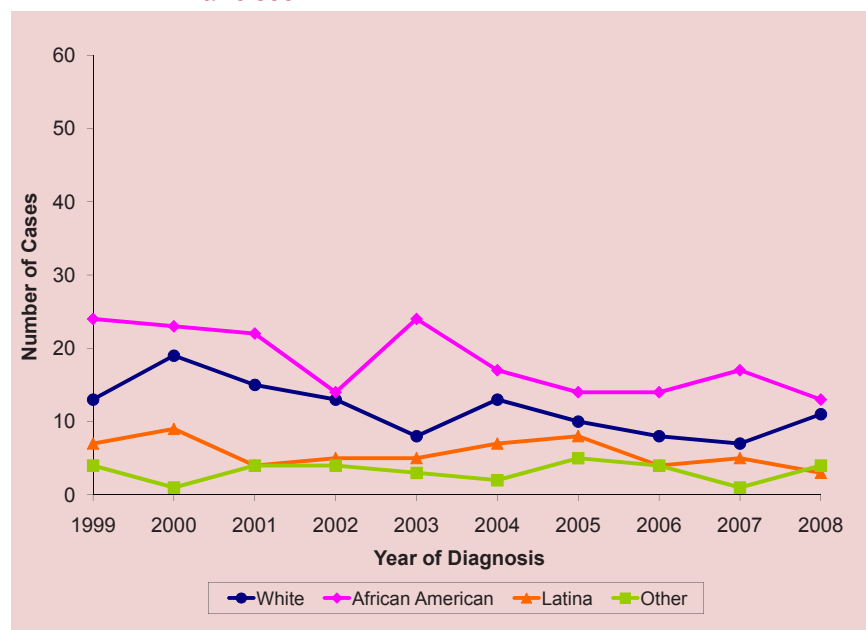
AIDS case numbers among women in San Francisco declined from 1999 to 2006 and stayed level from 2006 to 2008 (Figure 11.1). The number of deaths remained fairly stable from 1999 to 2006. As of December 31, 2008 there were 514 women living with AIDS.

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1999-2008, San Francisco



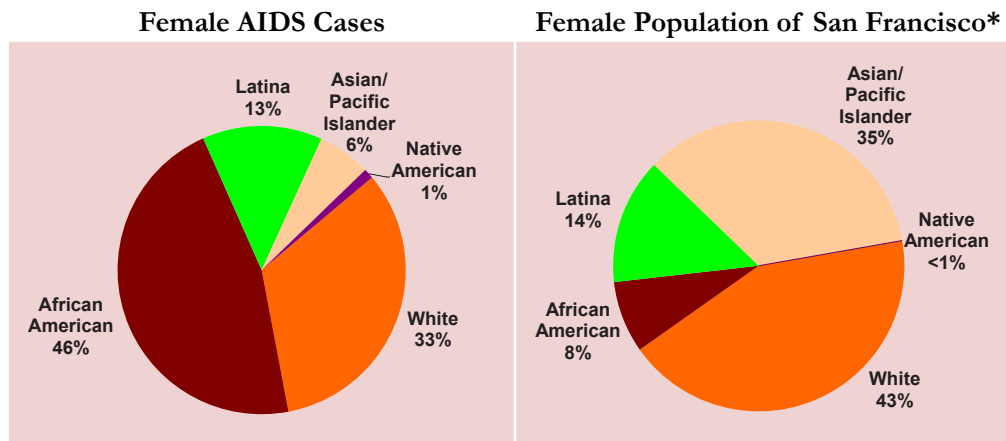
During 1999 to 2008, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 11.2).

Figure 11.2 Female AIDS cases by race/ethnicity, 1999-2008, San Francisco



Compared to the female population of San Francisco, African Americans are disproportionately affected among women diagnosed with AIDS (Figure 11.3). Although African American women represent 8% of the female population, they account for 46% of the female AIDS cases in San Francisco.

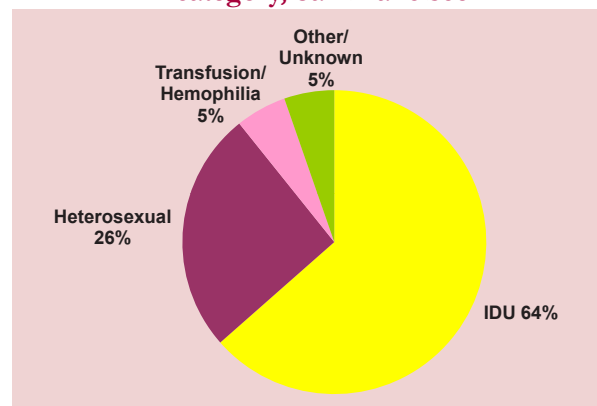
Figure 11.3 Female AIDS cases diagnosed through December 2008 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

Almost two-thirds of all female AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 11.4). More than a quarter of all female AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 11.4 Female AIDS cases diagnosed through December 2008 by exposure category, San Francisco



12 HIV/AIDS among Adolescents and Young Adults

Table 12.1 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, 2008. There were 25 adolescents and 140 young adults. Among living adolescent HIV/AIDS cases, the majority were infected with HIV perinatally. Latino and African Americans accounted for the highest percentage of adolescent cases. Among living young adult HIV/AIDS cases, the majority were MSM, and there were similar proportions of whites and Latinos.

Table 12.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2008, San Francisco

	13-19 Years Old (N=25)	20-24 Years Old (N=140)
Exposure Category		
MSM	28%	67%
IDU	0%	3%
MSM IDU	4%	11%
Heterosexual	4%	6%
Perinatal	56%	4%
Other/Unknown	8%	9%
Gender		
Male	52%	83%
Female	48%	9%
Transgender	0%	8%
Race/Ethnicity		
White	16%	30%
African American	32%	26%
Latino	36%	31%
Asian/Pacific Islander	8%	6%
Other/Unknown	8%	5%

Table 12.2 compares AIDS cases diagnosed among San Francisco adolescents and young adults with adolescents and young adults diagnosed nationally. From 2004 to 2007, the proportion of national adolescent and young adult AIDS cases was higher than San Francisco adolescent and young adult AIDS cases.

Table 12.2 AIDS cases diagnosed among adolescents and young adults, 2004-2007, San Francisco and the United States

	Year of Diagnosis			
	2004	2005	2006	2007
	Number (%)	Number (%)	Number (%)	Number (%)
San Francisco AIDS Cases				
Age 13-24 years at diagnosis	12 (3)	12 (3)	13 (3)	16 (4)
Total	478 (100)	474 (100)	431 (100)	432 (100)
U.S. AIDS Cases*				
Age 13-24 years at diagnosis	2,039 (5)	2,148 (6)	2,066 (6)	2,462 (7)
Total	38,695 (100)	37,256 (100)	36,791 (100)	37,041 (100)

* Based on estimated numbers in CDC HIV/AIDS Surveillance Report, 2007

13 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2008, 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 14 pediatric HIV non-AIDS cases reported between 2002 and 2008. Of these pediatric HIV/AIDS cases, 28 were known to be alive as of December 2008, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases acquired infection from a high-risk or AIDS-diagnosed mother (Table 13.1). Sixty-four percent are female and 93% are children of color.

Table 13.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2008, San Francisco

	N= 28
Exposure Category	
Perinatal	89%
Other/Unidentified	11%
Gender	
Male	36%
Female	64%
Race/Ethnicity	
White	7%
African American	29%
Latino	36%
Asian/Pacific Islander	14%
Other/Multirace	14%

Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In Northern California, hospital surveillance for children under 13 years old infected with HIV or infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV-positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants who were San Francisco residents and born to mothers documented to have HIV before delivery without a history of blood or blood product transfusion before 1985.

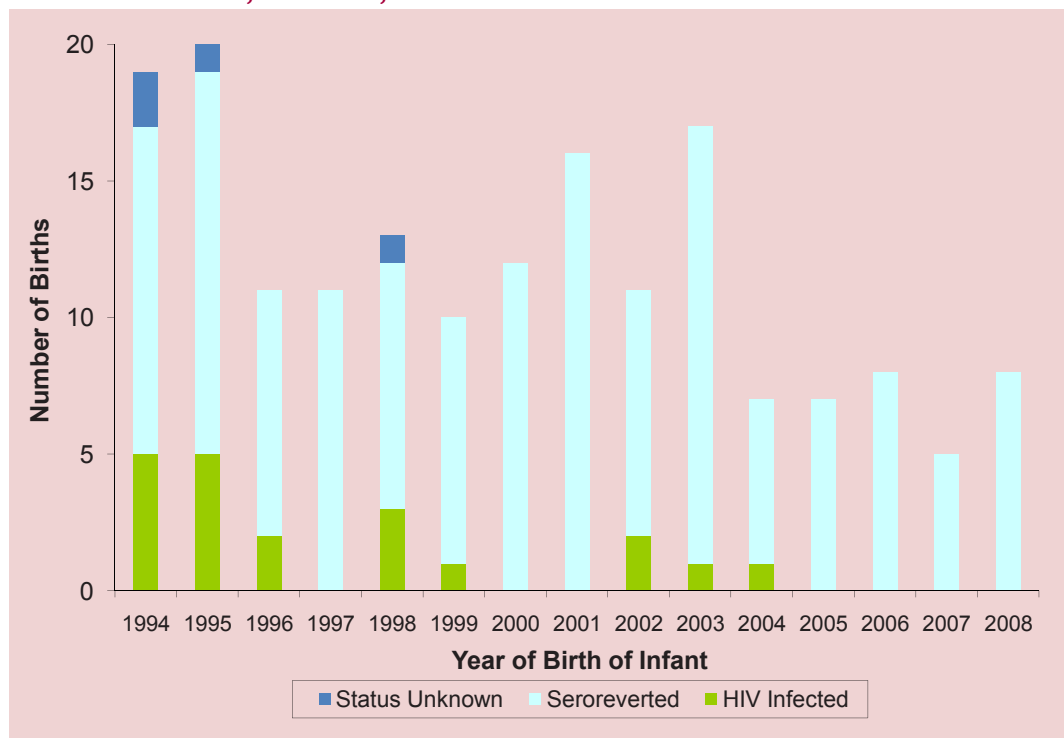
Through December 31, 2008, 332 infants were born to HIV-infected mothers who were residents of San Francisco (Table 13.2). Sixty-three (19%) of these infants were confirmed to be HIV-infected, 259 (78%) seroreverted (were determined to be uninfected after maternal antibodies disappeared), and 10 (3%) were of unknown serostatus. Forty-nine percent of perinatally exposed infants were African American, while whites and Latinos each accounted for 20% and 19% of these infants respectively.

Table 13.2 Infants born to HIV-infected mothers by infant HIV status and race/ethnicity, December 2008, San Francisco

	N (%)
Total	332
Infant HIV Status	
HIV-infected	63 (19)
Seroreverted (HIV-negative)	259 (78)
Unknown	10 (3)
Race/Ethnicity	
White	66 (20)
African American	162 (49)
Latino	64 (19)
Asian/Pacific Islander	24 (7)
Other/Unknown	16 (5)

The number of perinatally exposed infants who were confirmed as HIV-infected has remained low since 1996 (Figure 13.1). Declines in perinatal transmission of HIV are due to the improved therapies for mothers throughout pregnancy, at delivery, and for infants to prevent perinatal transmission. In 2008, eight infants born to HIV-infected mothers have been reported so far; all have seroreverted (i.e., were uninfected).

Figure 13.1 Infants born to HIV-infected mothers by year of birth and infant HIV status, 1994-2008, San Francisco



14 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 2002-2008, there were a total of 150 HIV non-AIDS and AIDS transgender cases diagnosed in San Francisco (Table 14.1). Compared to all HIV/AIDS cases diagnosed in the same time period, transgender HIV/AIDS cases were more likely to be non-white, injection drug users, and younger.

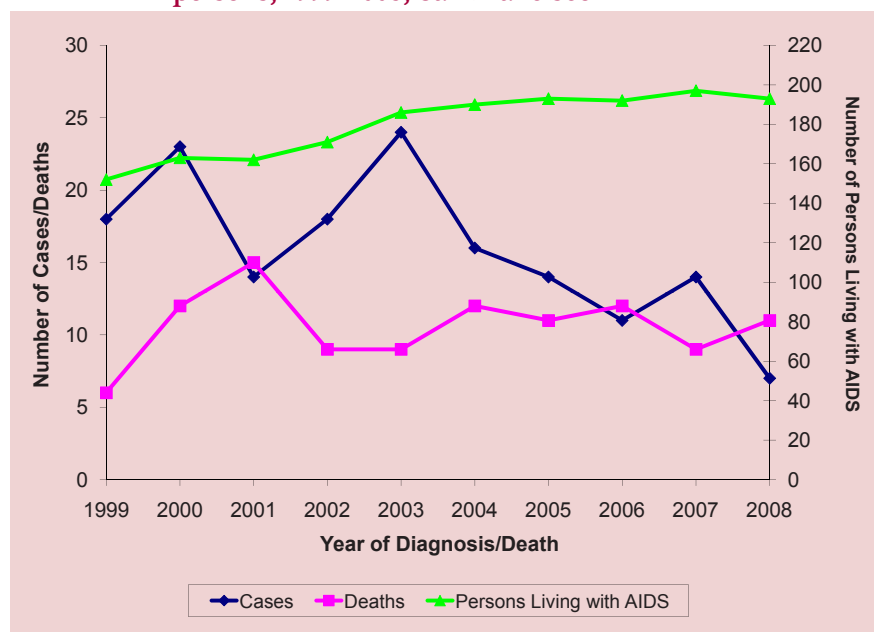
Table 14.1 Characteristics of transgender* HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2008, San Francisco

	Transgender HIV/AIDS Cases Diagnosed 2002-2008 (N=150)	HIV/AIDS Cases Diagnosed 2002-2008 (N=5,259)
Race/Ethnicity		
White	23%	55%
African American	33%	16%
Latino	29%	19%
Asian/Pacific Islander	11%	6%
Other/Unknown	4%	4%
Injection Drug Use		
Yes	39%	22%
No	61%	78%
Age at Diagnosis (Years)		
13 - 29	34%	21%
30 - 39	33%	39%
40 - 49	25%	29%
50+	8%	12%

* See Technical Notes "Transgender Status."

The numbers of transgender AIDS cases and deaths are small and fluctuate by year (Figure 14.1). The number of living transgender AIDS cases has leveled off since 2005. As of December 31, 2008 there were 193 living transgender AIDS cases.

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1999-2008, San Francisco



15 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 15.1 shows a decline in homeless AIDS cases diagnosed between 2000 and 2005. Since 1999, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 8% and 14%. For 2008, 12% of AIDS cases were homeless at the time of diagnosis.

Compared to all HIV/AIDS cases diagnosed from 2002 to 2008, persons who were homeless at their HIV/AIDS diagnosis (diagnosed 2002-2008) were more likely to be women, African American, injection drug users, and younger. (Table 15.1).

Figure 15.1 Number and percent of homeless AIDS cases by year of diagnosis, 1999-2008, San Francisco

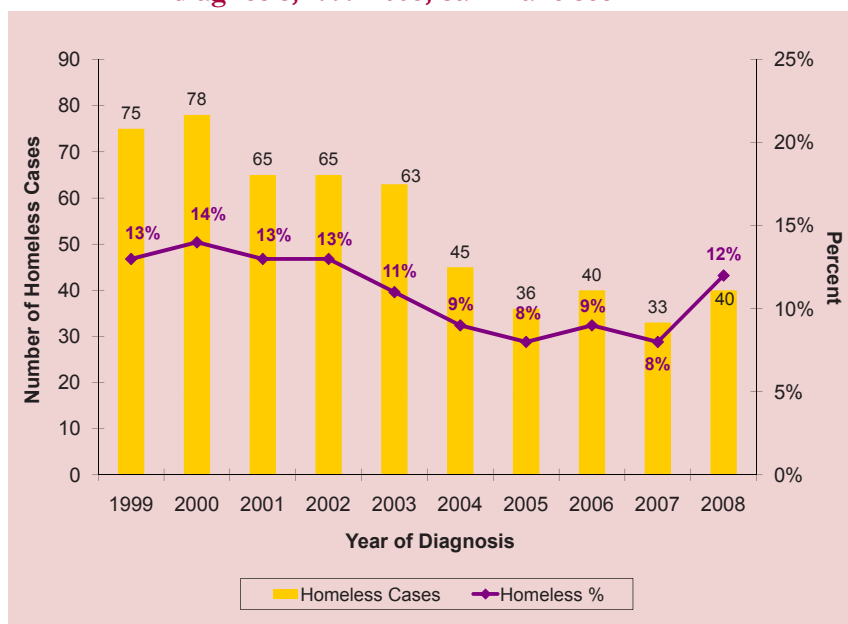


Table 15.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2008, San Francisco

	Homeless AIDS 2002-2008 (N=322)	AIDS Cases 2002-2008 (N=3,192)	Homeless HIV non-AIDS Cases 2002-2008 (N=253)	HIV non- AIDS Cases 2002-2008 (N=3,368)
Gender				
Male	84%	92%	86%	93%
Female	16%	8%	14%	7%
Race/Ethnicity				
White	46%	56%	45%	56%
African American	34%	18%	30%	15%
Latino	14%	18%	14%	17%
Other/Unknown	6%	8%	10%	11%
Exposure Category				
MSM	25%	64%	36%	68%
IDU	37%	12%	29%	8%
MSM IDU	29%	17%	23%	12%
Heterosexual	6%	4%	4%	3%
Other/Unidentified	2%	3%	10%	9%
Age at Diagnosis (years)				
0 - 19	1%	<1%	2%	2%
20 - 29	12%	9%	30%	22%
30 - 39	30%	33%	29%	41%
40 - 49	42%	37%	30%	26%
50+	16%	20%	9%	9%

The SFDPH provides permanent, supportive housing services to homeless persons who have the most severe chronic medical and/or psychiatric needs through the Direct Access to Housing (DAH) program. Support services include on-site medical care, case management, and access to medical services at the Housing and Urban Health clinic, located near the residences. The monthly cost per DAH resident is approximately \$1000.

Persons with AIDS who were homeless at time of diagnosis were identified from the AIDS case registry and computer matched with the DAH database to determine whether they obtained DAH housing. Seventy AIDS cases matched with the DAH database and had move-in dates that were later than the AIDS diagnosis date. Homeless persons with AIDS who received supportive housing were similar to those who did not enter DAH except that they tended to be older (Table 15.2).

We compared the mortality of those who were placed into DAH residences to those who were not. There were two deaths among the 70 homeless persons who received DAH housing compared with 219 deaths out of 606 who were not housed in DAH residences. In a separate multivariate analysis that takes into account other factors affecting mortality, entry into the DAH reduced mortality by 80%.

Supportive housing is likely to have reduced mortality among homeless persons with AIDS by making medical care readily available, providing residents with a place to store their AIDS medications, and helping them adhere to their treatment regimen because housing provides a structure that contributes to a steady routine.

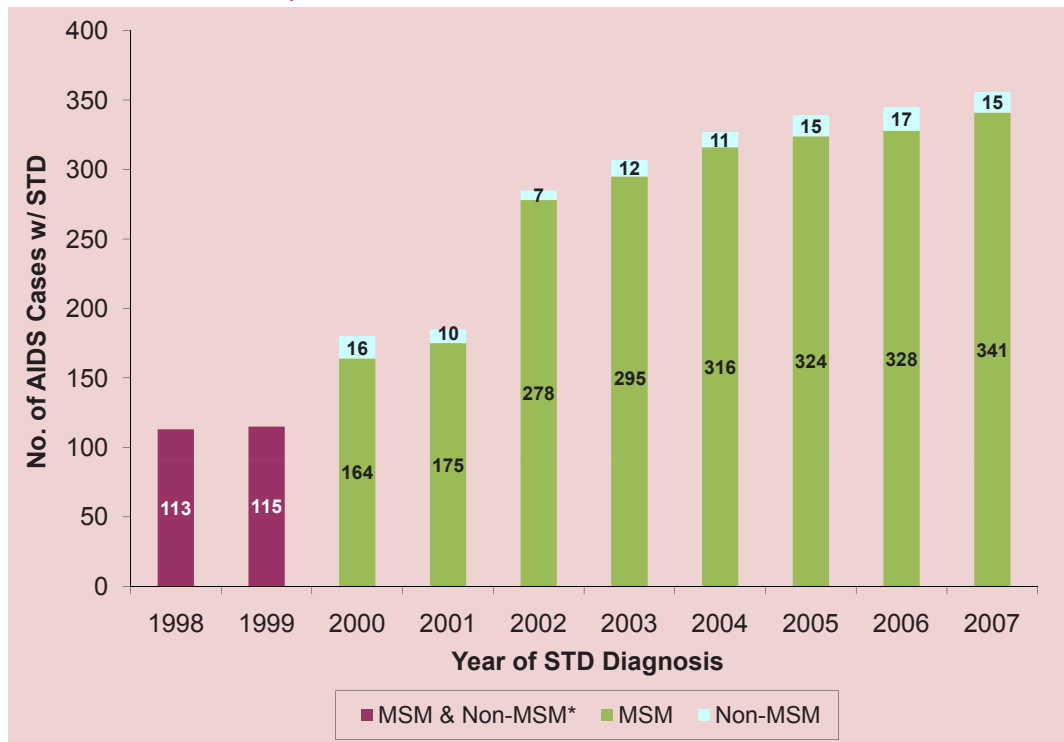
Table 15.2 Characteristics of homeless persons with AIDS who did and did not receive housing through the Direct Access to Housing program, 1996-2006, San Francisco

	Received Housing	
	Yes	No
Total Number	70	606
Gender		
Male	69%	78%
Female	23%	14%
Transgender	9%	8%
Age at Diagnosis (years)		
13-29	11%	14%
30-39	31%	40%
40-49	36%	35%
50+	21%	11%
Race/Ethnicity		
White	39%	41%
African American	40%	39%
Latino	14%	16%
Other	7%	4%
Exposure Category		
MSM	27%	20%
IDU	44%	40%
MSM IDU	24%	34%
Heterosexual/Other	4%	6%
Insurance Status		
Public	37%	34%
Private	4%	1%
None	57%	63%
Unknown	1%	2%
Initial AIDS Diagnosis		
Low CD4 count	79%	79%
Opportunistic illness	21%	21%
CD4 Count at Diagnosis (mean cells/μL)	176	172
Ever Received Antiretroviral Therapies		
Yes	80%	71%
No	20%	29%
Ever Received Prophylaxis against <i>Pneumocystis Jirovecii</i> Pneumonia		
Yes	67%	65%
No	33%	35%
Ever Received Prophylaxis against <i>Mycobacterium Avium</i> Complex		
Yes	27%	27%
No	73%	73%

16 Sexually Transmitted Diseases among Persons with HIV/AIDS

The occurrence of sexually transmitted disease (STD) diagnoses among persons living with HIV/AIDS is an important marker for sexual risk behavior. Diagnosis of STDs occurring among persons with HIV/AIDS was determined through a computerized match of the HIV/AIDS and STD case registries through 2007. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 1998 with a pronounced increase in 2002 (Figure 16.1). This jump in STDs among persons with AIDS could be expected due to steep increases in male rectal gonorrhea (see Figure 8.6) and syphilis (see Figure 8.7), particularly among MSM, reported in 2002. Starting in 2007, HIV non-AIDS cases were included in the match to identify STD diagnosis among persons with HIV infection who had not developed AIDS. In 2007, STD diagnoses occurred among 453 MSM HIV cases and 16 non-MSM HIV cases. All STDs occurred after the HIV/AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 16.1 Number of AIDS cases diagnosed with an STD by year of STD diagnosis, 1998-2007, San Francisco



* Prior to 2000, data for MSM and non-MSM was not separated.

17 Access to Care among Persons with HIV/AIDS

Estimate of unmet need for HIV medical care

An analysis was conducted to estimate unmet need for medical care for persons living with AIDS (PLWA) and HIV non-AIDS (PLWH) in San Francisco. Unmet need for care was defined as not having had a laboratory test or receipt of antiretroviral therapy during the 12-month period from July 1, 2006 through June 30, 2007. Care information was obtained from laboratory reporting of viral load and CD4 test results, medical record chart reviews, and data from Medi-Cal, the AIDS Drug Assistance Program (ADAP), the AIDS Regional Information and Evaluation System (ARIES), and Kaiser Permanente Northern California. The unmet need estimates included both San Francisco residents and non-residents diagnosed with HIV/AIDS in San Francisco, and did not include undiagnosed or unreported cases.

We estimated that there were 10,254 PLWA and 9,237 PLWH in San Francisco during this time period. A total of 825 (8%) PLWA and 3,286 (36%) PLWH did not receive medical care (Table 17.1). Unmet need was higher among African Americans, those aged less than 40 years old, IDUs and heterosexuals.

Table 17.1 Unmet need by demographic and risk characteristics among persons living with HIV/AIDS, July 2006-June 2007, San Francisco

	Persons with AIDS N=10,254		Persons with HIV/non-AIDS N=9,237		All HIV/AIDS N=19,491	
	with unmet need Number	%	with unmet need Number	%	with unmet need Number	%
Total	825	8%	3,286	36%	4,111	21%
Gender						
Male	782	8%	3,017	35%	3,799	21%
Female	43	7%	269	37%	312	23%
Race/Ethnicity						
White	399	6%	1,937	34%	2,336	19%
African American	190	13%	547	40%	737	26%
Latino	159	10%	465	35%	624	21%
Asian/Pacific Islander	52	11%	174	37%	226	24%
Other	25	27%	163	43%	188	40%
Age in Years (as of June 2007)*						
20 - 29	20	10%	373	51%	393	42%
30 - 39	163	12%	956	41%	1,119	30%
40 - 49	148	3%	1,238	34%	1,386	17%
50 - 59	372	12%	557	30%	929	18%
60+	99	9%	131	23%	230	14%
Exposure Category						
MSM	581	8%	2,172	32%	2,753	20%
IDU	76	9%	381	61%	457	30%
MSM IDU	96	7%	510	51%	606	25%
Heterosexual	31	10%	143	53%	174	31%
Other/Unidentified	41	17%	80	12%	121	14%

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

Assessing access to medical care using CD4 tests 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 test as a marker for entry into medical care. The majority (84%) of persons diagnosed with HIV during 2005-2007 received medical care within 12 months of their HIV diagnosis (Table 17.2). The median value of the initial CD4 counts within 12 months of diagnosis was 423 cells/ μ L.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, African Americans, Latinos, persons reported without a risk, and those between 13 and 29 years of age. 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.

Table 17.2 Percent of HIV/AIDS cases diagnosed between 2005 and 2007 receiving at least one CD4 test within 12 months of HIV diagnosis and the median of initial CD4 counts, San Francisco

	Number [§]	Percent received at least one CD4 test within 12 months following HIV diagnosis	Median of initial CD4 counts [¶] (cells/ μ L)
Total	1,884	84%	423
HIV Status			
HIV infection (not AIDS)	1,283	78%	522
Concurrent HIV and AIDS diagnosis [‡]	288	99%	107
AIDS diagnosed \geq 1 months after HIV diagnosis	313	93%	292
Gender			
Male	1,741	84%	418
Female	143	85%	499
Race/Ethnicity			
White	1,042	88%	453
African American	285	81%	400
Latino	373	80%	349
Asian/Pacific Islander	113	84%	350
Other/Unknown	71	63%	473
Exposure Category			
MSM	1,293	85%	420
IDU	142	87%	417
MSM IDU	226	83%	453
Heterosexual	103	92%	286
Other/Unidentified	120	61%	502
Age at HIV Diagnosis (years)			
13 – 29	424	82%	456
30 – 39	687	85%	432
40 – 49	546	84%	401
50+	227	86%	363

[§] Excludes 20 cases that were diagnosed at a facility outside of San Francisco and 34 cases who died within six months of diagnosis.

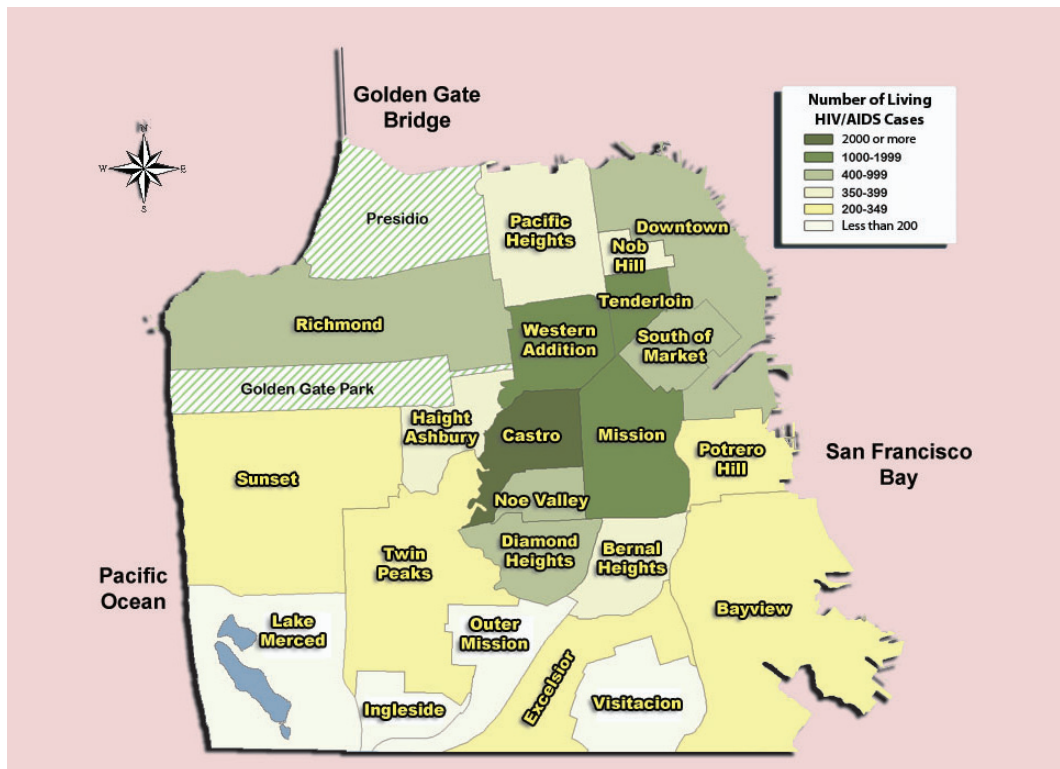
[¶] Median of initial CD4 counts measured within 12 months following HIV diagnosis.

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

18 Geographic Distribution of HIV/AIDS

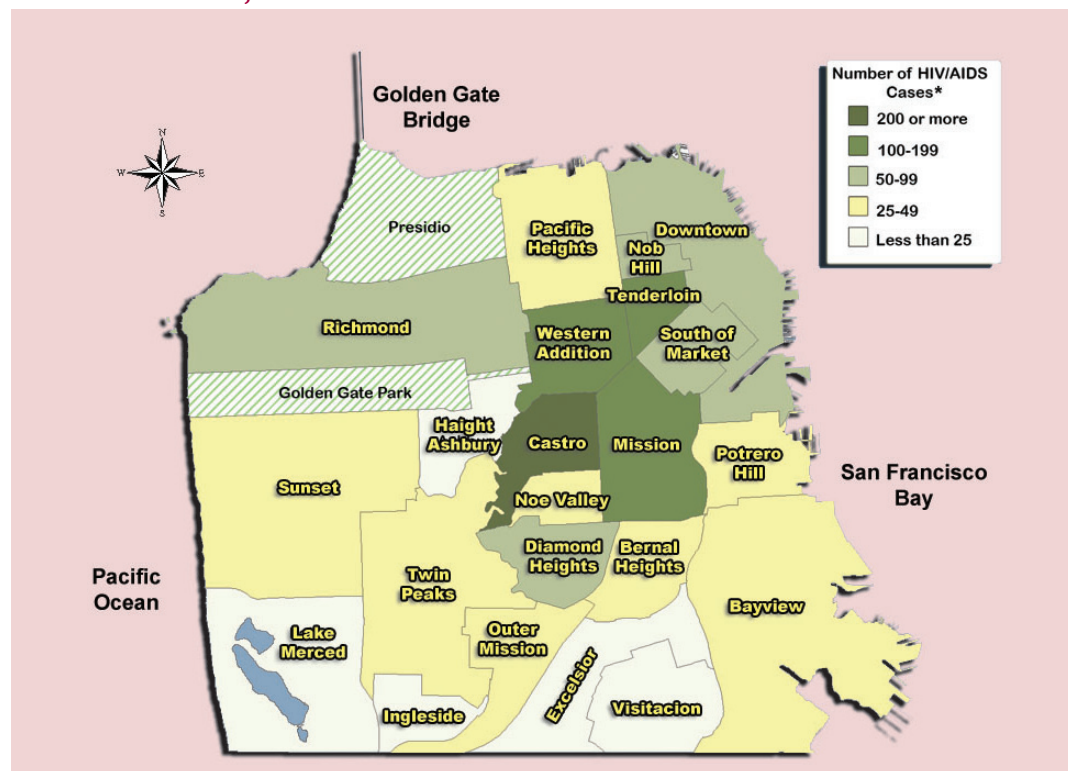
Map 18.1 illustrates the geographic distribution of HIV/AIDS cases in San Francisco who were alive as of December 31, 2008. The data includes persons who were San Francisco residents at the time of their HIV/AIDS diagnosis and not known to have died at the end of 2008. The neighborhoods with the highest number of living HIV/AIDS cases are the Castro, Mission, Western Addition, and Tenderloin.

Map 18.1 Spatial distribution of persons living with HIV/AIDS, December 2008, San Francisco



Geographical distributions of HIV/AIDS cases diagnosed from 2004 through 2008 were also examined and mapped by exposure category. Among MSM, the Castro remains the most heavily affected community, followed by the adjacent neighborhoods of Mission, Western Addition, and the Tenderloin (Map 18.2).

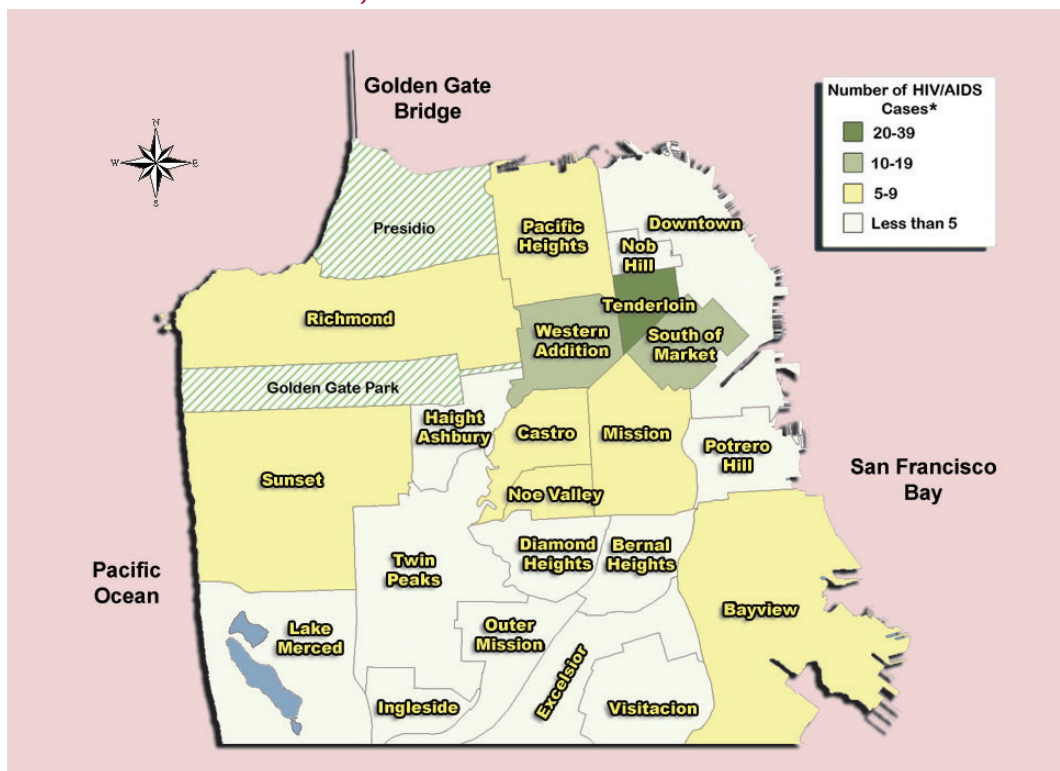
Map 18.2 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among MSM, San Francisco



* MSM cases that were homeless at time of diagnosis (n=60) are not displayed in the map.

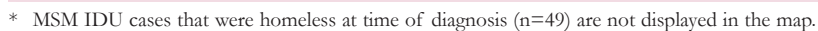
Map 18.3 shows HIV-infected injection drug users are mainly concentrated in the Tenderloin and two adjacent neighborhoods (Western Addition and South of Market). However, there are 59 homeless cases that accounted for the most diagnosed cases in 2004-2008 among non-MSM IDUs and exhibited an almost two-fold difference than the 30 Tenderloin cases.

Map 18.3 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among non-MSM IDU, San Francisco



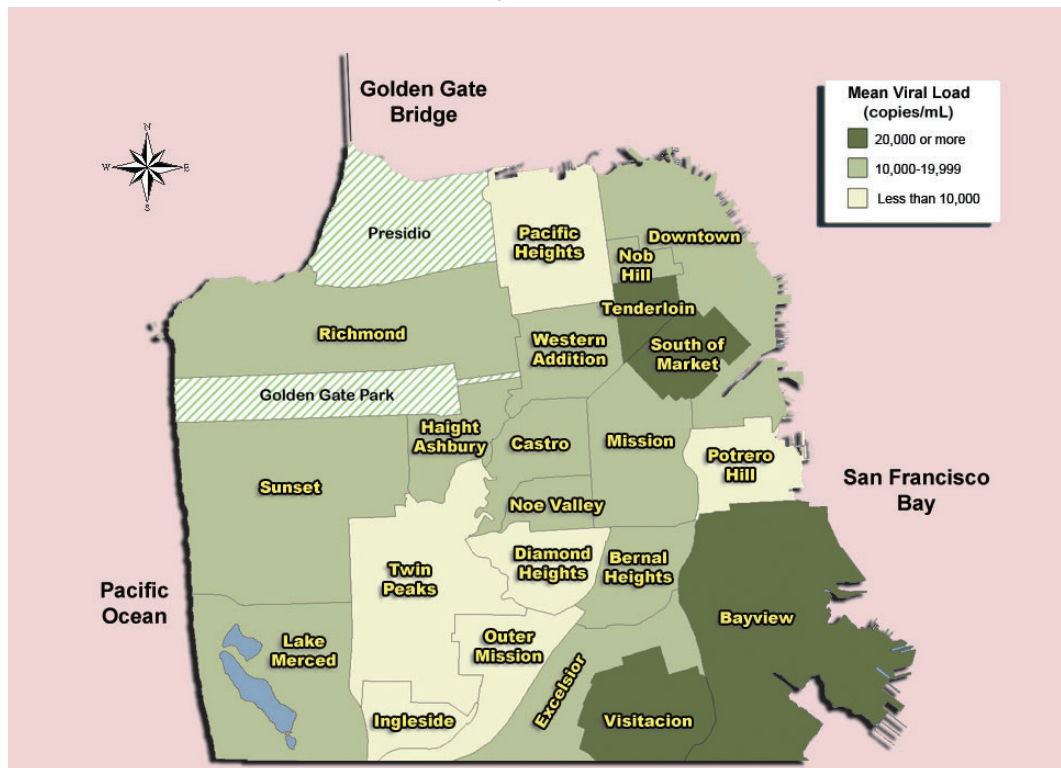
* Non-MSM IDU cases that were homeless at time of diagnosis (n=59) are not displayed in the map.

Map 18.4 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among MSM IDU, San Francisco

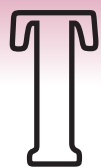


Community viral load is a new population-based biomarker of community-level viral burden or overall level of infectiousness. Community viral load is defined as the mean value of the most recent viral load divided by the number of HIV-infected individuals in the community. This novel biologic indicator may measure both the success of HIV prevention efforts and HIV treatment effectiveness in particular communities. Map 18.5 demonstrates geographic disparities in the distribution of community viral load. The four neighborhoods with the highest mean community viral load, Visitacion Valley, Bayview, South of Market, and the Tenderloin, have the lowest median household incomes in San Francisco (2000 census data). Homeless individuals have the highest community viral load. Disparities in community viral load track along known disparities in socioeconomic status, uptake of antiretroviral therapy, and engagement in health care, and are consistent with our understanding of the HIV epidemic in San Francisco.

Map 18.5* Distribution of community viral loads from 2005-2007, San Francisco



* Das-Douglas M, Chu, P.L., Santos, D.M., McFarland, W., Colfax, G. Geographic, Demographic, and Health Status-related Disparities in Mean Community Viral Load in San Francisco. 16th International Conference on Retroviruses and Opportunistic Infections. Montreal, Canada. 2009. Abstract# L-199.



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. AIDS case reporting has been found to be very complete (over 95%) while HIV case reporting is less complete due to an immature reporting system.

Publications of our HIV/AIDS data include only 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. Persons diagnosed in San Francisco who resided in other jurisdictions at time of their HIV/AIDS diagnosis were excluded from the reports.

AIDS Incidence 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 transgenders. Population denominators for the years 1999-2008 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990-1999 and 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, 2006. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2006, 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.

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. 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.



Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2008, San Francisco 3

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1236	1629	1762	2162
Deaths	0	8	32	111	273	534	807	877	1038	1275
Persons Living with AIDS	3	21	88	251	535	860	1289	2041	2765	3652

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2048	2285	2327	2074	1788	1564	1083	805	694	581
Deaths	1364	1505	1641	1599	1592	1483	987	422	400	355
Persons Living with AIDS	4336	5116	5802	6277	6473	6554	6650	7033	7327	7553

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	555	511	495	561	478	474	431	432	321
Deaths	348	322	322	301	305	313	285	207	160
Persons Living with AIDS	7760	7949	8122	8382	8555	8716	8862	9087	9248

Figure 2.1 Number of AIDS cases by race/ethnicity, 1999-2008, San Francisco . . . 8

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	341	321	298	293	288	266	280	244	251	174
African American	105	114	101	88	107	76	82	79	75	59
Latino	103	88	70	76	122	107	83	75	71	52
Other	32	32	42	38	44	29	29	33	35	36

Figure 2.2 Male annual AIDS incidence rates per 100,000 population by race/ethnicity, 1999-2008, San Francisco 9

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	178	161	150	147	145	130	140	121	123	82
African American	240	256	241	227	253	183	209	206	180	150
Latino	158	129	106	111	184	166	122	116	105	84
Other	22	23	29	25	32	20	18	22	25	22

Figure 2.3 Female annual AIDS incidence rates per 100,000 population by race/ethnicity, 1999-2008, San Francisco. 9

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	8	12	9	7	5	8	6	5	4	7
African American	75	72	69	44	78	56	47	47	57	44
Latina	14	17	8	10	10	14	16	8	10	6
Other	3	1	3	3	2	1	4	3	1	3

Figure 2.4 Number of male AIDS cases by exposure category, 1999-2008, San Francisco 10

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
MSM	356	329	305	300	352	307	291	280	272	197
IDU	48	53	42	43	58	26	40	26	30	14
MSM IDU	93	86	80	84	68	73	75	66	62	53
Other	18	12	25	15	19	17	17	18	24	19

Figure 2.5 Number of female AIDS cases by exposure category, 1999-2008, San Francisco 10

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
IDU	34	36	30	23	26	28	20	19	12	16
Heterosexual	12	14	10	9	13	7	14	8	16	13
Other	2	2	5	3	1	4	3	3	2	2

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2001-2006 24

Year	2001	2002	2003	2004	2005	2006
Accident	113	94	95	78	92	111
Heart disease	91	104	107	75	82	83
HIV/AIDS	162	145	140	127	114	79
Non-AIDS cancer	109	90	89	84	79	76
Mental disorder	50	50	47	59	58	49
Suicide	43	42	57	44	41	48
Homicide	26	19	27	34	34	35
Liver disease	37	24	26	22	28	22
Cerebrovascular	12	15	15	18	17	9
COPD	13	10	9	4	10	6

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2001-2006 25

Year	2001	2002	2003	2004	2005	2006
Non-AIDS cancer	69	69	78	81	80	72
Accident	37	22	27	30	31	40
Heart disease	27	31	30	23	28	22
HIV/AIDS	24	25	28	23	20	15
Mental disorder	7	12	16	8	23	13
Liver disease	9	13	4	7	5	12
Suicide	15	9	14	13	11	11
Cerebrovascular	2	11	13	5	14	10
Homicide	11	6	4	2	4	5
COPD	5	6	6	7	3	1

Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2006 26

	White	African American	Latino
HIV/AIDS	42	63	25
Heart Disease	34	173	15
Non-AIDS Cancer	29	94	15
Accident	43	189	40

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents by age group, 2006 26

	0-29	30-39	40-49	50-59	60+
HIV/AIDS	0	14	64	73	26
Heart Disease	4	5	44	172	1016
Accident	13	19	82	93	82
Non-AIDS Cancer	4	5	43	208	865
Mental Disorder	2	7	31	60	28
Suicide	12	10	27	37	28

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2003-2008, San Francisco 29

Male	2003	2004	2005	2006	2007	2008
Public	23%	24%	30%	26%	28%	40%
Private	43%	46%	43%	45%	45%	42%
None	33%	27%	24%	25%	23%	15%

Female	2003	2004	2005	2006	2007	2008
Public	55%	67%	51%	67%	73%	74%
Private	13%	8%	22%	17%	13%	3%
None	30%	23%	27%	17%	10%	19%

Transgender	2003	2004	2005	2006	2007	2008
Public	38%	63%	57%	82%	50%	43%
Private	4%	0%	0%	0%	7%	29%
None	54%	38%	43%	18%	43%	29%

Figure 8.1 AIDS cases, deaths, and prevalence among MSM, 1999-2008, San Francisco 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	467	436	399	401	444	396	380	357	347	257
Deaths	284	283	249	249	231	233	235	222	160	125
Persons Living with AIDS	6621	6774	6924	7076	7289	7452	7597	7732	7919	8051

Figure 8.2 AIDS cases among MSM by race/ethnicity, 1999-2008, San Francisco . . 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	298	283	262	260	256	243	243	221	222	151
African American	58	55	49	42	52	41	48	45	32	34
Latino	84	71	56	68	104	90	68	64	62	43
Other	27	27	32	31	32	22	21	27	31	29

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco 32

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
HIV Positive	42%	46%	51%	45%	53%	54%	46%	57%	67%	52%
HIV Negative	32%	36%	37%	32%	37%	33%	37%	44%	43%	45%

Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco 32

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
HIV Positive	25%	25%	31%	27%	28%	21%	9%	13%	18%	12%
HIV Negative	15%	17%	20%	16%	8%	4%	12%	10%	9%	12%

Figure 8.7 Syphilis among MSM, 1998-2008, San Francisco 35

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Primary	3	3	13	45	95	105	118	69	74	59	111
Secondary	2	19	27	71	193	214	205	147	143	124	191
Early Latent	4	9	12	36	151	158	179	161	151	136	154

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1999-2008, San Francisco 37

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	82	91	72	67	84	54	60	45	42	30
Deaths	64	52	60	58	60	60	63	50	39	26
Persons Living with AIDS	704	743	755	764	788	782	779	774	777	781

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1999-2008, San Francisco 37

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	37	33	29	25	29	17	29	18	17	16
African American	37	48	36	37	39	27	25	20	21	10
Latino	5	8	5	2	12	8	5	6	2	3
Other	3	2	2	3	4	2	1	1	2	1

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1999-2008, San Francisco 39

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	19	18	17	15	21	15	19	19	32	20
Deaths	4	4	8	9	6	5	6	6	6	4
Persons Living with AIDS	131	145	154	160	175	185	198	211	237	253

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1999-2008, San Francisco 39

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	3	3	2	4	3	4	3	1	2	3
African American	8	9	10	6	13	3	5	9	21	9
Latino	7	5	2	2	3	5	7	5	7	3
Other	1	1	3	3	2	3	4	4	2	5

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1999-2008, San Francisco 42

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	48	52	45	36	40	39	37	30	30	31
Deaths	34	25	26	29	28	23	28	32	16	21
Persons Living with AIDS	402	429	448	455	467	483	492	490	504	514

Figure 11.2 Female AIDS cases by race/ethnicity, 1999-2008, San Francisco. 42

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	13	19	15	13	8	13	10	8	7	11
African American	24	23	22	14	24	17	14	14	17	13
Latina	7	9	4	5	5	7	8	4	5	3
Other	4	1	4	4	3	2	5	4	1	4

Figure 13.1 Infants born to HIV-infected mothers by year of birth and infant HIV status, 1994-2008, San Francisco 47

Health Status	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HIV Infected	5	5	2	0	3	1	0	0	2	1
Seroreverted	12	14	9	11	9	9	12	16	9	16
Status Unknown	2	1	0	0	1	0	0	0	0	0

Health Status	2004	2005	2006	2007	2008
HIV Infected	1	0	0	0	0
Seroreverted	6	7	8	5	8
Status Unknown	0	0	0	0	0

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1999-2008, San Francisco 48

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	18	23	14	18	24	16	14	11	14	7
Deaths	6	12	15	9	9	12	11	12	9	11
Persons Living with AIDS	152	163	162	171	186	190	193	192	197	193



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