San Francisco
Department of Public Health

HIV/AIDS Epidemiology Annual Report 2007

HIV Epidemiology Section

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2007

SAN FRANCISCO

Department of Public Health

HIV Epidemiology Section

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Executive Summary

Homelessness among persons with HIV/AIDS has been an ongoing problem in San Francisco. Housing status at time of diagnosis has been collected on all persons reported with AIDS since 1990 and among persons reported with HIV since 2002, the year that HIV case reporting took effect. Because HIV reporting is relatively new, reliable trends in homelessness can only be examined for persons reported with AIDS. The proportion of homeless persons with AIDS has been relatively stable at approximately 10% per year.

Homeless persons suffer from high rates of substance abuse, mental illness, tuberculosis, infectious hepatitis, and insufficient health care. Among HIV-infected persons, unstable housing has been associated with poor utilization of health care services including greater reliance on emergency departments, more frequent hospitalizations, and fewer ambulatory care visits. Use of antiretroviral therapy and prophylaxis against opportunistic illnesses is less frequent among the homeless. Among homeless persons, prescribed antiretroviral therapy and adherence to these medications is suboptimal.

Although there have been a few studies of the effect that homelessness has on AIDS survival, none have examined the effect of homelessness on AIDS survival in a representative sample of persons with AIDS during the time that highly effective antiretroviral therapy has been widely available. We analyzed AIDS surveillance data and found that survival was significantly worse for homeless persons. After taking into account those factors that are known to affect AIDS survival (such as age and use of antiretroviral therapy), homelessness increased the risk of death by more than 20%. Other data for homeless persons with HIV/AIDS are summarized in Section 15 of this annual report.

Our findings of worse survival for homeless persons with AIDS add yet another health disadvantage to homeless persons. In response to the needs of chronically and seriously ill homeless persons, the San Francisco Department of Public Health (SFDPH) offers supportive housing services through the Direct Access to Housing (DAH) program. The DAH takes people directly from shelters, streets or institutions and places them in permanent supportive housing. Most of the housing sites require rent payment by residents of 30% to 50% of their income (on a sliding scale). All DAH sites have dedicated case managers. The medical services provided by the DAH sites range from having an on-site full-time nurse and part-time mid-level clinician (e.g. nurse practitioner) to having the case manager facilitate care through off-site clinicians at designated health care facilities.

Providing such services to homeless persons is an important intervention for persons with AIDS. Providing housing to persons with AIDS is likely to result in more appropriate use of health care services, better adherence to medications, and reduction in HIV risk behaviors. Thus, these housing services benefit individuals beyond those who are homeless. Provision of supportive housing to persons with serious illnesses is an important function of the public health department.

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). From the beginning of the epidemic to December 31, 2007, a cumulative total of 27,592 San Francisco residents were diagnosed with AIDS (Table 1.1). This comprises 19% of California AIDS cases and three percent of cases reported nationally. As of December 2006, San Francisco was ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide, while San Francisco's AIDS incidence rate in 2006 ranked 12th. 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 to occur among 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 = 27,592)		California (N = 147,821)	United States (N = 992,865)
	Number	%	%	%
Gender				
Male	26,094	95%	91%	80%
Female	1,122	4%	9%	20%
Transgender*	376	1%	<1%	--
Race/Ethnicity				
White	19,811	72%	56%	39%
African American	3,518	13%	18%	40%
Latino	3,213	12%	23%	19%
Asian/Pacific Islander	876	3%	2%	<1%
Native American	146	<1%	<1%	<1%
Other/Unknown	28	<1%	<1%	<1%
Exposure Category				
MSM	20,567	75%	67%	44%
IDU	2,113	8%	10%	23%
MSM IDU	4,087	15%	9%	7%
Heterosexual	401	1%	6%	13%
Transfusion/Hemophilia	167	<1%	2%	2%
Other/Unidentified	257	<1%	6%	11%

San Francisco data are reported through March 14, 2008 for cases diagnosed through December 2007; California data are reported through December 2007. U.S. data are reported through December 2006 and may be found in the CDC HIV/AIDS Surveillance Report, 2006. Vol. 18.

* 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 race/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 race/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, 41% acquired their infection through heterosexual contact, 33% through injection drug use, and 17% through transfusion of blood or blood products.

Injection drug use is prevalent among male to female transgender AIDS cases. Fifty-eight percent of whites, 67% of African Americans, and 45% of Latinos were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2007, San Francisco

	White		African American		Latino		Asian/Pacific Islander		Native American	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male										
MSM	15,853	(82)	1,506	(52)	2,309	(78)	651	(84)	67	(52)
IDU	509	(3)	679	(24)	164	(6)	24	(3)	10	(8)
MSM IDU	2,829	(15)	576	(20)	369	(13)	58	(7)	48	(37)
Heterosexual	31	(<1)	48	(2)	26	(<1)	9	(1)	2	(2)
Transfusion/ Hemophilia	51	(<1)	17	(<1)	22	(<1)	14	(2)	0	(0)
Other/Unidentified	60	(<1)	54	(2)	59	(2)	22	(3)	2	(2)
Male Subtotal	**19,333**		**2,880**		**2,949**		**778**		**129**	
Female										
IDU	241	(65)	372	(72)	71	(47)	22	(33)	11	(85)
Heterosexual	82	(22)	110	(21)	60	(39)	27	(41)	2	(15)
Transfusion/ Hemophilia	29	(8)	13	(3)	10	(7)	11	(17)	0	(0)
Other/Unidentified	17	(5)	24	(5)	11	(7)	6	(9)	0	(0)
Female Subtotal	**369**		**519**		**152**		**66**		**13**	
Transgender* (Male to Female Only)										
IDU	63	(58)	80	(67)	50	(45)	11	(39)	#	
Non IDU	45	(42)	39	(33)	61	(55)	21	(61)	#	
Transgender Subtotal	**108**		**119**		**111**		**32**		#	

* 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 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. The number of AIDS deaths per year has been fairly level between 2001 and 2005. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2006 and 2007 may be revised upward in future reports. By the end of 2007, there were 8,980 San Francisco residents living with AIDS.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2007, San Francisco

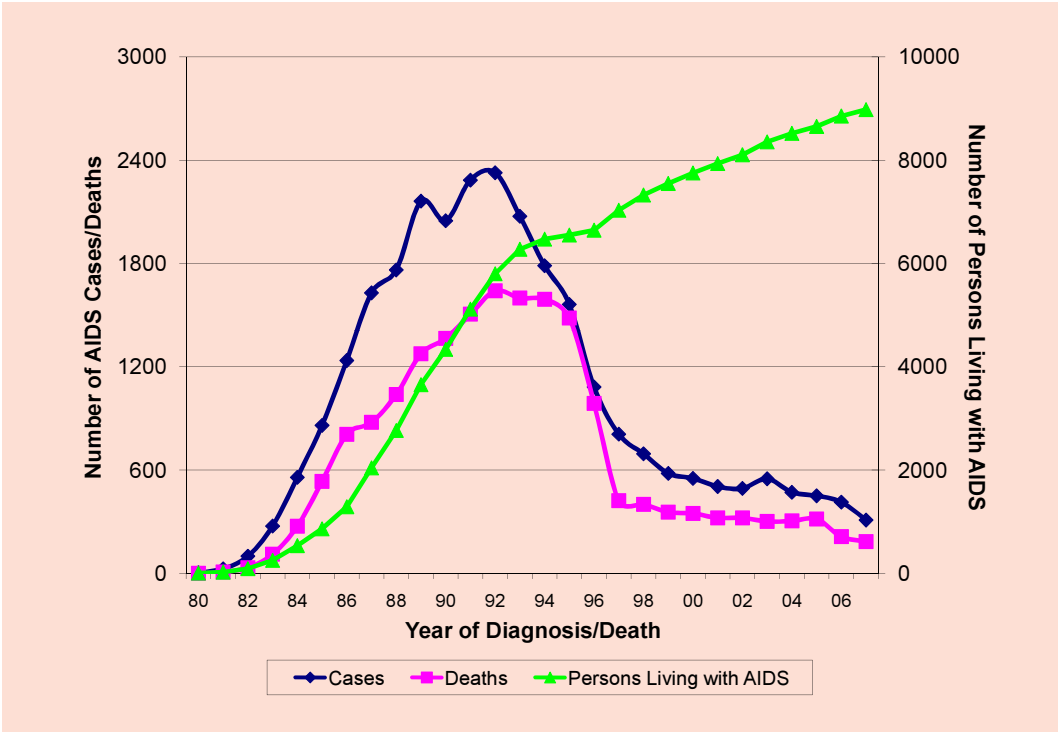


Table 1.3 shows the number and characteristics of cases whose initial HIV diagnosis occurred between 2003 and 2007. Initial date of HIV diagnosis was determined based on the earliest date of HIV antibody test, viral load or CD4 test, antiretroviral treatment start date, or patient self report of a positive HIV test. The number includes both code-based and name-based HIV cases reported to the San Francisco Department of Public Health, and does not include HIV-infected persons who are not aware of their infection or cases not yet reported. In addition, the data include persons who were initially diagnosed with HIV and had a later diagnosis of AIDS and those diagnosed with HIV and AIDS at the same time.

The number of persons newly diagnosed with HIV declined between 2003 and 2007. However, the lower numbers in recent years may also reflect delays in reporting of persons recently diagnosed with HIV. Overall, the characteristics of persons newly diagnosed with HIV remained relatively stable with the majority of cases being male, white, aged 25-49 years, and MSM.

Table 1.3 Characteristics of persons newly diagnosed with HIV between 2003 and 2007, San Francisco

	Year of Initial HIV Diagnosis				
	2003	2004	2005	2006	2007
Total number*	839	803	651	500	467
Gender					
Male	89%	91%	89%	92%	89%
Female	8%	7%	9%	6%	8%
Transgender	3%	2%	2%	2%	3%
Race/Ethnicity					
White	52%	56%	52%	58%	54%
African American	18%	14%	18%	14%	15%
Latino	18%	18%	19%	19%	20%
Asian/Pacific Islander	7%	7%	6%	7%	7%
Native American	1%	1%	1%	1%	0%
Other/Unknown	3%	3%	5%	1%	3%
Age at HIV Diagnosis (Years)					
0 - 12	<1%	<1%	<1%	0%	0%
13 - 24	8%	9%	9%	10%	11%
25 - 49	81%	79%	81%	75%	78%
50+	11%	12%	10%	15%	11%
Exposure Category					
MSM	63%	71%	66%	71%	71%
IDU	11%	10%	8%	7%	9%
MSM IDU	12%	10%	11%	10%	7%
Heterosexual	3%	3%	6%	4%	7%
Other/Unidentified	10%	6%	9%	7%	5%

* Includes persons with a diagnosis of HIV (non-AIDS), an initial diagnosis of HIV (non-AIDS) and a later diagnosis of AIDS, or concurrent diagnosis of HIV and AIDS.

The characteristics of living HIV/AIDS cases in San Francisco differ considerably when compared to statewide and nationwide data. Similar to the demographic distribution of San Francisco AIDS cases, persons living with HIV in San Francisco are more likely to be male, white, and MSM (Table 1.4). There are a larger proportion of persons living with HIV/AIDS in California and in the United States 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 2007

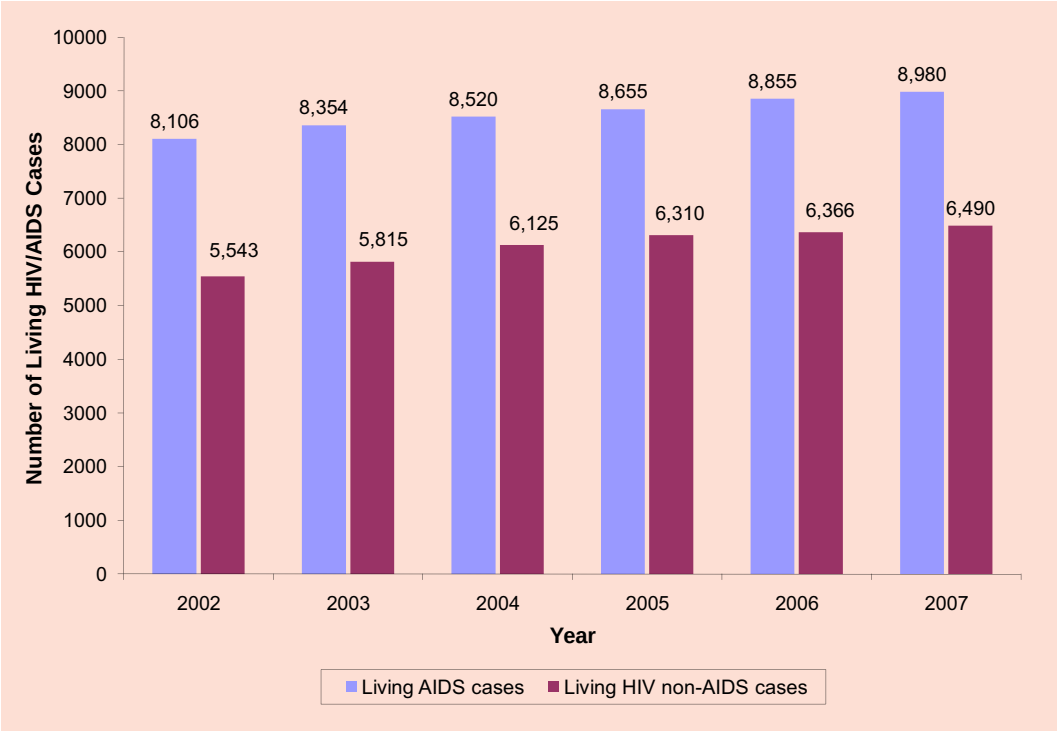
	San Francisco		California		United States[3]
	Living HIV Non-AIDS Case[1]	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases[2]	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	**6,490**	**15,470**	**23,760**	**87,049**	**491,727**
Gender					
Male	91%	92%	85%	87%	72%
Female	6%	6%	14%	12%	27%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	63%	64%	49%	48%	34%
African American	14%	14%	18%	19%	47%
Latino	14%	15%	28%	29%	17%
Asian/Pacific Islander & Native American	5%	6%	4%	4%	1%
Other/Unknown	3%	1%	1%	<1%	1%
Exposure Category					
MSM	73%	73%	67%	65%	44%
IDU	7%	8%	7%	10%	19%
MSM IDU	10%	12%	7%	8%	5%
Heterosexual	3%	3%	10%	9%	29%
Other/Unidentified	7%	4%	9%	8%	3%

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 2006 and are estimates by the CDC that reflect adjustments in reported case counts.

The number of persons living with HIV/AIDS who were reported to the San Francisco Department of Public Health increased from 13,649 in 2002 to 15,470 in 2007 (Figure 1.2). The number includes AIDS cases, and both code-based and name-based HIV cases. The "2006 HIV Consensus Estimates" projected 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 good proportion of persons with HIV are not aware of their infection or not receiving routine medical care. In addition, reporting of HIV cases is incomplete, especially for those diagnosed in earlier years. Also, surveillance 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.

Figure 1.2 HIV/AIDS prevalence, 2002-2007, San Francisco

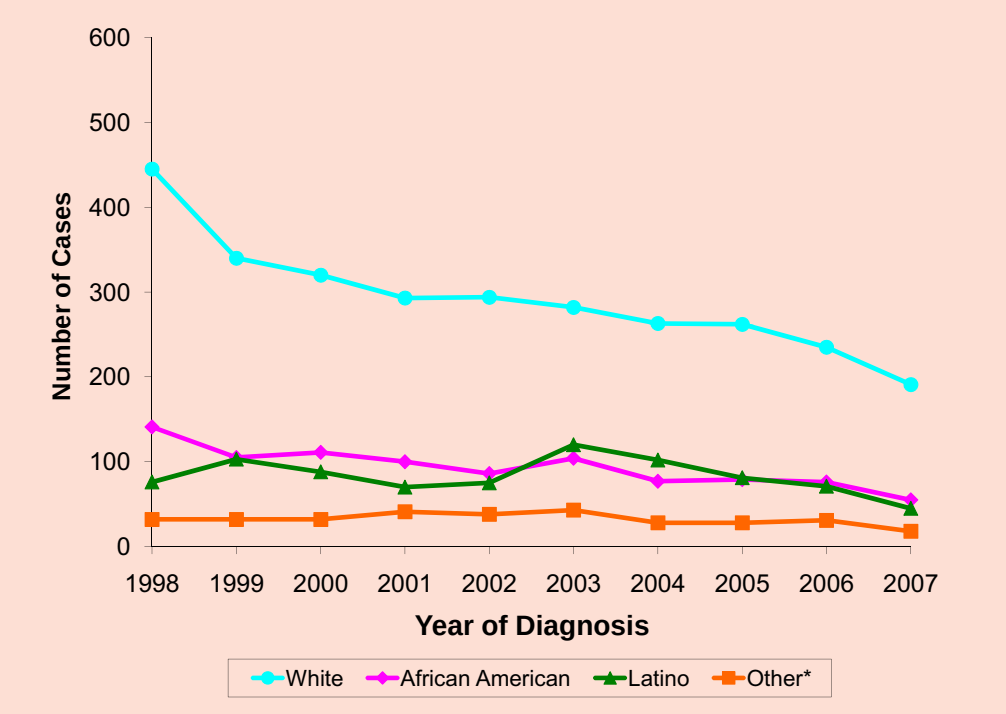


2 Trends in AIDS Incidence

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 has also declined since 1998, but has been level between 2004 and 2006. The trend for Latino AIDS cases shows periods of slight increase until 2003 and decline thereafter. The proportion of Latino AIDS cases decreased from 22% in 2003 to 15% in 2007. AIDS case counts for recent years are subject to delays in reporting, particularly for 2006 and 2007.

Figure 2.1 Number of AIDS cases by race/ethnicity, 1998-2007, San Francisco

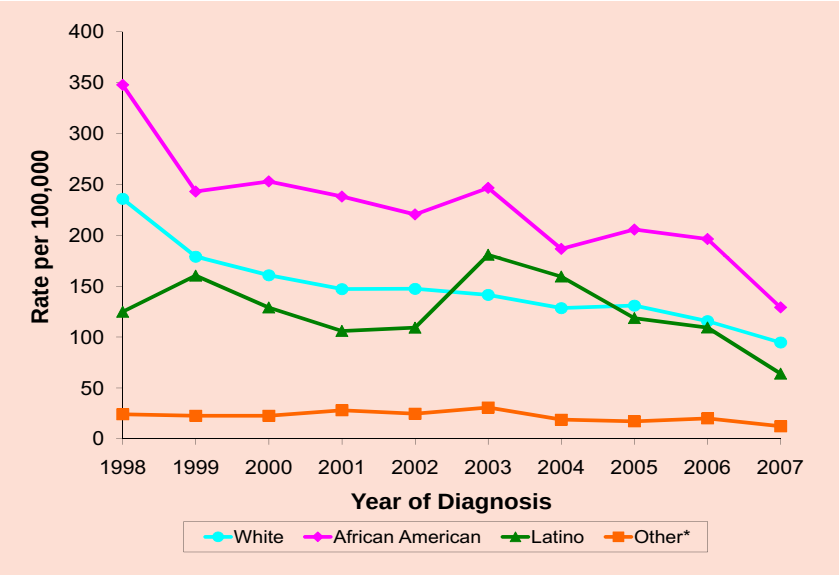


* Cases in the "Other" race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Since 1998, the AIDS incidence rates among African American men have been higher than for men of all other race/ethnic groups (Figure 2.2). AIDS incidence rates for African Americans declined from 1998 to 2004, and from 2004 to 2006 they have been level. The AIDS incidence rate for Latino men increased in 2003 to 181 per 100,000 population and has declined since then. In 2007, the incidence rate of AIDS per 100,000 population was 129 among African American men, 95 for white men, and 64 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2006 and 2007.

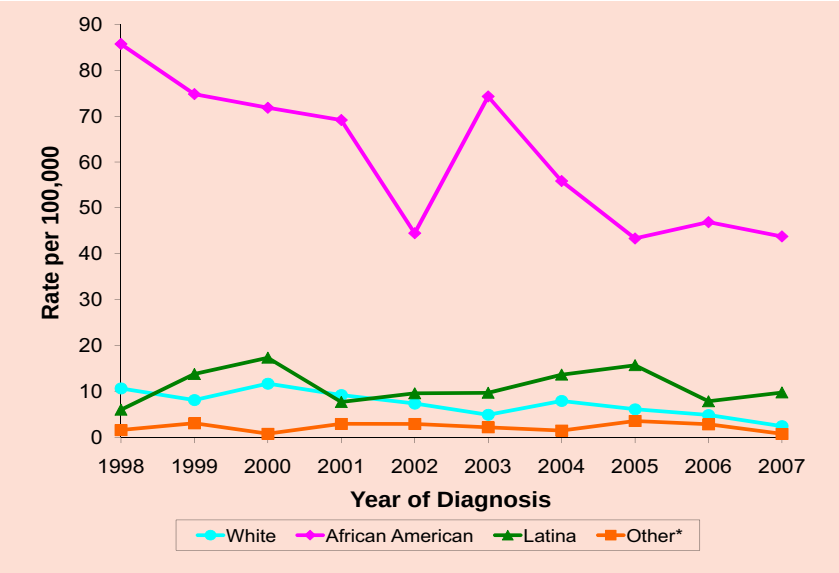
AIDS incidence rates among women are much lower than that among men. Throughout the epidemic, African American women have been disproportionately affected by AIDS compared to women of other race/ethnic groups. Although the AIDS incidence rates for African American women have declined since 1998, they have been level in recent years (Figure 2.3). In 2007, the incidence rate of AIDS per 100,000 population was 44 for African American women, 10 for Latina women, 2 for white women, and 1 for women of other race/ethnic groups.

Figure 2.2 Male annual AIDS incidence rates# per 100,000 population by race/ethnicity, 1998-2007, San Francisco



See Technical Notes "AIDS Incidence Rates."
* Cases in the "Other" race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Figure 2.3 Female annual AIDS incidence rates# per 100,000 population by race/ethnicity, 1998-2007, San Francisco

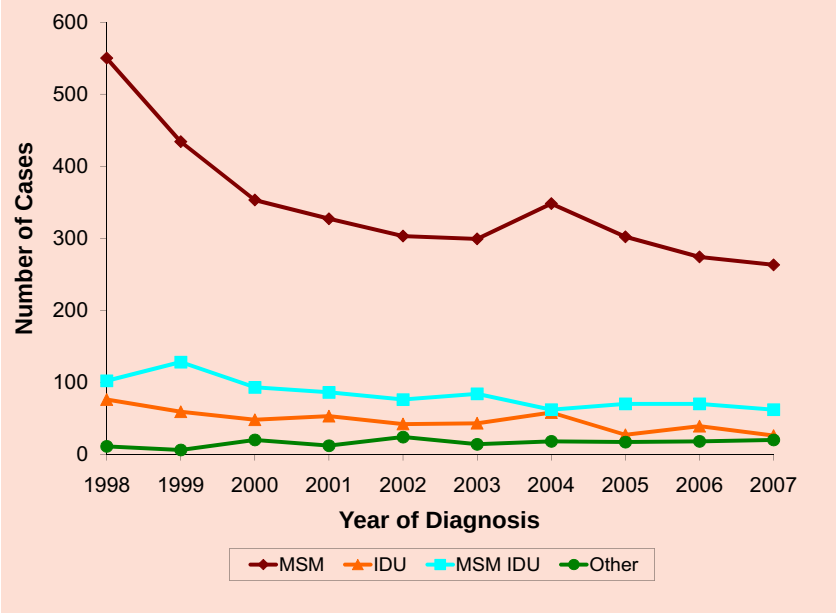


See Technical Notes "AIDS Incidence Rates."
* Cases in the "Other" race/ethnicity category include 83% Asian/Pacific Islanders and 10% Native Americans.

Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 1998 and 2007 (Figure 2.4). In 2007, 70% of male AIDS cases were MSM, 15% were MSM IDU, and 9% were heterosexual IDU.

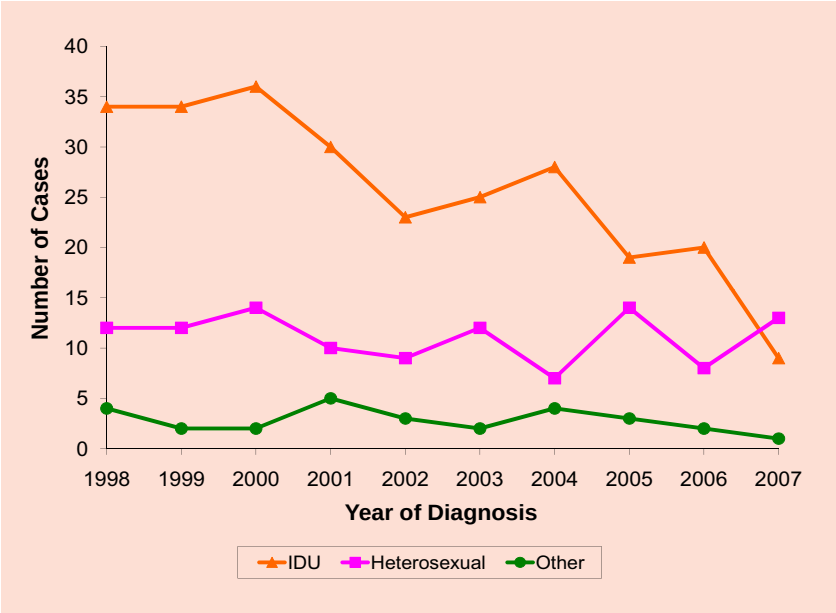
Figure 2.4 Number of male AIDS cases* by exposure category, 1998-2007, San Francisco



* Excludes male-to-female transgender AIDS cases.

Injection drug use is the predominant exposure category of female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 1998, while female AIDS cases due to heterosexual contact and other exposure categories have remained stable. In 2007, 57% of female AIDS cases were attributed to heterosexual contact and 39% were due to injection drug use. Nationwide, heterosexual contact was the predominant exposure category for female AIDS cases in 2006.

Figure 2.5 Number of female AIDS cases* by exposure category, 1998-2007, 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 2004-2007, there was an increase in the proportion of women diagnosed with AIDS in the 50+ years age group, as well as the proportion of men in the over 40 years age groups. This likely reflects the use of effective drug therapies which extended the time between HIV infection and the time AIDS developed.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1997-2007, San Francisco

	1997-1999		2000-2003		2004-2007		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	2	(<1)	5	(<1)	2	(<1)	46	(<1)
20 - 29	181	(10)	153	(8)	126	(9)	2,919	(11)
30 - 39	802	(43)	738	(40)	478	(33)	11,761	(45)
40 - 49	631	(34)	633	(34)	547	(37)	8,239	(32)
50+	264	(14)	320	(17)	311	(21)	3,129	(12)
Male Subtotal	**1,880**	**(100)**	**1,849**	**(100)**	**1,464**	**(100)**	**26,094**	**(100)**
Female (Age in Years)								
0 - 19	2	(1)	3	(2)	0	(0)	23	(2)
20 - 29	17	(12)	25	(15)	14	(11)	158	(14)
30 - 39	59	(40)	54	(32)	35	(27)	433	(39)
40 - 49	53	(36)	63	(37)	44	(34)	340	(30)
50+	16	(11)	26	(15)	35	(27)	168	(15)
Female Subtotal	**147**	**(100)**	**171**	**(100)**	**128**	**(100)**	**1,122**	**(100)**
Transgender (Age in Years)								
13 - 29	16	(29)	10	(13)	9	(18)	92	(25)
30 - 39	21	(38)	34	(45)	19	(38)	166	(44)
40+	18	(33)	32	(42)	22	(44)	116	(31)
Transgender Subtotal	**55**	**(100)**	**76**	**(100)**	**50**	**(100)**	**374**	**(100)**

3 Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS increased due to ongoing incidence of HIV combined with 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, 2007, 15,470 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 2003 and 2007; most 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 27% to 37% between 2003 and 2007. This increase may indicate that use of antiretroviral treatments is allowing persons with HIV/AIDS to live longer.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2003-2007#, San Francisco

	2003		2004		2005		2006		2007	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender										
Male	13,018	(92)	13,457	(92)	13,734	(92)	13,996	(92)	14,220	(92)
Female	834	(6)	866	(6)	897	(6)	901	(6)	918	(6)
Transgender	317	(2)	322	(2)	325	(2)	324	(2)	332	(2)
Race/Ethnicity										
White	9,301	(66)	9,549	(65)	9,688	(65)	9,829	(65)	9,946	(64)
African American	2,081	(15)	2,121	(14)	2,145	(14)	2,166	(14)	2,190	(14)
Latino	1,959	(14)	2,067	(14)	2,155	(14)	2,225	(15)	2,295	(15)
Asian/Pacific Islander	597	(4)	648	(4)	672	(4)	695	(5)	724	(5)
Native American	93	(<1)	98	(1)	104	(1)	107	(<1)	105	(1)
Other/Unknown	138	(<1)	162	(1)	192	(1)	199	(1)	210	(1)
Age in Years (at end of each year)										
0 - 19	45	(<1)	43	(<1)	36	(<1)	30	(<1)	31	(<1)
20 - 29	580	(4)	628	(4)	643	(4)	619	(4)	621	(4)
30 - 39	3,815	(27)	3,548	(24)	3,242	(22)	2,992	(20)	2,763	(18)
40 - 49	5,857	(41)	6,084	(42)	6,255	(42)	6,303	(41)	6,302	(41)
50+	3,872	(27)	4,342	(30)	4,780	(32)	5,277	(35)	5,753	(37)
Exposure Category										
MSM	10,177	(72)	10,577	(72)	10,829	(72)	11,060	(73)	11,279	(73)
IDU	1,288	(9)	1,294	(9)	1,276	(9)	1,269	(8)	1,262	(8)
MSM IDU	1,949	(14)	1,953	(13)	1,948	(13)	1,942	(13)	1,928	(12)
Heterosexual	309	(2)	331	(2)	364	(2)	382	(3)	413	(3)
Transfusion/Hemophilia	38	(<1)	37	(<1)	37	(<1)	37	(<1)	37	(<1)
Other/Unknown	408	(3)	453	(3)	502	(3)	531	(3)	551	(4)
Total	**14,169**		**14,645**		**14,956**		**15,221**		**15,470**	

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

As of December 31, 2007, a total of 8,980 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transgender. Of males, 68% were white, and MSM made up the majority of living male AIDS cases within all race/ethnic groups. Persons age 50 and greater made up a larger proportion of white and African American men than men of other race/ethnic groups.

Among women living with AIDS, African American was the largest race/ethnic group (45%) followed by white (30%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases was ages 25-49 years.

Table 3.2 Persons living with AIDS by gender, exposure category, age and race/ethnicity, December 2007, San Francisco

	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number*
Male									
Exposure Category									
MSM	4,602	(82)	499	(51)	1,006	(81)	325	(79)	6,441
IDU	188	(3)	224	(23)	48	(4)	18	(4)	480
MSM IDU	808	(14)	187	(19)	137	(11)	43	(11)	1,179
Heterosexual	14	(<1)	28	(3)	19	(2)	6	(1)	68
Other	5	(<1)	5	(<1)	4	(<1)	6	(1)	21
No reported risk	29	(<1)	26	(3)	27	(2)	11	(3)	93
Age in Years (at end of 2007)									
<13	0	(0)	0	(0)	1	(<1)	0	(0)	2
13 - 24	4	(<1)	4	(<1)	9	(<1)	5	(1)	22
25 - 49	2,890	(51)	499	(51)	866	(70)	262	(64)	4,530
50+	2,752	(49)	466	(48)	365	(29)	142	(35)	3,728
Male Subtotal	**5,646**		**969**		**1,241**		**409**		**8,282**
Female									
Exposure Category									
IDU	100	(66)	156	(69)	34	(40)	11	(27)	302
Heterosexual	41	(27)	57	(25)	39	(46)	22	(54)	159
Other	5	(3)	4	(2)	6	(7)	4	(10)	19
No reported risk	6	(4)	8	(4)	5	(6)	4	(10)	24
Age in Years (at end of 2007)									
<13	0	(0)	0	(0)	1	(<1)	0	(0)	1
13 - 24	0	(0)	4	(2)	3	(4)	1	(2)	8
25 - 49	96	(63)	120	(53)	51	(61)	29	(71)	298
50+	56	(37)	101	(45)	29	(35)	11	(27)	197
Female Subtotal	**152**		**225**		**84**		**41**		**504**
Transgender	**48**		**61**		**61**		**24**		**194**
Total	**5,846**		**1,255**		**1,386**		**474**		**8,980**

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

As of December 31, 2007, 6,490 living HIV non-AIDS cases had been reported in San Francisco (Table 3.3). Demographics and risk categories 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 was white and MSM. The majority of living female HIV non-AIDS cases was African American and injection drug users. The most frequent age category for living HIV non-AIDS cases was 25-49 years old. By race/ethnic group, African Americans had the highest proportion of living HIV non-AIDS cases in the age 50+ group.

There are larger proportions of living HIV non-AIDS cases reported without risk information compared to living AIDS cases. This is 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 2007, San Francisco

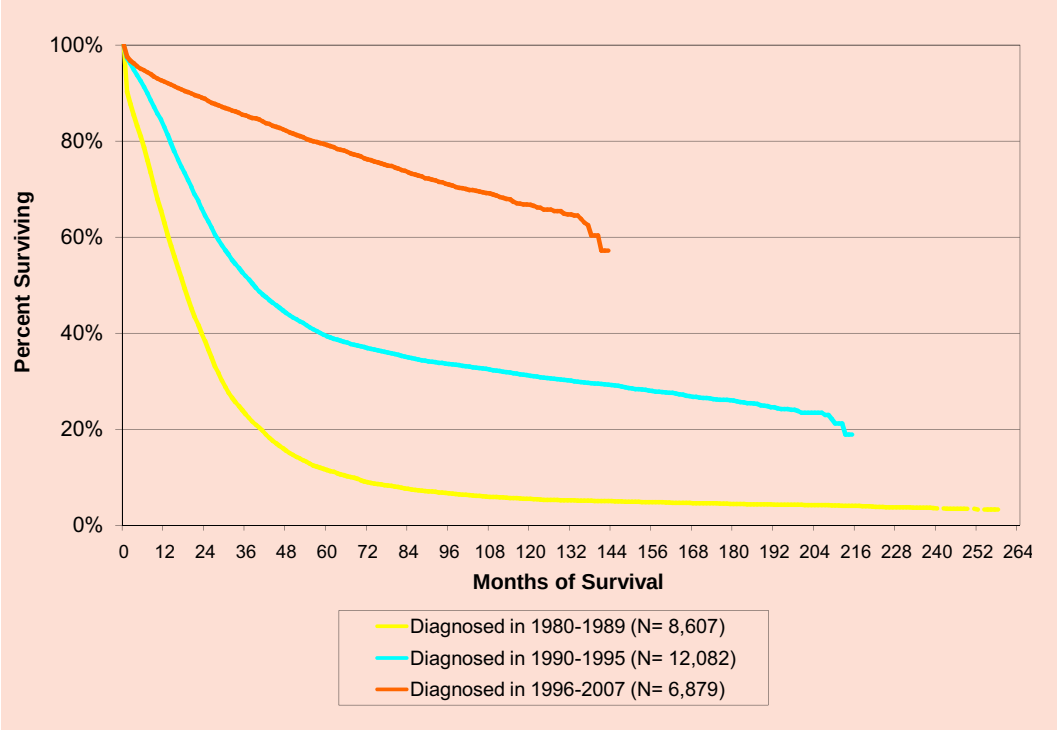
	White		African American		Latino		Asian/Pacific Islander & Native American		Total
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number*
Male									
Exposure Category									
MSM	3,264	(83)	381	(55)	696	(84)	253	(83)	4,670
IDU	134	(3)	118	(17)	21	(3)	12	(4)	287
MSM IDU	417	(11)	97	(14)	52	(6)	20	(7)	593
Heterosexual	9	(<1)	26	(4)	15	(2)	4	(1)	57
Other	5	(<1)	2	(<1)	4	(<1)	1	(<1)	12
No reported risk	116	(3)	74	(11)	36	(4)	13	(4)	319
Age in Years (as of 12/31/2007)									
<13	0	(0)	0	(0)	0	(0)	0	(0)	0
13 - 24	45	(1)	21	(3)	30	(4)	8	(3)	107
25 - 49	2,710	(69)	416	(60)	674	(82)	264	(87)	4,188
50+	1,190	(30)	261	(37)	120	(15)	31	(10)	1,643
Male Subtotal	**3,945**		**698**		**824**		**303**		**5,938**
Female									
Exposure Category									
IDU	68	(55)	82	(46)	20	(35)	15	(43)	190
Heterosexual	27	(22)	57	(32)	20	(35)	16	(46)	126
Other	3	(2)	4	(2)	3	(5)	0	(0)	12
No reported risk	26	(21)	35	(20)	14	(25)	4	(11)	86
Age in Years (as of 12/31/2007)									
<13	0	(0)	1	(1)	4	(7)	0	(0)	6
13 - 24	5	(4)	6	(3)	4	(7)	0	(0)	17
25 - 49	91	(73)	101	(57)	39	(68)	26	(74)	270
50+	28	(23)	70	(39)	10	(18)	9	(26)	121
Female Subtotal	**124**		**178**		**57**		**35**		**414**
Transgender	**31**		**59**		**28**		**17**		**138**
Total	**4,100**		**935**		**909**		**355**		**6,490**

* 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 2007, 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 39 months. Approximately 57% of persons diagnosed with AIDS in 1996 and 2007 are still alive as of December 31, 2007. Improved survival among persons diagnosed with AIDS after 1995 are attributed to more effective antiretroviral therapies.

Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2007, San Francisco

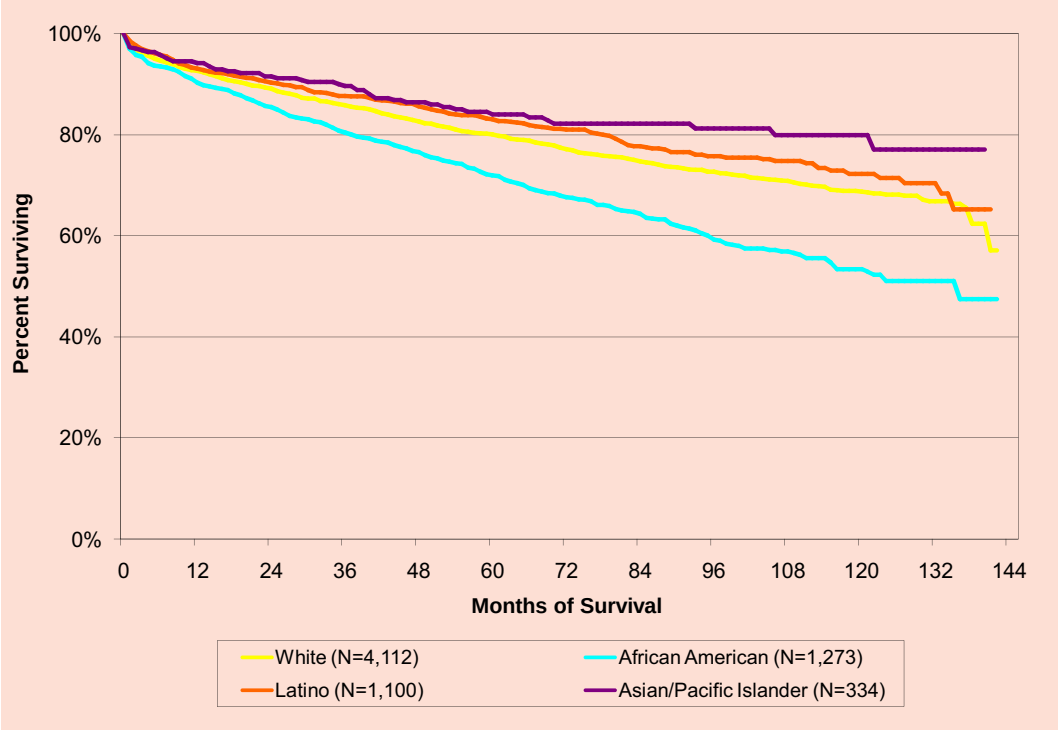


* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other race/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2007, the percent of African Americans surviving 60 months (5 years) after AIDS was 72%, compared to 80% for whites, 83% for Latinos, and 84% for Asians/Pacific Islanders. The percent surviving 84 months (seven years) after AIDS diagnosis was 64% for African Americans, 75% for whites, 78% for Latinos, and 82% for Asians/Pacific Islanders.

These survival differences may be due to lower proportions of African American AIDS cases on highly active antiretroviral therapies. Other reasons for these differences are not entirely understood.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by race/ethnicity, San Francisco

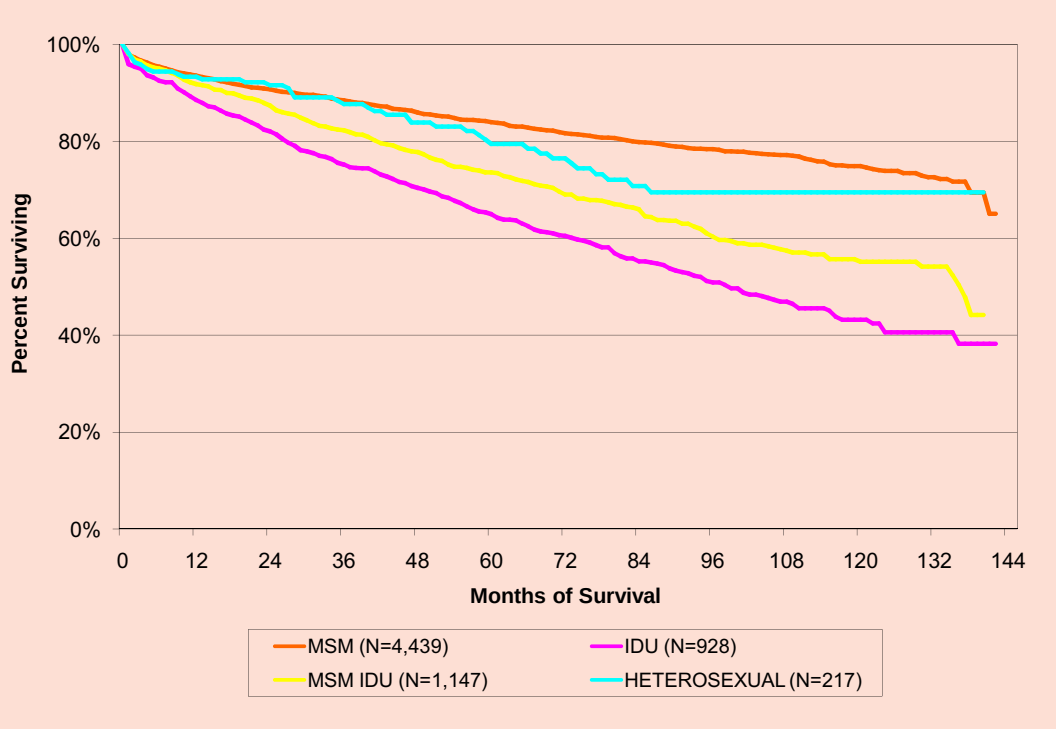


* See Technical Notes "AIDS Survival."

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 2007, the 5-year (60 months) survival was 84% for MSM, 79% for heterosexuals, 74% for MSM IDU, and 65% for heterosexual IDU (Figure 4.3).

Worse survival among IDU may reflect their lower use of antiretroviral therapies as well as higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

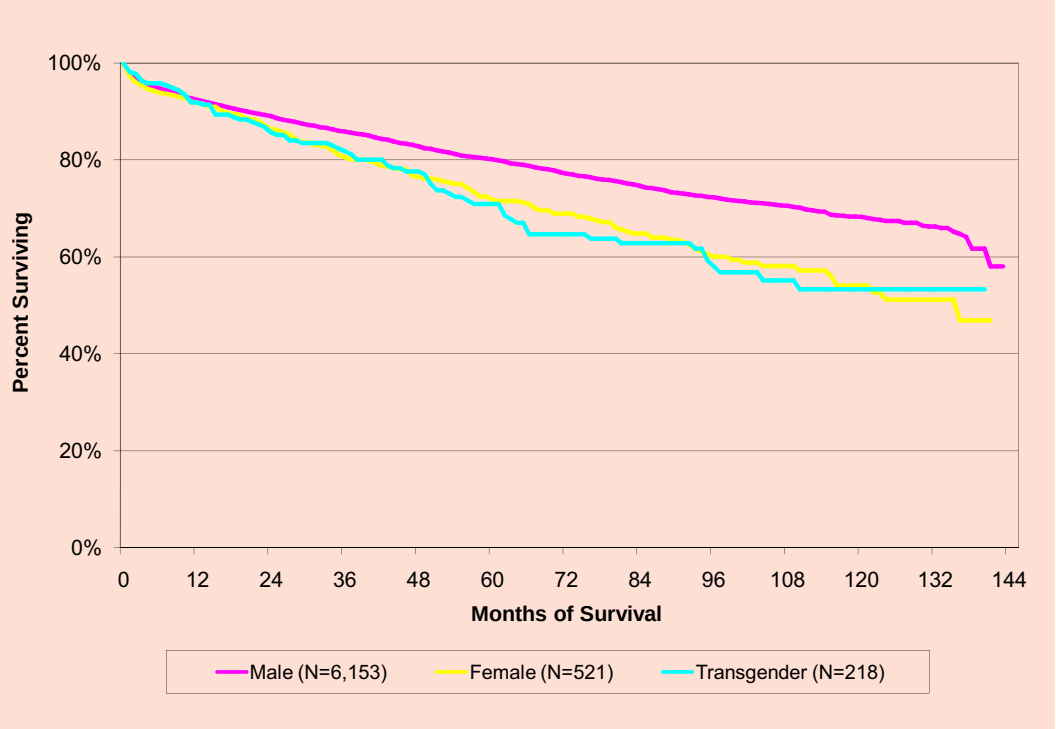
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by exposure category, San Francisco



* 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 5-year (60 months) survival was 80% for men, 72% for women and 71% for transgender persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies among women and transgender AIDS cases.

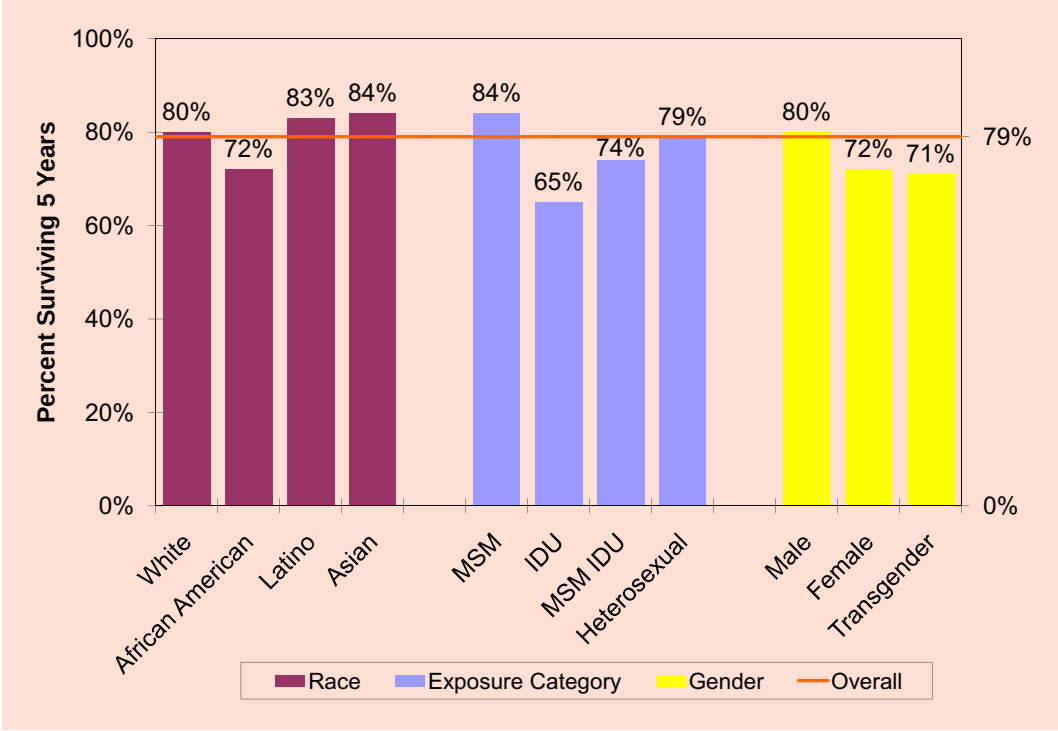
Figure 4.4 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by gender, San Francisco



* See Technical Notes "AIDS Survival."

The overall 5-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2007 is 79% (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 2007 by race/ethnicity, exposure category, and gender, San Francisco



5 Trends in HIV/AIDS Mortality

AIDS surveillance data

As of December 31, 2007, a total of 18,612 deaths 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 2004 and 2005. The proportion of African American AIDS deaths increased between 2004 and 2005. 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.

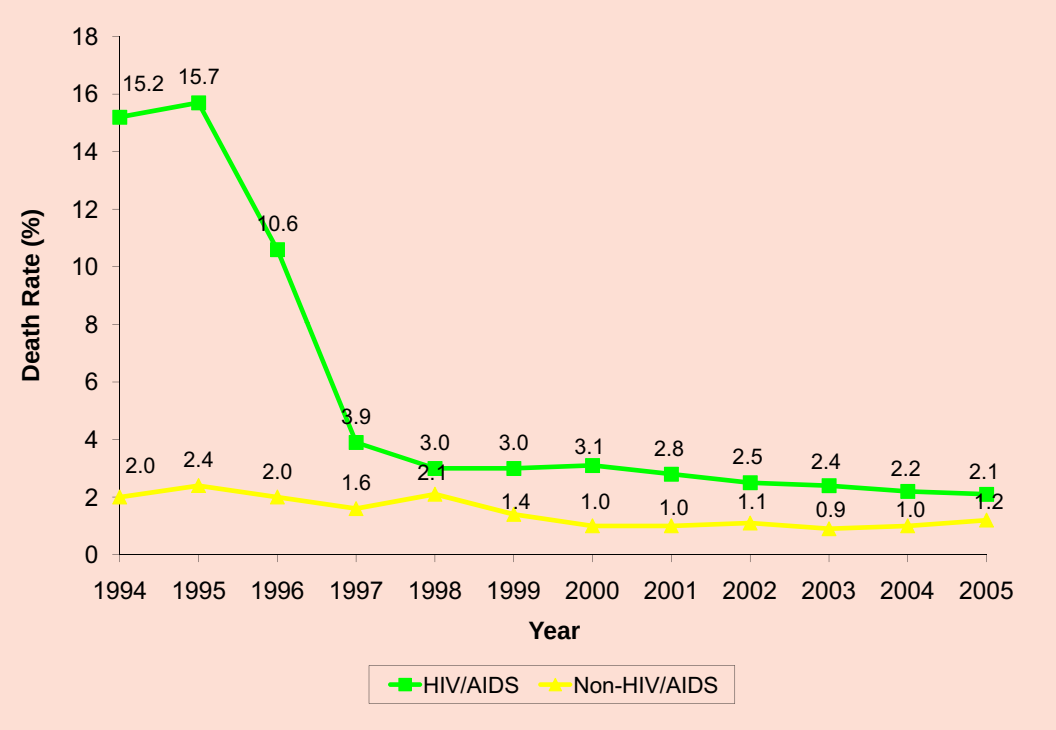
Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2004-2007, San Francisco

	Year of Death								Cumulative Totals as of 12/31/2007
	2004		2005		2006*		2007*		
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	
Gender									
Male	269	(88)	277	(88)	179	(84)	161	(88)	17,812
Female	23	(8)	27	(9)	25	(12)	16	(9)	618
Transgender	12	(4)	11	(3)	9	(4)	7	(4)	182
Race/Ethnicity									
White	184	(61)	183	(58)	135	(63)	115	(63)	13,965
African American	64	(21)	88	(28)	44	(21)	37	(20)	2,263
Latino	38	(12)	30	(10)	22	(10)	25	(14)	1,827
Other	18	(6)	14	(4)	12	(6)	7	(4)	557
Exposure Category									
MSM	160	(53)	167	(53)	114	(53)	99	(54)	14,038
IDU	59	(19)	62	(20)	38	(18)	38	(21)	1,328
MSM IDU	72	(24)	70	(22)	53	(25)	40	(22)	2,807
Heterosexual	5	(2)	7	(2)	4	(2)	4	(2)	172
Other/Unknown	8	(3)	9	(3)	4	(2)	3	(2)	267
Age at Death (years)									
0 - 29	6	(2)	3	(1)	0	(0)	6	(3)	1,093
30 - 39	56	(18)	39	(12)	21	(10)	18	(10)	7,145
40 - 49	115	(38)	131	(42)	86	(40)	62	(34)	6,979
50 - 59	78	(26)	94	(30)	79	(37)	60	(33)	2,529
60+	49	(16)	48	(15)	27	(13)	38	(21)	866
Total	**304**	**(100)**	**315**	**(100)**	**213**	**(100)**	**184**	**(100)**	**18,612**

* 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 2005.

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 with AIDS in 1995 to 2.1 per 100 persons with AIDS in 2005. 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 1994 was 2.0 per 100 persons with AIDS, declining to 1.2 per 100 persons with AIDS in 2005.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1994-2005, 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 85% of AIDS deaths occurring in 1994-1997 to 68% in 2002-2005 (Table 5.2). The proportion of deaths in which HIV/AIDS was the underlying cause has remained level in the latter two time periods 1998-2001 and 2002-2005. Other frequently occurring underlying causes of death in 2002-2005 include non-AIDS cancer (7.9%), heart disease (5.1%), liver disease (2.4%), and drug overdose (2.4%). The proportion of persons with AIDS who died of these non-HIV/AIDS-related conditions increased over time.

Table 5.2 Underlying causes of death among persons with AIDS*, 1994-2005, San Francisco

	Year of Death					
	1994-1997 N= 4,218		1998-2001 N= 1,375		2002-2005 N= 1,184	
Underlying Cause of Death#	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	3,585	(85.0)	943	(68.6)	809	(68.3)
Non-AIDS cancer	81	(1.9)	85	(6.2)	93	(7.9)
Lung cancer	22	(0.5)	27	(2.0)	25	(2.1)
Liver cancer	7	(0.2)	18	(1.3)	18	(1.5)
Anal cancer	3	(0.1)	4	(0.3)	7	(0.6)
Hodgkins lymphoma	10	(0.2)	0	(0.0)	1	(0.1)
Heart disease	47	(1.1)	72	(5.2)	60	(5.1)
Coronary heart disease	18	(0.4)	36	(2.6)	37	(3.1)
Cardiomyopathy	4	(0.1)	12	(0.9)	6	(0.5)
Liver disease	37	(0.9)	24	(1.7)	29	(2.4)
Liver cirrhosis	10	(0.2)	8	(0.6)	16	(1.4)
Alcoholic liver disease	12	(0.3)	14	(1.0)	9	(0.8)
Drug overdose	47	(1.1)	41	(3.0)	28	(2.4)
Mental disorders due to substance use	16	(0.4)	12	(0.9)	25	(2.1)
Suicide	36	(0.9)	25	(1.8)	24	(2.0)
Chronic obstructive lung disease	20	(0.5)	13	(0.9)	19	(1.6)
Cerebrovascular disease	13	(0.3)	12	(0.9)	10	(0.8)
Viral hepatitis	61	(1.4)	36	(2.6)	8	(0.7)
Septicemia	7	(0.2)	4	(0.3)	6	(0.5)
Renal disease	10	(0.2)	3	(0.2)	1	(0.1)
Pneumonia	42	(1.0)	9	(0.7)	0	(0.0)
Aspergillosis	62	(1.5)	8	(0.6)	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. HIV/AIDS-related causes continue to contribute to more than 80% of deaths in AIDS cases. Similar to that observed from the underlying causes of death (Table 5.2), several non-HIV/AIDS related causes increased over time. Deaths due to viral hepatitis showed the largest percentage increase between time periods 1998-2001 and 2002-2005.

Table 5.3 Multiple causes of death among persons with AIDS*, 1994-2005, San Francisco

	Year of Death					
	1994-1997 N = 4,218		1998-2001 N = 1,375		2002-2005 N = 1,184	
Multiple Causes of Death#	**No.**	**(%)**	**No.**	**(%)**	**No.**	**(%)**
HIV/AIDS	3,989	(94.6)	1,167	(84.9)	993	(83.9)
Heart disease	606	(14.4)	279	(20.3)	237	(20.0)
Coronary heart disease	36	(0.9)	60	(4.4)	64	(5.4)
Cardiomyopathy	47	(1.1)	35	(2.5)	24	(2.0)
Liver disease	230	(5.5)	193	(14.0)	190	(16.0)
Liver cirrhosis	71	(1.7)	71	(5.2)	84	(7.1)
Alcoholic liver disease	18	(0.4)	18	(1.3)	13	(1.1)
Viral hepatitis	106	(2.5)	146	(10.6)	185	(15.6)
Pneumonia	682	(16.2)	199	(14.5)	168	(14.2)
Non-AIDS cancer	259	(6.1)	125	(9.1)	138	(11.7)
Lung cancer	25	(0.6)	29	(2.1)	28	(2.4)
Liver cancer	9	(0.2)	23	(1.7)	20	(1.7)
Anal cancer	3	(0.1)	7	(0.5)	12	(1.0)
Hodgkins lymphoma	14	(0.3)	3	(0.2)	5	(0.4)
Septicemia	270	(6.4)	129	(9.4)	137	(11.6)
Renal disease	160	(3.8)	93	(6.8)	135	(11.4)
Mental disorders due to substance use	60	(1.4)	60	(4.4)	85	(7.2)
Chronic obstructive lung disease	55	(1.3)	43	(3.1)	59	(5.0)
Drug overdose	56	(1.3)	53	(3.9)	37	(3.1)
Cerebrovascular disease	57	(1.4)	39	(2.8)	35	(3.0)
Suicide	36	(0.9)	25	(1.8)	24	(2.0)
Aspergillosis	91	(2.2)	25	(1.8)	5	(0.4)

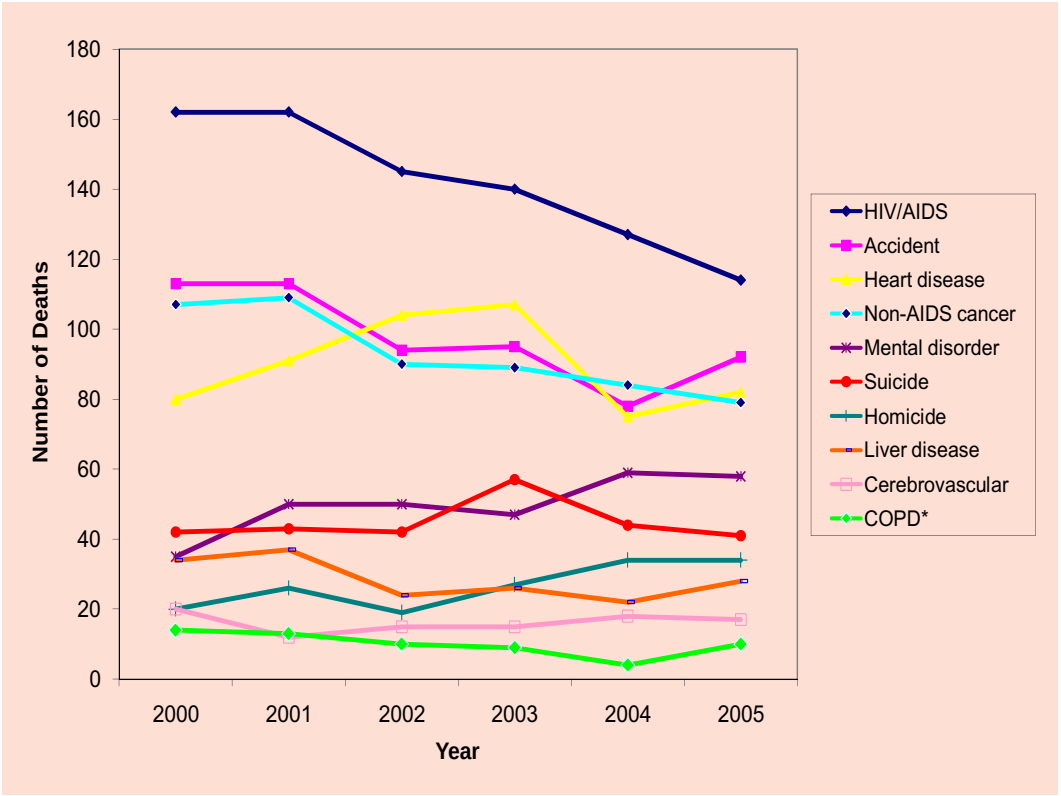
* Deceased AIDS cases without cause of death information are not represented in this table.

\# 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 data obtained from the California Vital Statistics Death Files for San Francisco residents who died between 2000 and 2005 to compare number of deaths and death rates by gender, age, and race/ethnicity. Cause of death was determined by using a set of ICD-10 codes that specify the underlying cause of death; this method is consistent with the National Vital Statistics Reports. Although the number of deaths attributed to HIV/AIDS has declined from 2000 to 2005, HIV/AIDS remains the leading cause of death for men aged 25-54 years in San Francisco (Figure 5.2). Accidents and non-AIDS cancers also demonstrated a decreasing trend from 2000 to 2004 while heart disease displayed a marked increase in deaths from 2000 to 2003 before a significant decrease in 2004. By 2005, accidents were the second leading cause of death followed by heart disease and non-AIDS cancer.

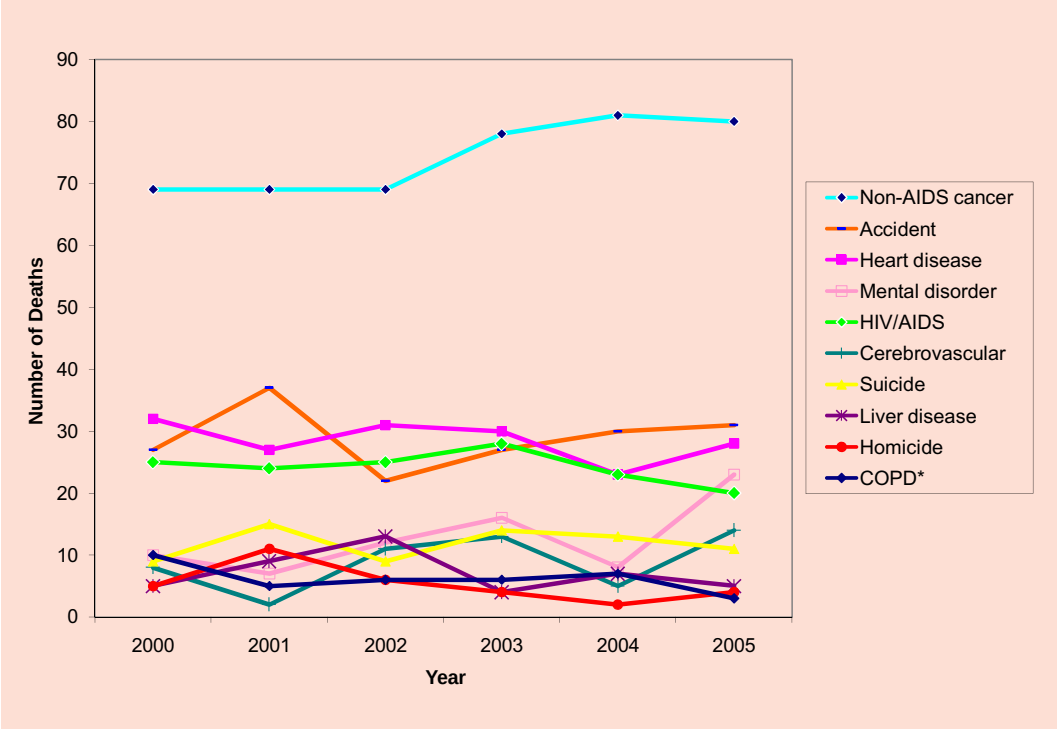
Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2000-2005



* COPD: chronic obstructive pulmonary disease.

San Francisco women had significantly lower numbers of deaths from HIV/AIDS in comparison to their male counterparts. In 2005, 114 men aged 25-54 years died of HIV/AIDS while 20 women in the same age group died of HIV/AIDS. The number of female deaths attributed to HIV/AIDS peaked in 2003 (23 deaths) before declining to become the fifth leading cause of death for women aged 25-54 years in 2005 (Figure 5.3). Non-AIDS cancer was the leading cause of death for female residents.

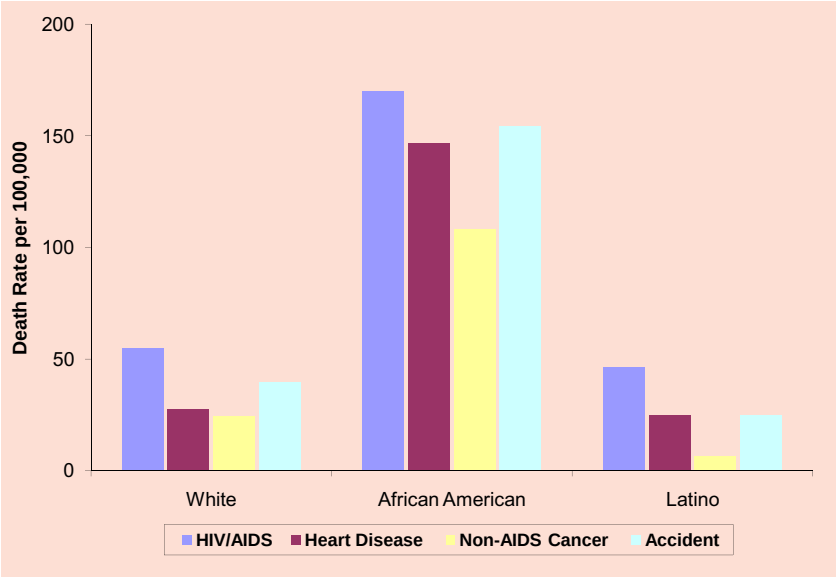
Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2000-2005



* COPD: chronic obstructive pulmonary disease.

African American males suffered from disproportionate death rates across all leading causes of death in comparison to their white and Latino counterparts. For example, the HIV/AIDS-related death rate for African-Americans (170 per 100,000) was at least 3 times higher than the rates for white (55 per 100,000) and Latino (46 per 100,000) men. Overall, HIV/AIDS was the leading cause of death in 2005 among African-American, white, and Latino men, followed by accident, heart disease and cancer (Figure 5.4).

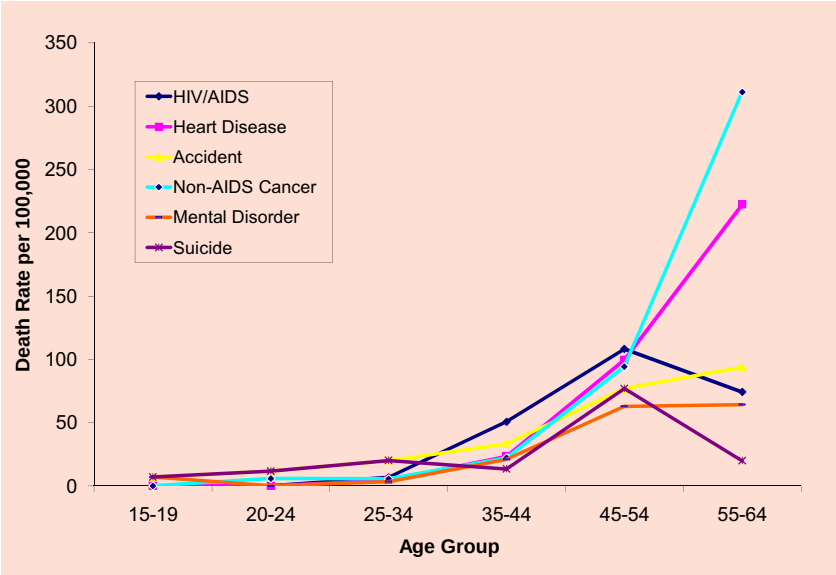
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2005



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

The age-specific death rates show accidents and suicides were higher among younger men aged 15-34 (Figure 5.5). The HIV/AIDS-related death rates were higher among men aged 35-54, especially among men aged 45-54 who had the highest HIV/AIDS-related death rate (108 per 100,000). Men aged 55-64 suffered higher death rates from chronic conditions such as non-AIDS cancers and heart disease.

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 15-64 years by age group, 2005

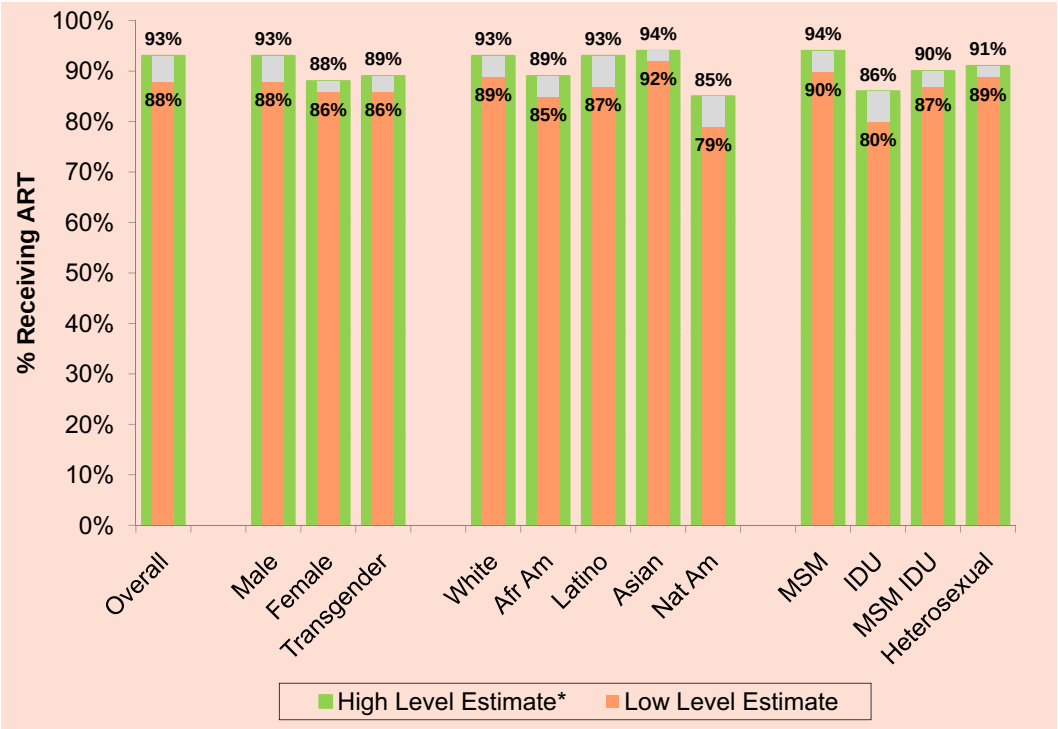


* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

6 Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.1 shows estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2007. 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 lost-to-follow-up and whose treatment information may be incomplete, it provides an upper level estimate of ART use. Overall, 88%-93% of persons living with AIDS received ART. ART use was slightly lower among females, transgender persons, African Americans and Latinos. Use of ART among Native Americans and injection drug users was considerably lower compared to other groups.

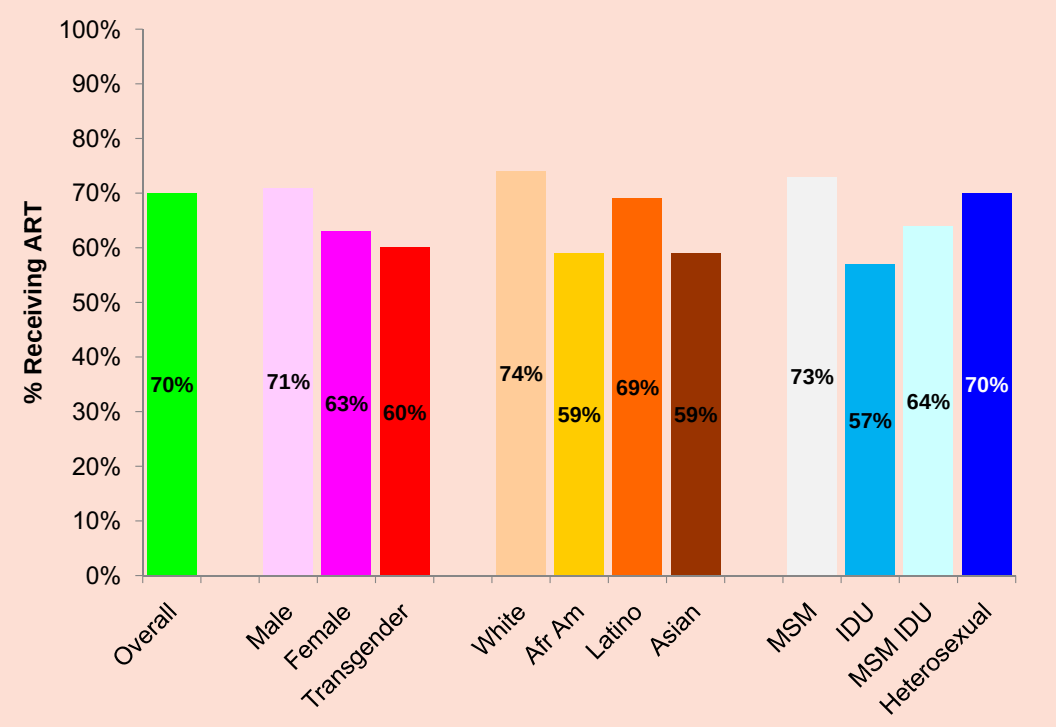
Figure 6.1 Estimate of antiretroviral therapy use among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2007, San Francisco



* 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 with a CD4 count between 200 and 350 cells/μL (the eligibility criteria for ART use) at any point after their HIV diagnosis. As of December 31, 2007, there were a total of 6,442 persons living with HIV non-AIDS. Of these, 90% have at least one CD4 count available and 73% have CD4 within 12 months after their HIV diagnosis. Thirty-five percent, or 2,228, 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 2007, San Francisco



7 Insurance Status at Time of HIV/AIDS Diagnosis

Men, women, and transgender persons have different insurance status at the time of AIDS diagnosis. The proportion of men with private insurance was fairly stable between 2002 and 2007 and was consistently higher than proportions of women and transgender persons with private insurance (Figure 7.1). Most women had public insurance, with the percentage being greater than 50% since 2003. Among transgender persons, there was an increase in the percentage with public insurance between 2002 and 2006.

For AIDS cases diagnosed between 2002 and 2007, 93% of transgenders and 85% of women were underinsured (i.e. having 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, 2002-2007, San Francisco

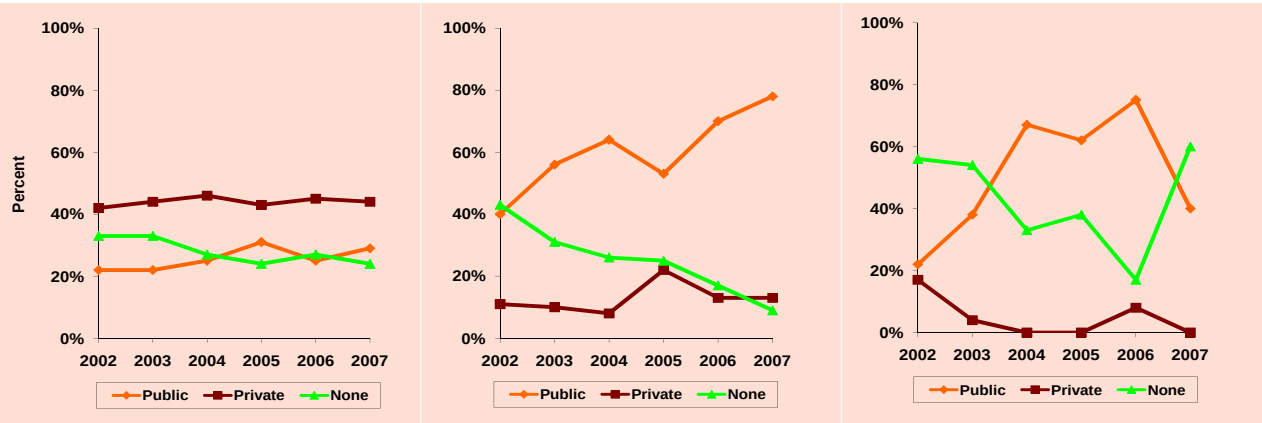
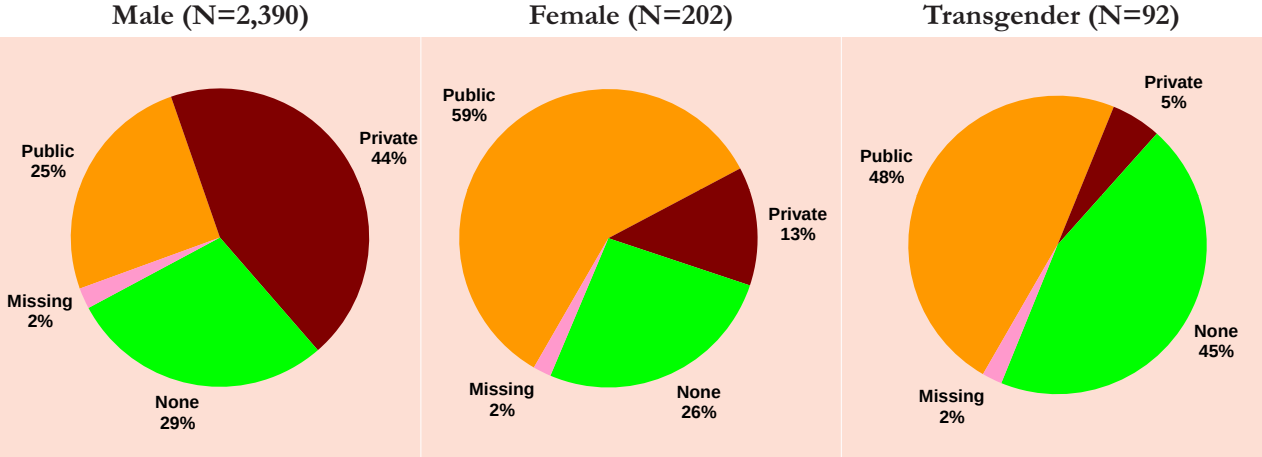


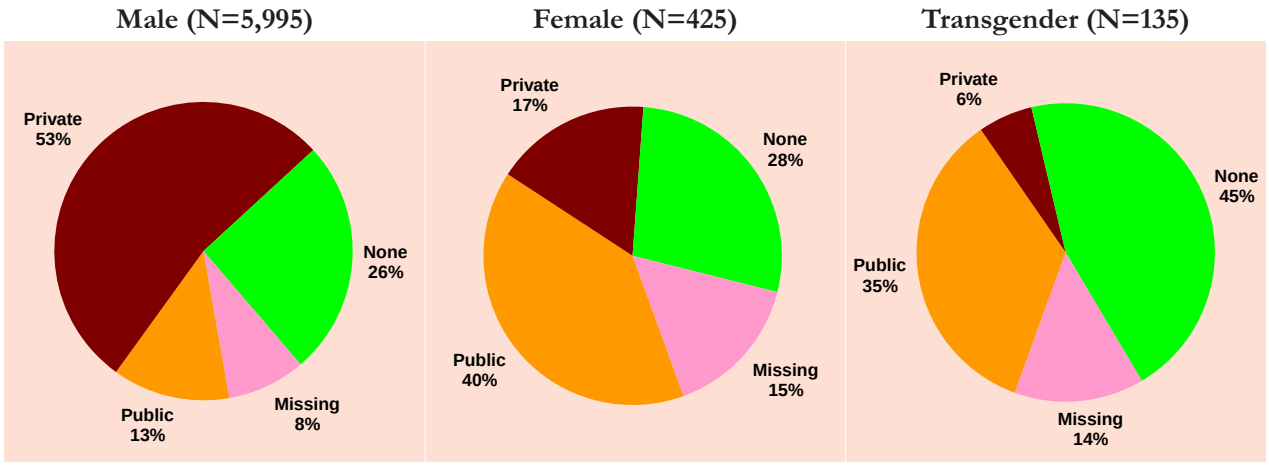
Figure 7.2 AIDS cases by gender and insurance status at diagnosis, 2002-2007, San Francisco



We examined the insurance status for HIV non-AIDS cases reported between 2002 and 2007, 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 68% 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 2002-2007, San Francisco

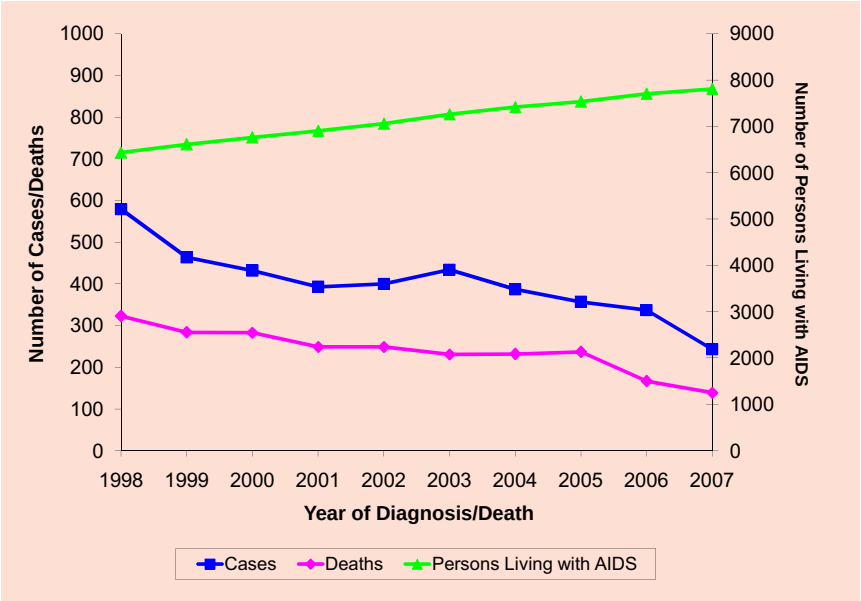


8 HIV/AIDS among Men Who Have Sex with Men

AIDS surveillance data

Over the last decade, numbers of AIDS cases and AIDS deaths declined among MSM coupled with an increase in MSM living with AIDS. Between 2003 and 2005, deaths among MSM were stable (Figure 8.1). In 2007, there were 7,809 MSM living with AIDS in San Francisco.

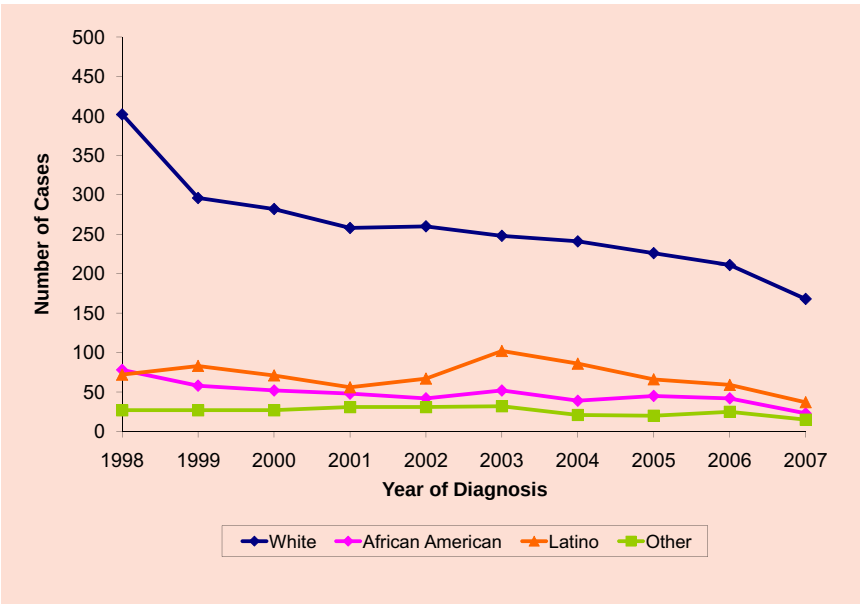
Figure 8.1 AIDS cases, deaths, and prevalence among MSM*, 1998-2007, San Francisco



* Includes MSM and MSM IDU.

The majority of San Francisco's MSM AIDS cases are white (Figure 8.2). Since 1999, Latino has been the second largest race/ethnic group among MSM AIDS cases. In 2007 there were 168 white MSM, 37 Latino MSM, and 23 African American MSM diagnosed with AIDS in San Francisco.

Figure 8.2 AIDS cases among MSM* by race/ethnicity, 1998-2007, 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 through the course of outreach HIV prevention activities for MSM in San Francisco. Their data provide an opportunity to track annual trends in HIV-related risk behavior in a large, community-recruited sample of MSM.

Figure 8.3 illustrates trends in unprotected anal intercourse (UAI) from 1999 through 2007 by self-reported HIV serostatus. An overall trend of increasing UAI is apparent among HIV-positive as well as HIV-negative MSM. Figure 8.3 also illustrates that UAI is more commonly reported by HIV-positive MSM, and may be rising faster.

Figure 8.4 shows the proportion of MSM who report having UAI with one or more sex partners whose HIV status was not known to them. This measure gauges the potential for HIV transmission to occur by excluding sex between individuals known to be of the same HIV status. Overall, UAI with potentially HIV-serodiscordant men peaked in 2001. Recent years show a leveling off in potentially serodiscordant UAI among HIV-negative MSM, with a potential resurgence among HIV-positive MSM.

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco

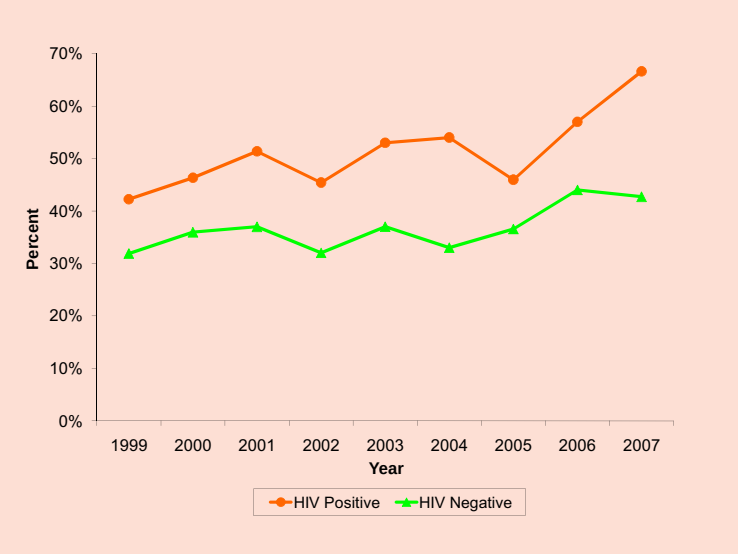
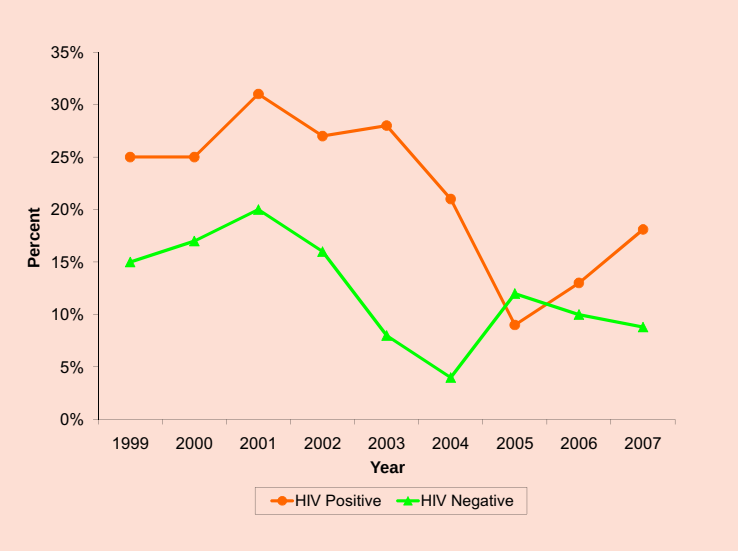


Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco



Sexually transmitted diseases among MSM

Figure 8.5 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 1998 through 2007. 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 as well as a factor that enhances the acquisition and spread of HIV. 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 or leveling off in 2007. 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.

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 8.5 Male rectal gonorrhea and male gonococcal proctitis among MSM, 1998-2007, San Francisco

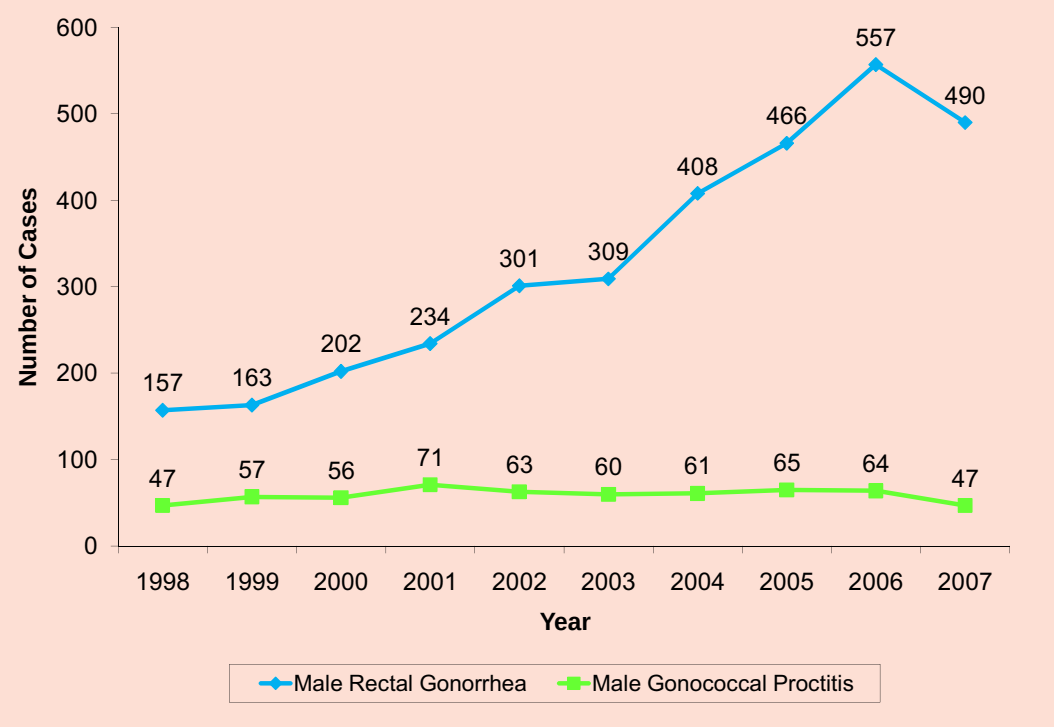
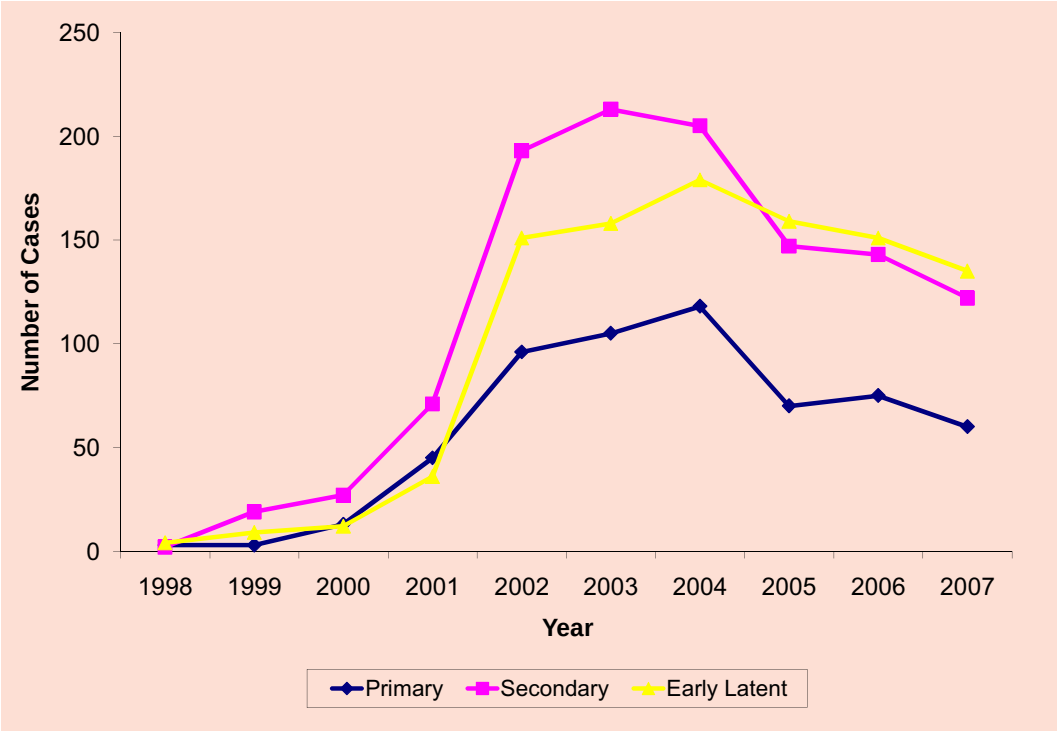


Figure 8.6 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 1998 through 2007. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior as well as a factor that enhances the acquisition and spread of HIV. The increase in early syphilis among MSM in San Francisco since 1998 is dramatic. However, in 2005, for the first time since this rapid rise, early syphilis among MSM declined.

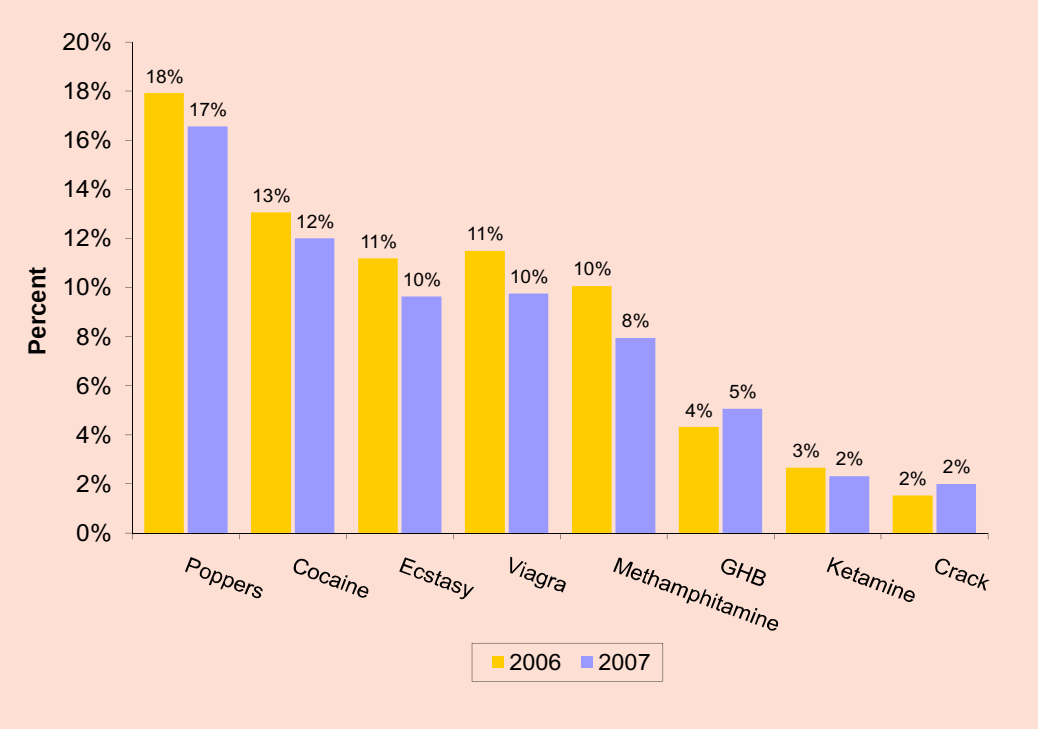
Figure 8.6 Syphilis among MSM, 1998-2007, San Francisco



Substance use

The STOP AIDS Project also records substance use in the last six months among MSM. Overall, fewer MSM reported diverse substance use in 2007 compared to 2006 (Figure 8.7), although most decreases are not statistically significant. Substance use, particularly methamphetamine, continues to be strongly associated with risk for HIV acquisition.

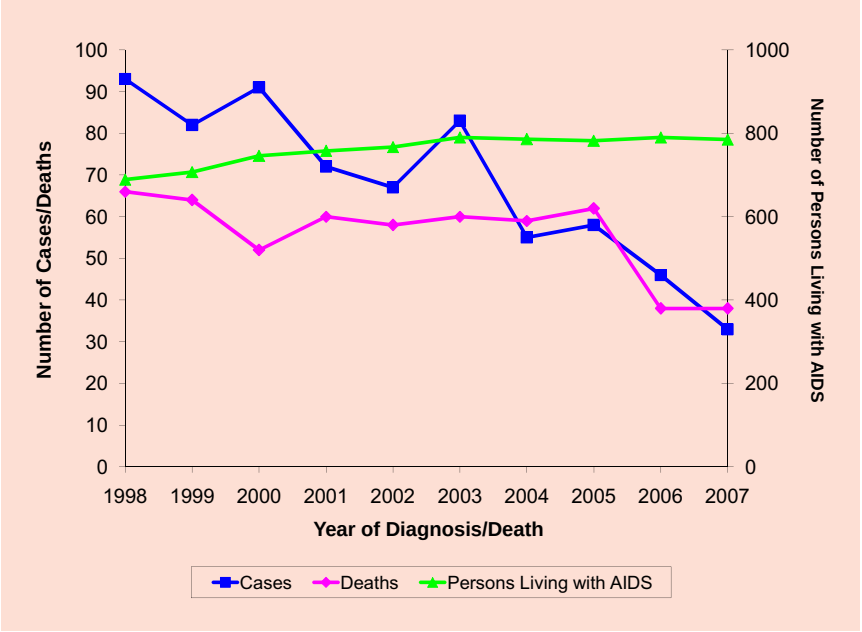
Figure 8.7 Substance use among MSM, the Stop AIDS Project, 2006-2007, San Francisco



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 2007 (Figure 9.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2007, there were 785 non-MSM IDU living with AIDS in San Francisco.

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1998-2007, San Francisco



From 1998 to 2004, African Americans accounted for the greatest number of AIDS cases among non-MSM IDU (Figure 9.2). Since 2005, the numbers of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who are Latino or other race/ethnicities accounted for few AIDS cases between 1998 and 2007.

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1998-2007, San Francisco

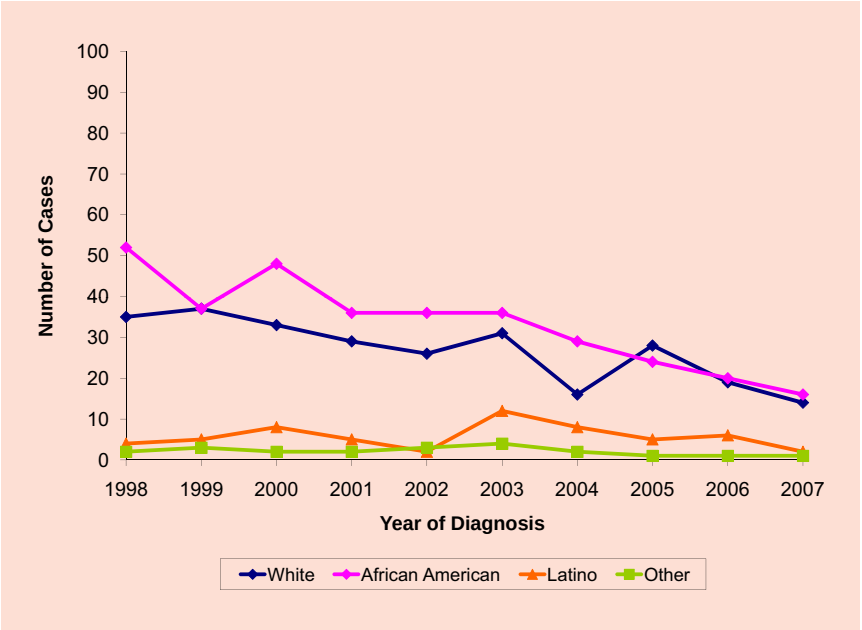


Table 9.1 shows the exposure category and race/ethnicity distributions of AIDS cases that were directly, or indirectly, associated with injection drug use. MSM IDU account for 64% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 22 %. Whites make up the largest proportion 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 2007, San Francisco

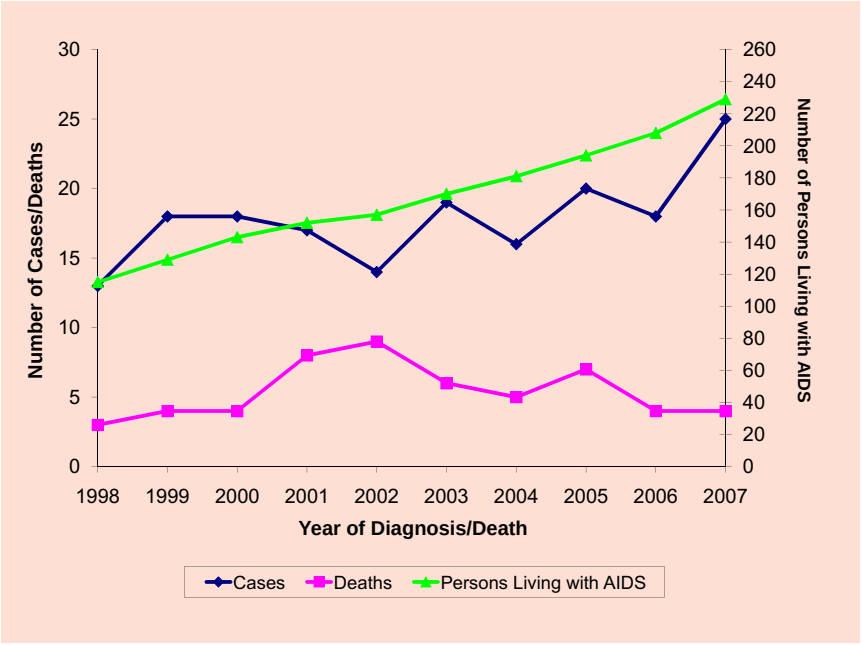
	Race/Ethnicity Distribution by Percent				
Exposure Category	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,393	37%	49%	12%	3%
Female heterosexual IDU	665	33%	53%	10%	5%
MSM IDU	4,087	71%	16%	10%	3%
Lesbian IDU	55	45%	38%	11%	5%
Heterosexual contact with IDU	149	33%	44%	15%	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

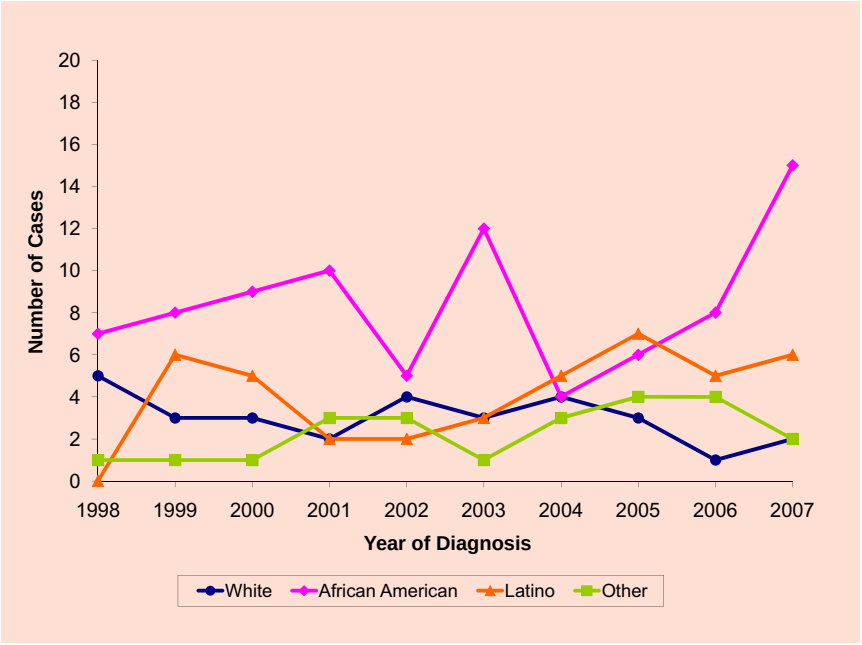
Between 1998 and 2007 there has been a slight increasing trend in the number of AIDS cases among persons who were infected with HIV through heterosexual contact (Figure 10.1). For deaths among non-IDU heterosexuals, the number ranged between 3 to 9 deaths per year during this time period. The number of non-IDU heterosexuals living with AIDS increased to 229 by December 31, 2007.

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1998-2007, San Francisco



Due to the small number of cases, trends in heterosexual AIDS cases by race/ethnicity fluctuate from year to year (Figure 10.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 1998. Since 2004, the number of African American heterosexual AIDS cases diagnosed per year has increased steadily.

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1998-2007, 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.

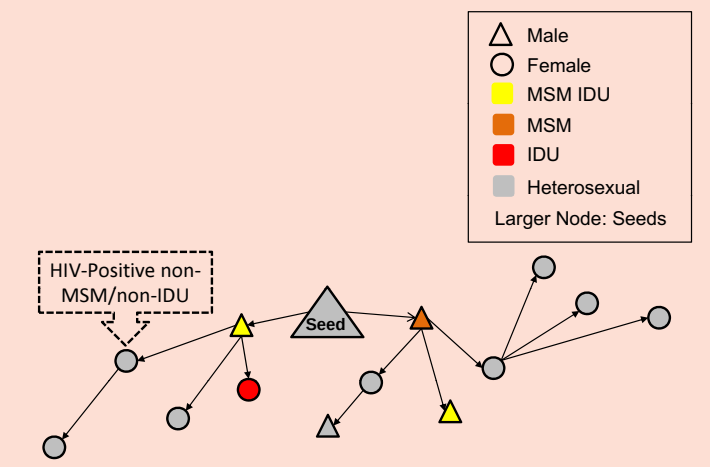
Table 10.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2007, San Francisco

	Men		Women	
Exposure Category	**Number**	**%**	**Number**	**%**
Sex with injection drug user	36	30%	113	40%
Sex with bisexual men	N/A	N/A	47	17%
Sex with HIV+ transfusion recipient	<5	-	<5	-
Sex with HIV+ persons of unknown risk	80	67%	119	42%

National HIV Behavioral Surveillance data

As part of the National HIV Behavioral Surveillance (NHBS), we conducted a targeted survey of heterosexuals living in census tracts that have had historically high levels of AIDS cases and the lowest income levels. "Heterosexual" was defined as having at least one opposite gender sexual partner in the past 12 months. Data from 494 persons living in these areas were collected using respondent-driven sampling (RDS), whereby eligible participants refer other participants from their social network.

Figure 10.3 Recruitment Chain, Single Heterosexual HIV Positive, 2006, San Francisco



Overall, eight persons tested positive for HIV antibodies; seven of whom were MSM or IDU. Only one HIV-positive person reported no risk group membership other than being heterosexual, yielding a HIV prevalence of 0.27% among heterosexuals in the target area.

Figure 10.3 shows the social network recruitment referral that included the only HIV-positive non-IDU woman. The data illustrate how HIV transmission to heterosexuals can be linked to networks that include MSM and IDU.

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 2007. 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.

Figure 10.4 Syphilis among heterosexual men, 1998-2007, San Francisco

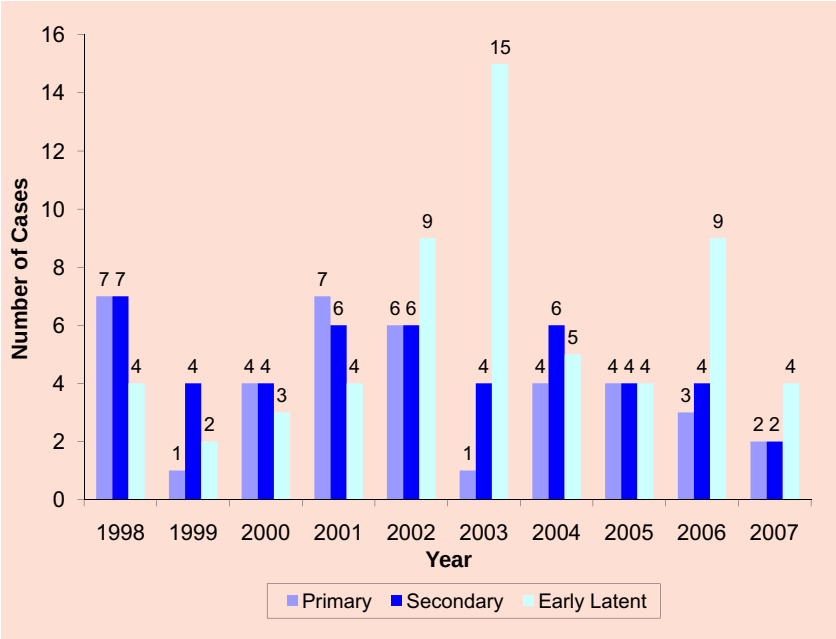
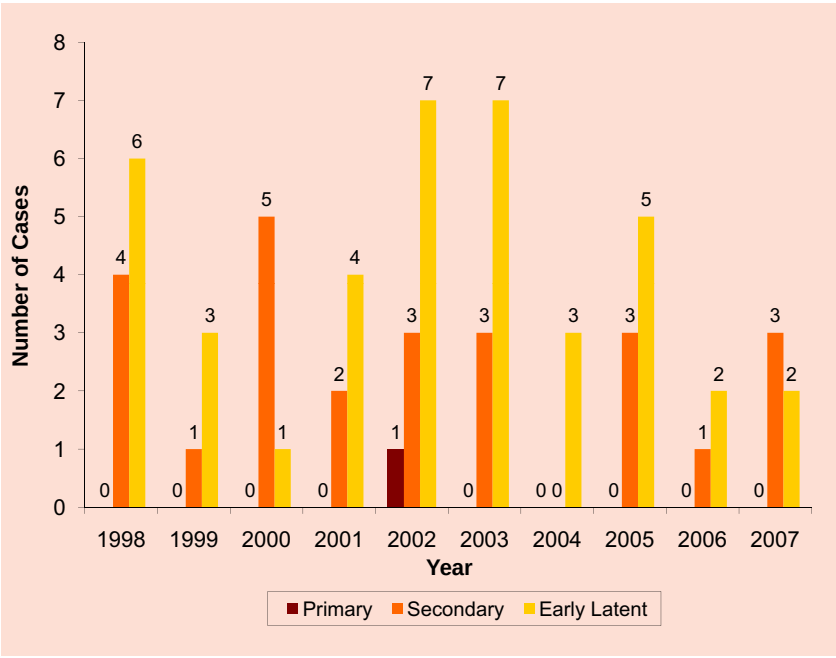


Figure 10.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 1998 through 2007. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases are low and stable in recent years.

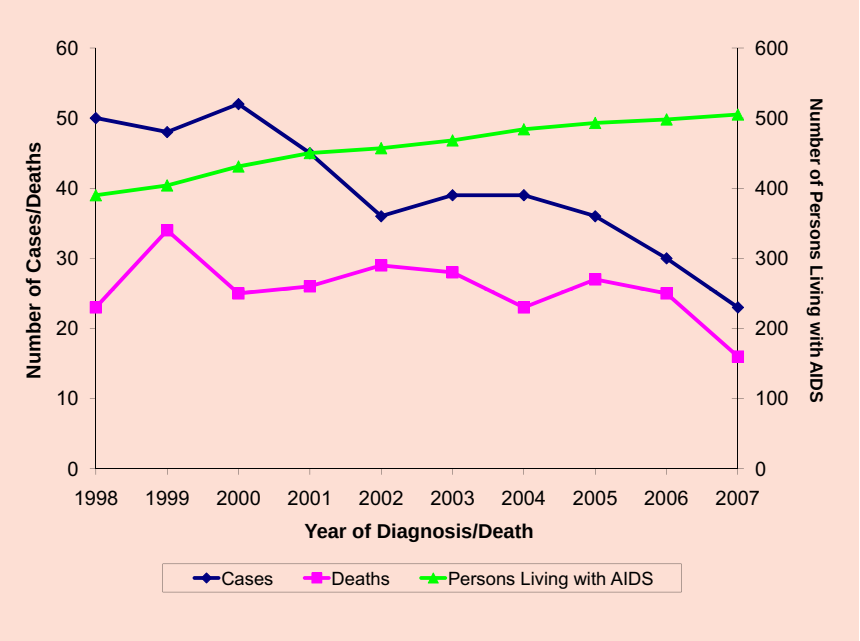
Figure 10.5 Syphilis among women, 1998-2007, San Francisco



11 HIV/AIDS among Women

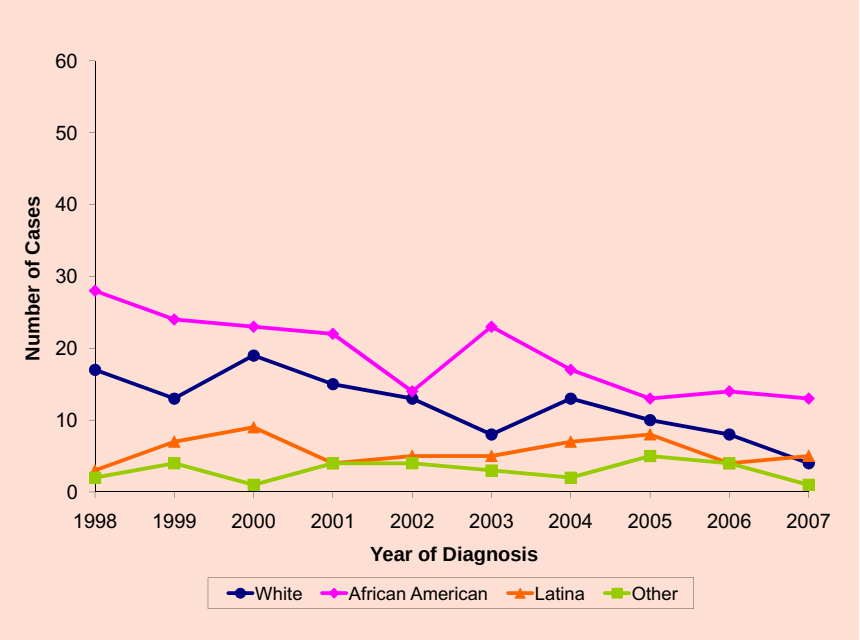
AIDS case numbers among women in San Francisco declined, while the number of deaths remained fairly stable from 1998 to 2006 (Figure 11.1). As of December 31, 2007 there were 505 women living with AIDS.

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1998-2007, San Francisco



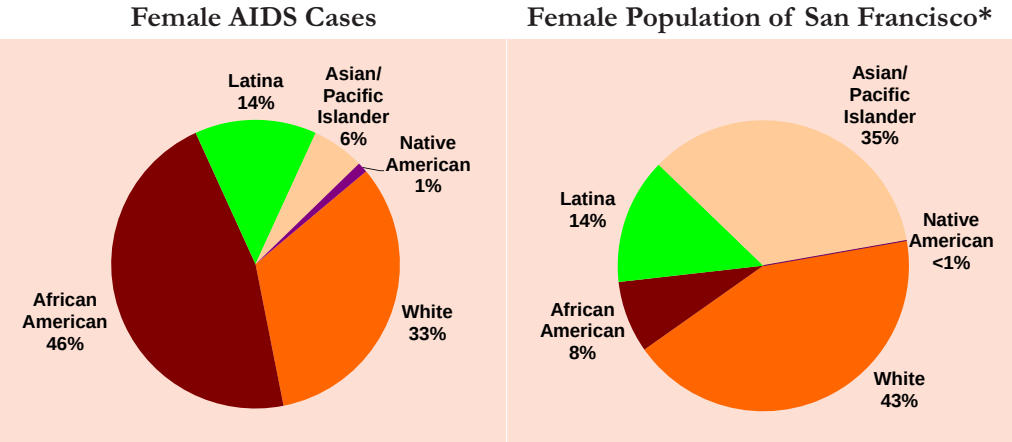
During 1998 to 2007, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 11.2).

Figure 11.2 Female AIDS cases by race/ethnicity, 1998-2007, San Francisco



African American women are more affected by AIDS than women of other race/ethnicities in San Francisco. 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).

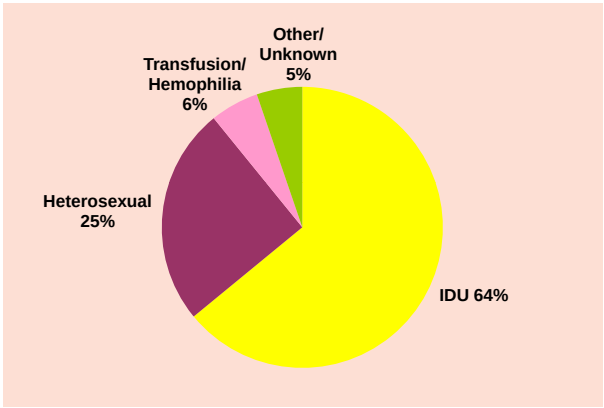
Figure 11.3 Female AIDS cases diagnosed through December 2007 and female population by race/ethnicity, San Francisco



* 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). 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 2007 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 among adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2007. There were 22 adolescents and 142 young adults living with HIV/AIDS. Among living adolescent cases, the majority were infected with HIV perinatally, male, and African American. Among living young adult cases, the majority were MSM, male, and white.

Table 12.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2007, San Francisco

	13-19 Years Old (N=22)	20-24 Years Old (N=142)
Exposure Category		
MSM	23%	69%
IDU	4%	4%
MSM IDU	0%	6%
Transfusion/Hemophilia	4%	1%
Heterosexual	0%	8%
Perinatal	64%	2%
Other/Unknown	4%	9%
Gender		
Male	59%	83%
Female	41%	11%
Transgender	0%	6%
Race/Ethnicity		
White	18%	37%
African American	32%	22%
Latino	27%	30%
Asian/Pacific Islander	14%	7%
Other/Unknown	10%	5%

13 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2007, 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 2007. Of these pediatric HIV/AIDS cases, 28 were known to be alive as of December 2007, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases are children of a high-risk or AIDS-diagnosed parent (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 2007, San Francisco

	N= 28
Exposure Category	
Child of high risk/AIDS parent	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.

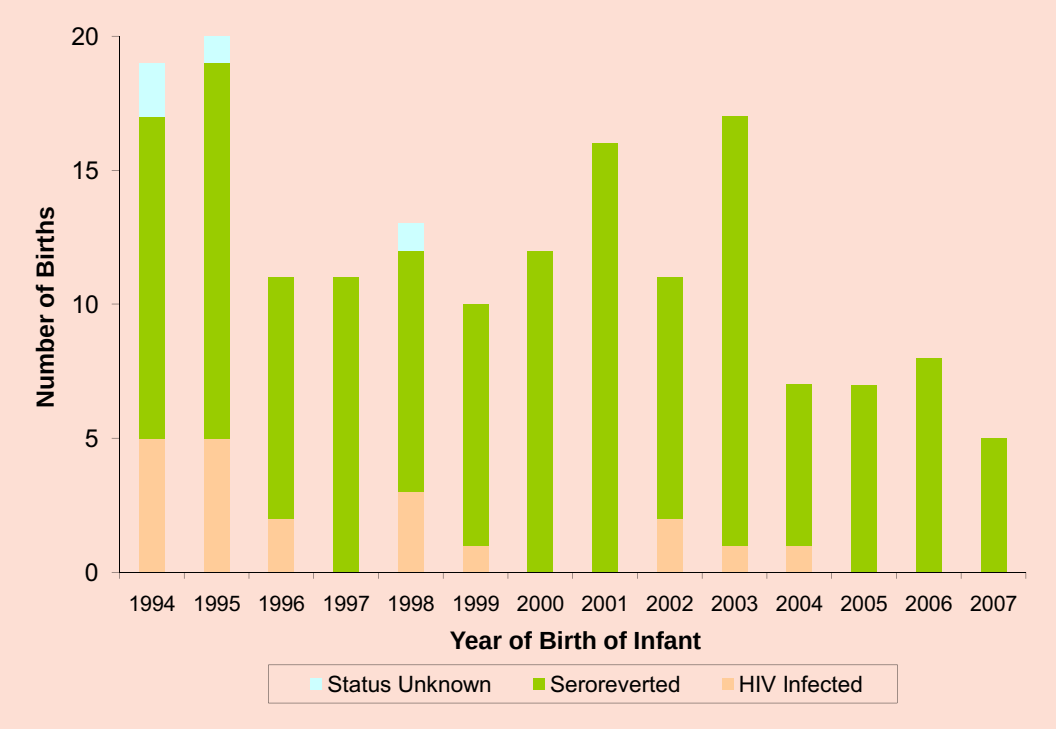
Through December 31, 2007, 305 infants were born to HIV-infected mothers who were residents of San Francisco (Table 13.2). Sixty-two (20%) of these infants were confirmed to be HIV infected, 232 (76%) seroreverted (were determined to be uninfected after maternal antibodies disappeared), and 11 (4%) were of unknown serostatus. Fifty percent of perinatally exposed infants were African American, while whites and Latinos each accounted for 20% and 18% of these infants respectively.

Table 13.2 Infants born to HIV-infected mothers by infant HIV status and race/ethnicity, December 2007, San Francisco

	N (%)
Total	**305**
Infant HIV Status	
HIV-infected	62 (20)
Seroreverted (HIV-)	232 (76)
Unknown	11 (4)
Race/Ethnicity	
White	61 (20)
African American	153 (50)
Latino	56 (18)
Asian/Pacific Islander	21 (7)
Other/Unknown	14 (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 and for infants to prevent perinatal transmission. In 2007, five 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, 1994-2007, 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 2002-2007, there were a total of 136 HIV non-AIDS and AIDS transgender cases diagnosed in San Francisco (Table 14.1). Compared to all HIV non-AIDS and AIDS cases diagnosed in the same time period, transgender HIV/AIDS cases were more likely to be non-white, injection drug users, and younger.

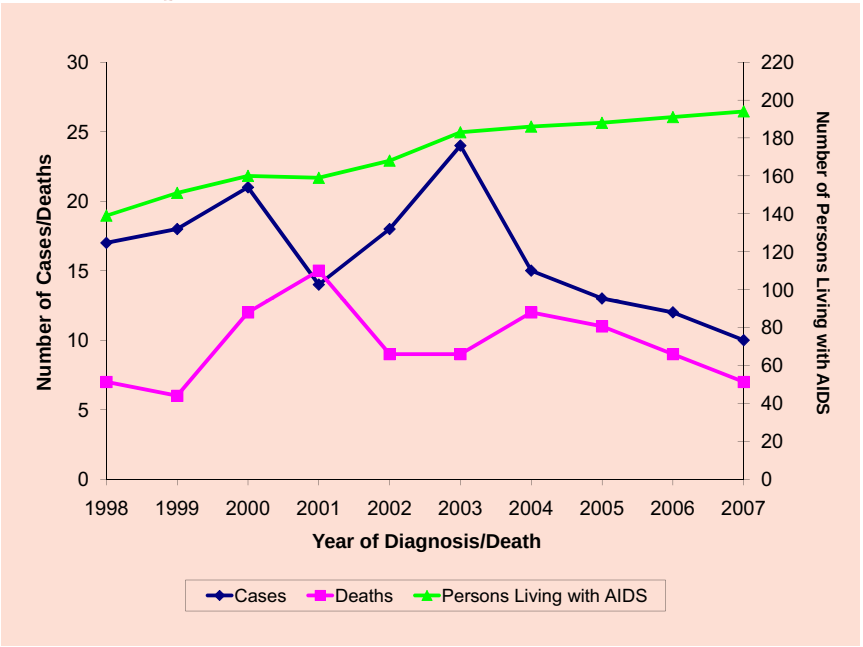
Table 14.1 Characteristics of transgender* HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2007, San Francisco

	Transgender HIV/AIDS Cases Diagnosed 2002-2007 (N=136)	All HIV/AIDS Cases Diagnosed 2002-2007 (N=4,774)
Race/Ethnicity		
White	21%	56%
African American	36%	16%
Latino	28%	18%
Asian/Pacific Islander	10%	6%
Other/Unknown	5%	4%
Injection Drug Use		
Yes	38%	21%
No	63%	79%
Age at Diagnosis		
13 - 29	32%	20%
30 - 39	32%	39%
40 - 49	26%	29%
50+	9%	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 continues to increase with 194 transgender AIDS cases as of December 31, 2007.

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1998-2007, 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 were not classified as homeless.

Figure 15.1 shows a decline in homeless AIDS cases diagnosed between 1998 and 2005. In 2006 there was an increase in the number of new homeless AIDS cases diagnosed (44 cases). Since 1998, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 8% and 14%. For 2007, 9% of AIDS cases were homeless at the time of diagnosis.

Compared to all HIV/AIDS cases diagnosed in 2002 to 2007, persons who were homeless at their HIV/AIDS diagnosis (diagnosed in 2002 to 2007) 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, 1998-2007, San Francisco

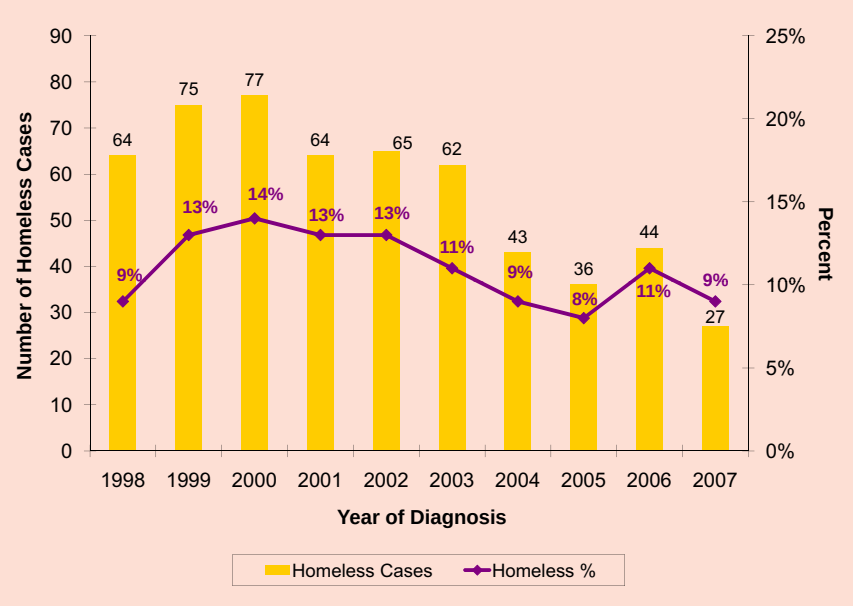


Table 15.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2007, San Francisco

	Homeless AIDS Diagnosed 2002-2007 (N=227)	AIDS Cases Diagnosed 2002-2007 (N=2,684)	All Homeless HIV non-AIDS Cases Diagnosed 2002-2007 (N=219)	All HIV non-AIDS Cases Diagnosed 2002-2007 (N=3,139)
Gender				
Male	83%	92%	85%	92%
Female	17%	8%	15%	8%
Race/Ethnicity				
White	45%	57%	47%	57%
African American	34%	18%	31%	16%
Latino	14%	18%	14%	17%
Other/Unknown	6%	7%	8%	11%
Exposure Category				
MSM	25%	64%	32%	69%
IDU	40%	13%	32%	9%
MSM IDU	29%	16%	24%	10%
Heterosexual	5%	4%	4%	3%
Other/Unidentified	2%	3%	8%	9%
Age at Diagnosis (years)				
0 - 19	1%	<1%	1%	1%
20 - 29	12%	9%	27%	21%
30 - 39	31%	34%	31%	41%
40 - 49	41%	37%	30%	27%
50+	15%	20%	11%	10%

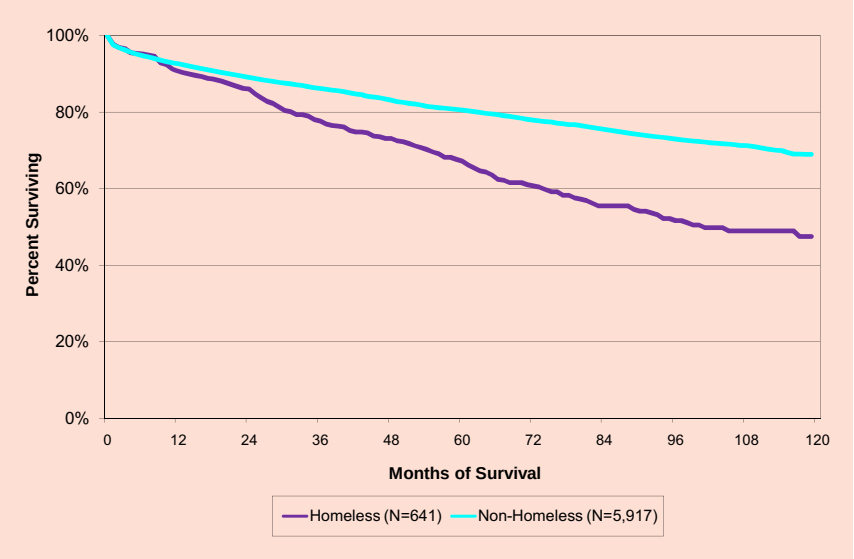
There were 6,558 AIDS cases diagnosed between 1996 and 2006 and 641 (9.8%) were homeless at diagnosis (Table 15.2). Compared to housed persons, homeless persons with HIV/AIDS are more likely to be women or transgender, less than 30 years old, African American, injection drug users, to either have public health insurance or to be uninsured. Homeless persons were less likely to be aged 50 years or older and to be receiving antiretroviral therapies than were the non-homeless cases.

Table 15.2 Characteristics of persons diagnosed with AIDS between 1996 and 2006 by housing status at diagnosis, San Francisco

	Homeless AIDS (N=641)	Non-Homeless AIDS (N=5,917)
Gender		
Male	78%	91%
Female	15%	7%
Transgender	8%	3%
Age at Diagnosis (years)		
13-29	13%	9%
30-39	40%	40%
40-49	36%	34%
50+	12%	17%
Race/Ethnicity		
White	41%	62%
African American	39%	16%
Latino	17%	16%
Other	4%	6%
Exposure Category		
MSM	21%	69%
IDU	40%	11%
MSM IDU	33%	15%
Heterosexual/Other	6%	5%
Insurance Status		
Public	33%	20%
Private	1%	44%
None	64%	32%
Unknown	2%	3%
Initial AIDS Diagnosis		
Low CD4 count	78%	80%
Opportunistic illness	22%	20%
CD4 count at diagnosis (mean cells/mm)	172	184
Received antiretroviral therapies		
Yes	71%	82%
No	29%	18%
Received prophylaxis against Pneumocystis jirovecii pneumonia		
Yes	65%	57%
No	35%	43%
Received prophylaxis against Mycobacterium avium complex		
Yes	27%	19%
No	73%	81%

Persons who were homeless at diagnosis had much worse survival than housed persons (Figure 15.2). Sixty-seven percent of persons who were homeless at the time of AIDS diagnosis survived five years compared with 81% of non-homeless.

Figure 15.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2006 by housing status at diagnosis, San Francisco



* See Technical Notes "AIDS Survival."

Death certificates list a single, underlying cause of death as well as multiple, contributory causes of death. Homeless persons with HIV disease suffer from additional conditions which put them at risk for death from causes other than HIV. Among persons who died with AIDS, a greater proportion of homeless persons died from conditions other than HIV. In large part, these other causes of death may be due to substance abuse (hepatitis, liver disease, septicemia) and mental illness. In contrast, housed persons who died from conditions other than HIV frequently died from chronic diseases such as heart disease and cancer.

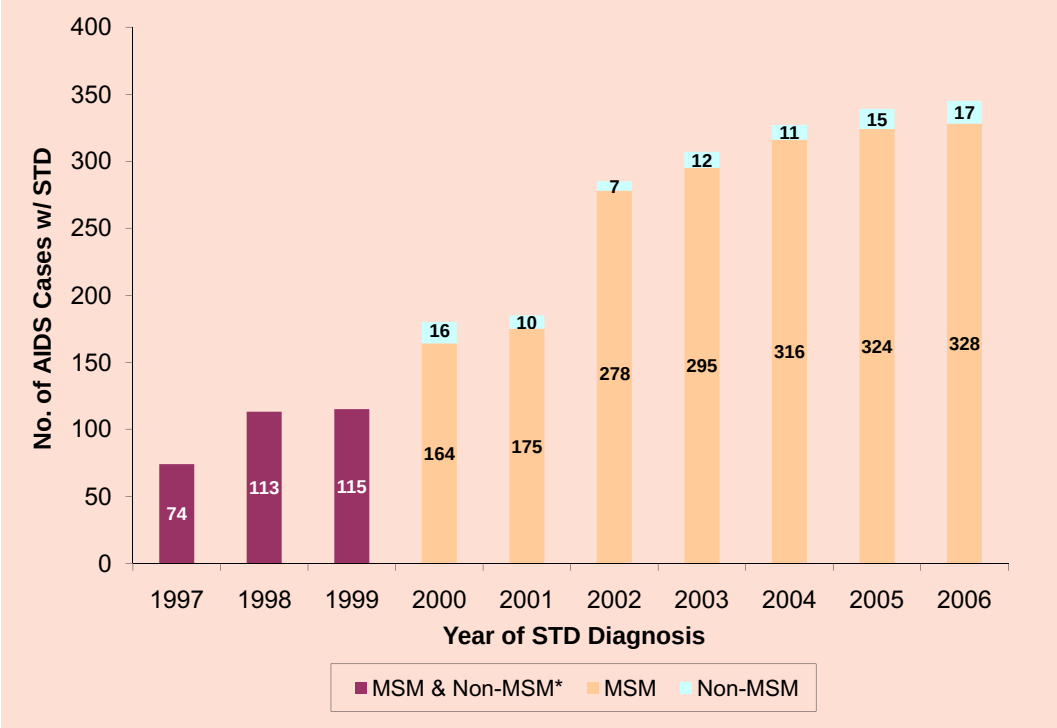
Table 15.3 Multiple causes of death among persons diagnosed with AIDS between 1996 and 2005 by homeless status at diagnosis, San Francisco

	Homeless Status at Diagnosis			
	Homeless		Non-Homeless	
	Number	(%)	Number	(%)
Cause of death				
HIV/AIDS	156	(78)	905	(83)
Hepatitis	41	(21)	130	(12)
Liver disease	39	(20)	160	(15)
Septicemia	35	(18)	121	(11)
Mental illness	33	(17)	52	(5)
Heart disease	29	(15)	201	(18)
Pneumonia (non-AIDS related)	27	(14)	172	(16)
Non-AIDS cancer	12	(6)	139	(13)

16 Sexually Transmitted Diseases among Persons with AIDS

The occurrence of STD diagnoses among persons living with AIDS is an important marker for sexual risk behavior and potential HIV transmission. Diagnosis of sexually transmitted diseases (STD) occurring among persons with AIDS was determined through a computerized match of the AIDS and STD case registries through 2006. A match was verified by name, date of birth, and gender. 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 1997 with a dramatic 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 8.5) and syphilis (see Figure 8.6), particularly among MSM, reported in 2002. All STDs occurred after the 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, 1997-2006, San Francisco



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

17 Late HIV Testing

We have been monitoring the trends in persons diagnosed late in the course of their HIV infection. Prior to the implementation of HIV case reporting, we determined the proportion of persons diagnosed with AIDS whose HIV diagnosis occurred within 12 months of their AIDS diagnosis. In this calculation, the numerator is the number of late testers and the denominator is persons with AIDS. The characteristics and trends in late testing are shown in Table 17.1.

With the addition of HIV case reporting in California, we are able to calculate the proportion of late testers among all persons reported with HIV. This includes persons initially reported with HIV who later developed AIDS, persons initially reported with AIDS, and persons reported with HIV and AIDS concurrently. In this analysis, the numerator is still the number of late testers and the denominator includes all persons reported with HIV/AIDS. This is the same denominator used in national estimates of late testing. The analysis of late testing using this methodology is shown in Table 17.2.

Table 17.1 Characteristics of late HIV testers among AIDS cases diagnosed between 2003 and 2006, San Francisco

	AIDS cases in 2003-2006	Late testers among AIDS cases	
	Number	Number	%
Total	**1,905**	**680**	**36%**
Gender			
Female	144	57	40%
Male	1,696	609	36%
Transgender	65	14	22%
Age at AIDS Diagnosis (Years)			
13 - 29	166	90	54%
30 - 39	648	235	36%
40 - 49	700	225	32%
50+	391	130	33%
Race/Ethnicity			
White	1,057	338	32%
African American	343	126	37%
Latino	376	156	41%
Other	129	60	47%
Exposure Category			
MSM	1,232	450	37%
IDU	245	85	35%
MSM IDU	305	65	21%
Heterosexual	73	45	62%
No Reported Risk/Other	50	35	70%
Country of Birth			
United States	1,534	517	34%
Outside of USA	263	137	52%
Unknown	108	26	24%

Our definition of late testing is based upon the earliest known date that an individual was diagnosed with HIV. We use the earliest date of a laboratory report of a confirmed positive HIV antibody, viral load, or CD4 test, starting date of antiretroviral therapy, or the patient's self report of first HIV positive test.

Using AIDS cases only as the denominator we find that 36% of persons diagnosed with AIDS between 2003 and 2006 were late testers. When we use all HIV/AIDS cases as the denominator, we find that 24% of cases were late testers. This proportion is lower than the national estimate in that 38% of HIV cases diagnosed in 2005 progressed to AIDS within 12 months after HIV diagnosis. The lower percentage of late testers (or persons who developed AIDS less than 12 months after HIV diagnosis) among HIV cases in San Francisco compared to the US data may reflect early testing and diagnosis of HIV and receipt of care and treatment in the HIV-infected population. It can also be a result of our effort to ascertain earlier date of HIV diagnosis which resulted in fewer cases being classified as late testers.

Table 17.2 Characteristics of persons diagnosed with HIV in 2003-2006 who developed AIDS within 12 months of HIV diagnosis, San Francisco

	HIV cases diagnosed in 2003-2006 Number	HIV cases developed AIDS within 12 months of HIV diagnosis Number	%
Total	**2,790**	**674**	**24%**
Gender			
Female	216	56	26%
Male	2,509	607	24%
Transgender	65	11	17%
Age at HIV Diagnosis (Years)			
13-29	592	93	16%
30-39	1,099	232	21%
40-49	774	224	29%
50+	325	125	38%
Race/Ethnicity			
White	1,512	335	22%
African American	451	129	29%
Latino	514	153	30%
Other	313	57	18%
Exposure Category			
MSM	1,885	443	24%
IDU	262	84	32%
MSM IDU	305	66	22%
Heterosexual	117	46	39%
No reported risk/Other	221	35	16%
Country of Birth			
United States	2,126	517	24%
Outside of USA	387	131	34%
Unknown	277	26	9%

Late testers from both analyses were more likely to be non white, heterosexual, and to be immigrants. There are two notable differences in the analyses. When using AIDS cases as the denominator, younger persons are more likely to be late testers. The actual number of late testers by age group is similar but there are far fewer young persons that were diagnosed with AIDS than were diagnosed with HIV. Late testing occurred more frequently among injection drug users (IDU) when using HIV/AIDS cases as the denominator. The association of older persons and IDU with late testing is consistent with the finding of lower CD4 at time of HIV diagnosis among these groups. The higher proportion of older persons with HIV that developed AIDS observed in Table 17.2 may also reflect age as a risk factor for AIDS progression.

18 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 primary care for persons living with HIV/AIDS in San Francisco. Persons with HIV/AIDS were considered to have a met need for care if they had received antiretroviral therapy or had at least one CD4 or viral load test during the 12-month period from July 1, 2005 through June 30, 2006. 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), and Kaiser Permanente Northern California. The unmet need estimates were for persons who have been diagnosed with HIV/AIDS and do not include undiagnosed cases or those infected individuals who are not aware of their infections.

We estimated that there were 10,028 persons living with AIDS (PLWA) and 9,061 persons living with HIV non-AIDS (PLWH) in San Francisco during July 1, 2005 through June 30, 2006. A total of 943 (9%) PLWA and 2,889 (32%) PLWH did not receive primary medical care during that time period (Table 18.1). Among PLWA, unmet need was similar across the demographic categories examined. Among PLWH, persons aged 20-29 years old and IDU had a greater percentage of unmet need.

Table 18.1 Unmet need by demographic and risk characteristics among persons living with HIV/AIDS*, July 2005-June 2006, San Francisco

	Persons with AIDS N=10,028		Persons with HIV/non-AIDS N=9,061		ALL HIV/AIDS N=19,089	
	with unmet need		with unmet need		with unmet need	
	Number	(%)	Number	(%)	Number	(%)
Total	943	(9)	2,889	(32)	3,832	(20)
Gender						
Male	894	(9)	2,656	(32)	3,550	(20)
Female	49	(8)	233	(30)	282	(20)
Race/Ethnicity		(0)				
White	623	(10)	1,717	(31)	2,340	(19)
African American	144	(10)	479	(34)	623	(22)
Latino	136	(9)	401	(32)	537	(19)
Asian/Pacific Islander	36	(8)	135	(29)	171	(19)
Other	4	(5)	157	(44)	161	(36)
Age in Years (as of 06/30/2006)						
0 - 19	0	(0)	25	(34)	25	(21)
20 - 29	16	(9)	346	(47)	362	(39)
30 - 39	168	(11)	905	(38)	1,073	(27)
40 - 49	430	(10)	1,032	(29)	1,462	(19)
50 - 59	245	(8)	472	(27)	717	(15)
60+	84	(9)	109	(21)	193	(13)
Exposure Category						
MSM	777	(11)	1,912	(29)	2,689	(19)
IDU	37	(4)	277	(43)	314	(20)
MSM IDU	55	(4)	241	(28)	296	(13)
Heterosexual	30	(11)	92	(37)	122	(23)
Other/Unidentified	43	(19)	367	(54)	410	(45)

* Includes both San Francisco residents and nonresidents who were diagnosed with HIV/AIDS in San Francisco.

Assessing access to medical care using CD4 tests as a marker for care

Despite widespread effects 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 among persons aged 13 years and older diagnosed with HIV between 2004 and 2006 in San Francisco using initial CD4 test as a marker for entry into medical care. The majority (83%) of persons diagnosed with HIV during this time period received medical care within 12 months of their HIV diagnosis (Table 18.2). The median of the initial CD4 counts within 12 months of diagnosis was 435 cells/μL. The proportion of persons receiving a CD4 test and the level of initial CD4 counts in San Francisco are significantly higher than previously observed nationwide (56% receiving a CD4 test and median CD4 counts about 170 among US cases diagnosed during 2001-2003 in 33 states). Although this may indicate higher care seeking patterns and early access to care in San Francisco, the difference may also be seen as more complete ascertainment of CD4 test results at time of HIV diagnosis.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, non whites, persons reported without a risk, and those between 13 and 29 years of age. Lower initial CD4 count is a reflection of late testing or delayed entry into care. People diagnosed with AIDS, non whites, injection drug users, heterosexuals, and persons over 50 years of age had a lower initial CD4 count.

Table 18.2 Percent of HIV cases diagnosed between 2004 and 2006 receiving at least one CD4 test within 12 months of diagnosis and the median of initial CD4 counts, San Francisco

	Number	Percent received at least one CD4 test within 12 month of diagnosis	Median of initial CD4 counts (cells/μL)
Total	2,227	83%	435
HIV disease status			
HIV infection (not AIDS)	1,524	76%	535
Concurrent HIV and AIDS diagnosis*	352	99%	108
AIDS diagnosed ≥ 1 month after HIV diagnosis	351	95%	306
Gender			
Male	2,071	83%	432
Female	156	81%	498
Race/Ethnicity			
White	1,240	87%	462
African American	338	80%	388
Latino	420	78%	350
Asian/Pacific Islander	136	83%	392
Other/Unknown	93	57%	458
Exposure category			
MSM	1,560	85%	436
IDU	184	83%	404
MSM IDU	242	84%	445
Heterosexual	95	87%	305
Other/No reported risk	146	57%	471
Age at HIV diagnosis (years)			
13 - 29	449	78%	472
30 - 39	862	84%	438
40 - 49	642	83%	420
50+	274	87%	340

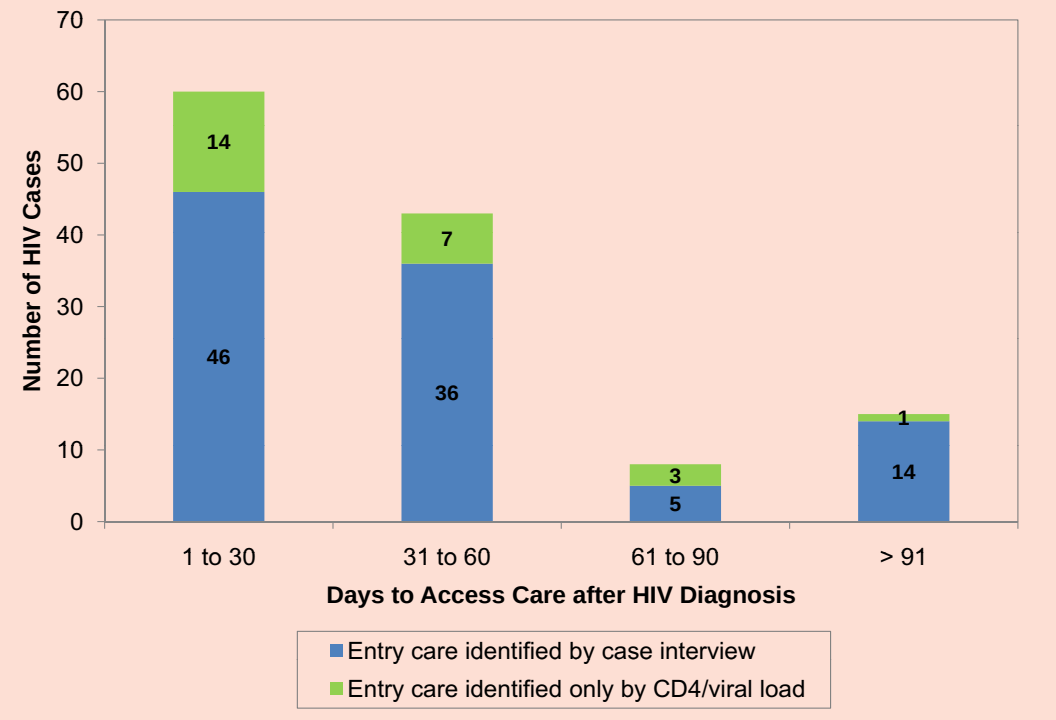
* AIDS was diagnosed in the same month and year of HIV diagnosis.

Monitoring entry into care of newly diagnosed HIV persons

Early linkage to care of HIV infected patients is associated with better clinical and public health outcomes. Collecting CD4 T cell count and HIV plasma viral load is routinely performed on the first clinical visit after HIV diagnosis. Therefore, the presence of these laboratory tests can be used as surrogates for entry into HIV care.

San Francisco Department of Public Health (SFDPH) performs HIV case contact and referral in patients newly diagnosed with HIV at San Francisco's municipal STD clinic, the county hospital and affiliated SFDPH clinics. Between July 1, 2006 and June 30, 2007, 160 new HIV infected patients (who did not have a CD4 test on the same day of HIV testing) were diagnosed at these SFDPH testing facilities. Of the 160 newly diagnosed HIV cases, 121 were interviewed by SFDPH staff and 101 of the interviewed cases were confirmed to have accessed HIV care by self-report or by a health care provider. In addition, 25 cases were confirmed to be in care by the presence of CD4 or HIV viral load tests. Out of the 126 cases with confirmed entry to care, 111 (88%) entered care within the first 3 months after diagnosis (Figure 18). Cases interviewed by a SFDPH staff appear more likely to have entry into care within the first 3 months after HIV diagnosis, suggesting the benefit of case management in increased and shorter time to access care after HIV diagnosis.

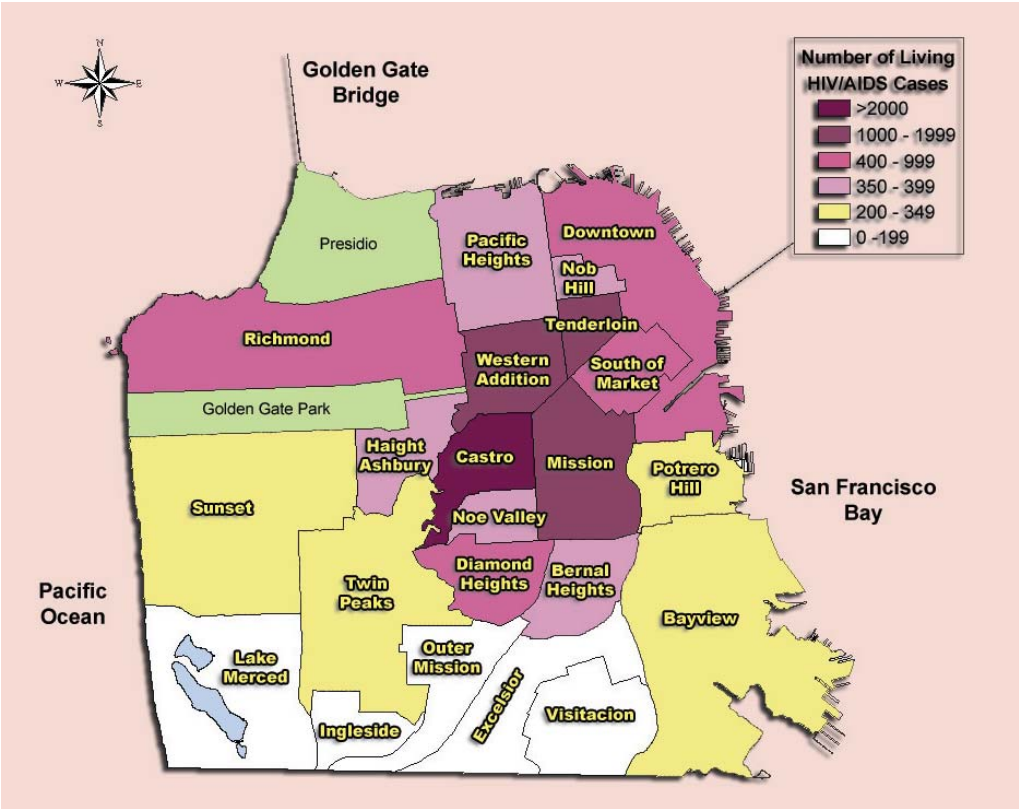
Figure 18.1 Time to entry into care among HIV cases diagnosed between July 2006 and June 2007, San Francisco



19 Geographic Distribution of HIV/AIDS

Map 19.1 shows the geographic distribution of persons living with HIV/AIDS by neighborhoods in San Francisco. Data include persons who were residents of San Francisco at the time of either their HIV or AIDS diagnosis and who were known to be alive on December 31, 2007. The most severely affected neighborhoods are the Castro, Tenderloin, Western Addition and Mission. The adjacent areas including South of Market, Nob Hill, Haight Ashbury, Noe Valley, Diamond Heights and Bernal Heights also have large numbers of persons living with HIV/AIDS.

Map 19.1 Distribution of persons living with HIV/AIDS, December 2007, San Francisco



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 race/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 1998-2007 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, 2005. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2005, 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 occur-

ring 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. Because information about transgender status was not collected in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

D Data Tables

	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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2048	2284	2327	2074	1787	1562	1082	808	694	580
Deaths	1364	1505	1641	1599	1592	1483	987	422	400	355
Persons Living with AIDS	4336	5115	5801	6276	6471	6550	6645	7031	7325	7550

	2000	2001	2002	2003	2004	2005	2006	2007
Cases	551	504	493	549	470	450	413	309
Deaths	348	322	322	301	304	315	213	184
Persons Living with AIDS	7753	7935	8106	8354	8520	8655	8855	8980

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	445	340	320	293	294	282	263	262	235	191
African American	141	105	111	100	86	104	77	79	76	55
Latino	76	103	88	70	75	120	102	81	71	45
Other	32	32	32	41	38	43	28	28	31	18

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	236	179	161	147	147	141	128	131	116	95
African American	348	243	253	238	220	246	187	206	196	129
Latino	125	160	129	106	109	181	159	118	109	64
Other	24	23	23	28	25	31	19	17	20	12

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	11	8	12	9	7	5	8	6	5	2
African American	86	75	72	69	44	74	56	43	47	44
Latina	6	14	17	8	10	10	14	16	8	10
Other	2	3	1	3	3	2	1	4	3	1

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
MSM	434	353	327	303	299	348	302	274	263	192
IDU	59	48	53	42	43	58	27	39	26	24
MSM IDU	128	93	86	76	84	62	70	70	62	42
Other	6	20	12	24	14	18	17	18	20	18

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
IDU	34	34	36	30	23	25	28	19	20	9
Heterosexual	12	12	14	10	9	12	7	14	8	13
Other	4	2	2	5	3	2	4	3	2	1

	2000	2001	2002	2003	2004	2005
HIV/AIDS	162	162	145	140	127	114
Accident	113	113	94	95	78	92
Heart disease	80	91	104	107	75	82
Non-AIDS cancer	107	109	90	89	84	79
Mental disorder	35	50	50	47	59	58
Suicide	42	43	42	57	44	41
Homicide	20	26	19	27	34	34
Liver disease	34	37	24	26	22	28
Cerebrovascular	20	12	15	15	18	17
COPD	14	13	10	9	4	10

	2000	2001	2002	2003	2004	2005
Non-AIDS cancer	69	69	69	78	81	80
Accident	27	37	22	27	30	31
Heart disease	32	27	31	30	23	28
Mental disorder	10	7	12	16	8	23
HIV/AIDS	25	24	25	28	23	20
Cerebrovascular	8	2	11	13	5	14
Suicide	9	15	9	14	13	11
Liver disease	5	9	13	4	7	5
Homicide	5	11	6	4	2	4
COPD*	10	5	6	6	7	3

	White	African American	Latino
HIV/AIDS	55	170	46
Heart disease	27	147	25
Non-AIDS cancer	24	108	6
Accident	40	154	25

	15-19	20-24	25-34	35-44	45-54	55-64
HIV/AIDS	0	0	7	51	108	74
Heart Disease	0	0	4	23	99	222
Accident	7	12	20	33	77	94
Non-AIDS Cancer	0	6	6	22	94	311
Mental Disorder	7	0	3	21	63	64
Suicide	7	12	20	13	77	20

Male	2002	2003	2004	2005	2006	2007
Public	22%	22%	25%	31%	25%	29%
Private	42%	44%	46%	43%	45%	44%
None	33%	33%	27%	24%	27%	24%

Female	2002	2003	2004	2005	2006	2007
Public	40%	56%	64%	53%	70%	78%
Private	11%	10%	8%	22%	13%	13%
None	43%	31%	26%	25%	17%	9%

Transgender	2002	2003	2004	2005	2006	2007
Public	22%	38%	67%	62%	75%	40%
Private	17%	4%	0%	0%	8%	0%
None	56%	54%	33%	38%	17%	60%

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	579	464	432	393	400	434	387	357	337	243
Deaths	323	284	283	249	249	231	232	237	167	139
Persons Living with AIDS	6433	6613	6762	6906	7057	7260	7415	7535	7705	7809

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	402	296	282	258	260	248	241	226	211	168
African American	78	58	52	48	42	52	39	45	42	23
Latino	72	83	71	56	67	102	86	66	59	37
Other	27	27	27	31	31	32	21	20	25	15

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

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

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Primary	3	3	13	45	96	105	118	70	75	60
Secondary	2	19	27	71	193	213	205	147	143	122
Early Latent	4	9	12	36	151	158	179	159	151	135

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	93	82	91	72	67	83	55	58	46	33
Deaths	66	64	52	60	58	60	59	62	38	38
Persons Living with AIDS	689	707	746	758	767	790	786	782	790	785

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	35	37	33	29	26	31	16	28	19	14
African American	52	37	48	36	36	36	29	24	20	16
Latino	4	5	8	5	2	12	8	5	6	2
Other	2	3	2	2	3	4	2	1	1	1

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	13	18	18	17	14	19	16	20	18	25
Deaths	3	4	4	8	9	6	5	7	4	4
Persons Living with AIDS	115	129	143	152	157	170	181	194	208	229

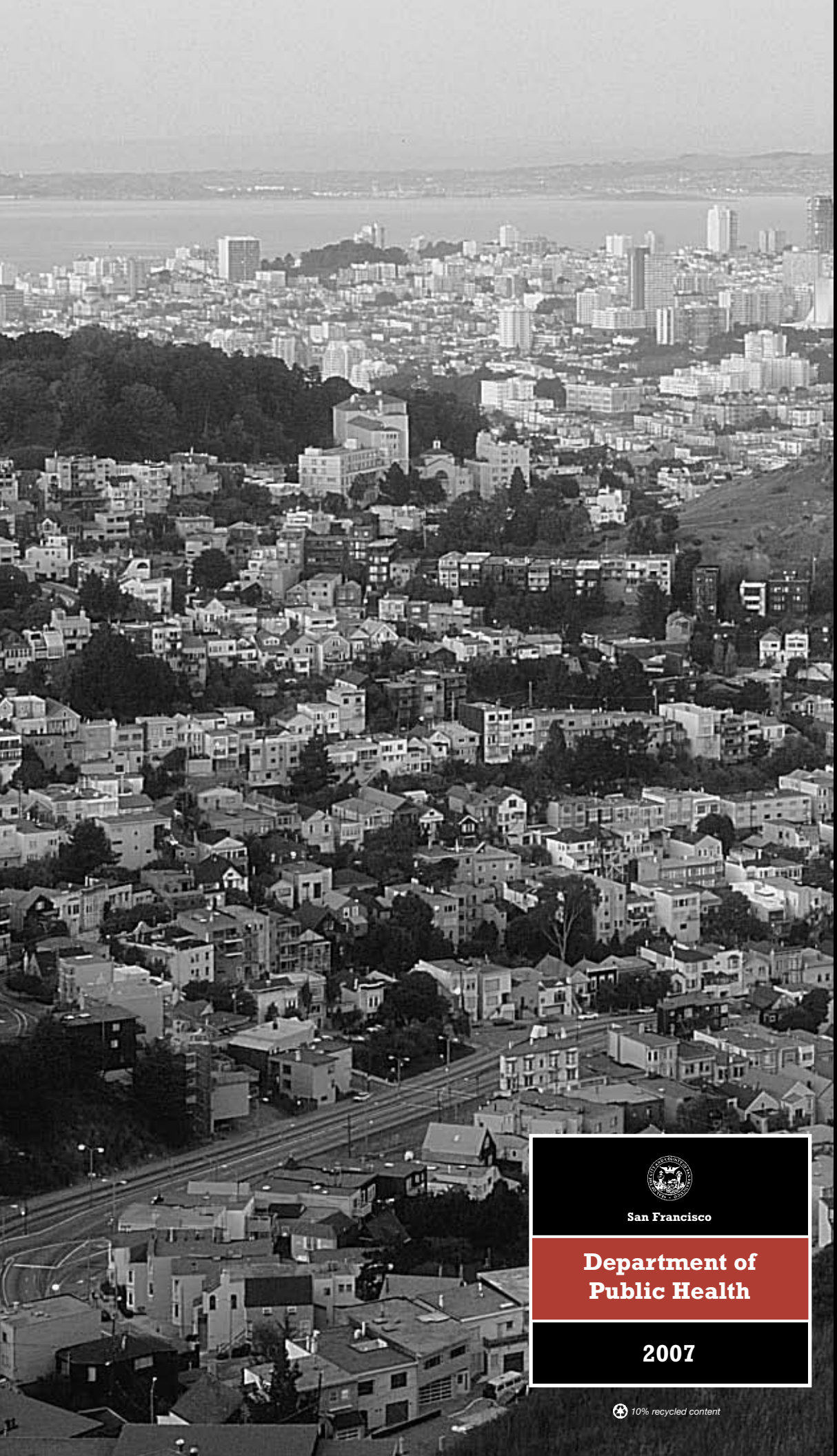
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	5	3	3	2	4	3	4	3	1	2
African American	7	8	9	10	5	12	4	6	8	15
Latino	0	6	5	2	2	3	5	7	5	6
Other	1	1	1	3	3	1	3	4	4	2

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	50	48	52	45	36	39	39	36	30	23
Deaths	23	34	25	26	29	28	23	27	25	16
Persons Living with AIDS	390	404	431	450	457	468	484	493	498	505

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	17	13	19	15	13	8	13	10	8	4
African American	28	24	23	22	14	23	17	13	14	13
Latina	3	7	9	4	5	5	7	8	4	5
Other	2	4	1	4	4	3	2	5	4	1

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
HIV Infected	5	5	2	0	3	1	0	0	2	1	1	0	0	0
Seroreverted	12	14	9	11	9	9	12	16	9	16	6	7	8	5
Status Unknown	2	1	0	0	1	0	0	0	0	0	0	0	0	0

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	17	18	21	14	18	24	15	13	12	10
Deaths	7	6	12	15	9	9	12	11	9	7
Persons Living with AIDS	139	151	160	159	168	183	186	188	191	194



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Department of Public Health

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