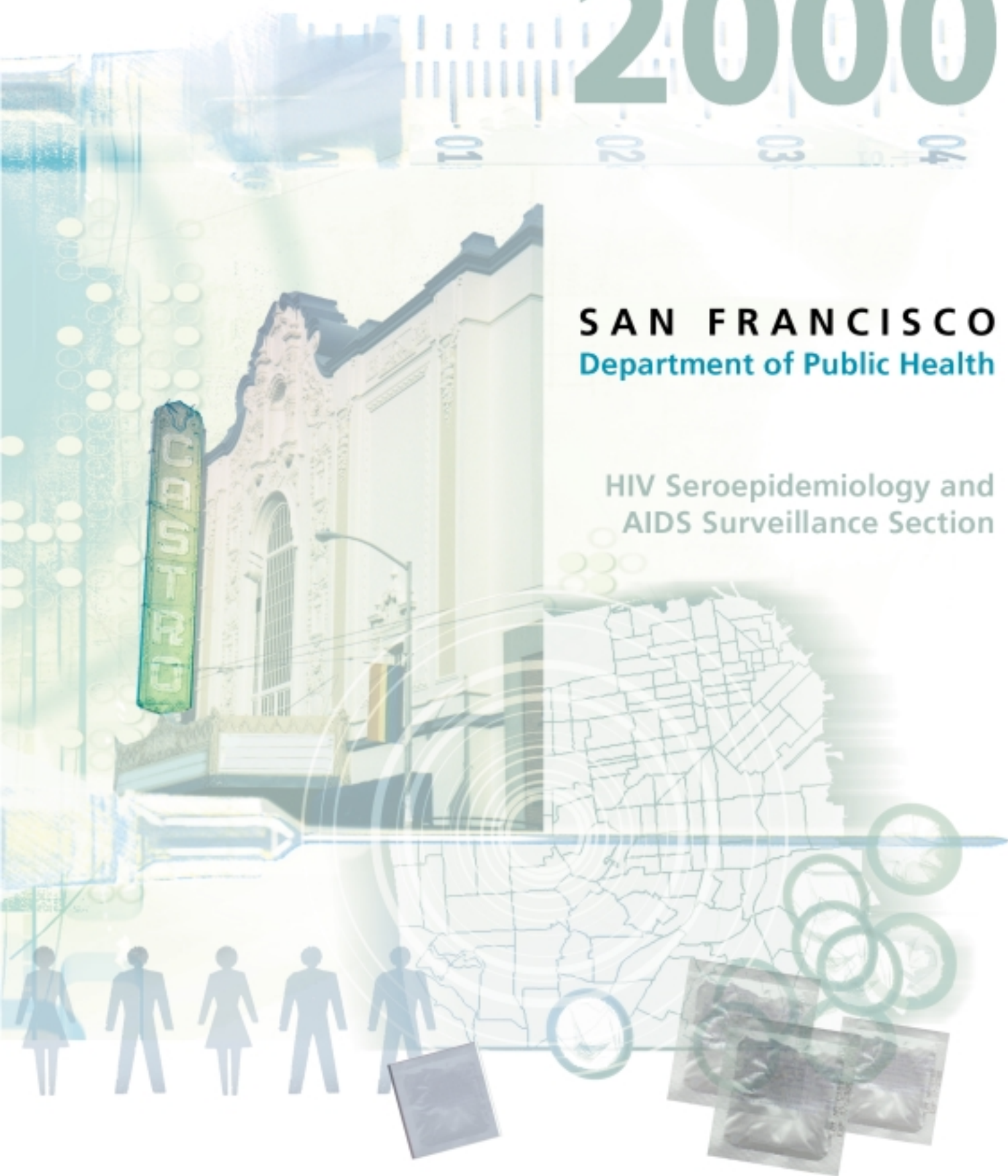


# HIV/AIDS Epidemiology Annual Report

# 2000

**SAN FRANCISCO**  
Department of Public Health

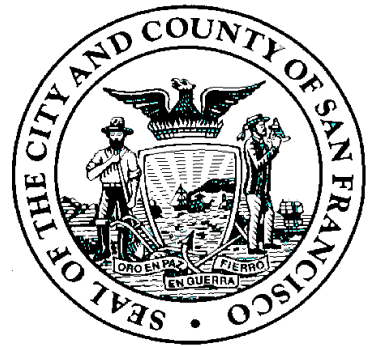
HIV Seroepidemiology and  
AIDS Surveillance Section



# HIV/AIDS Epidemiology Annual Report

# 2000

**SAN FRANCISCO**  
Department of Public Health



HIV Seroepidemiology and  
AIDS Surveillance Section

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# Contents

<b>Contents .....</b>	<b>1</b>
<b>List of Figures, Tables, and Maps .....</b>	<b>2</b>
<b>Executive Summary .....</b>	<b>7</b>
<b>1. Overview of HIV/AIDS in San Francisco .....</b>	<b>9</b>
<b>2. Trends in AIDS Incidence .....</b>	<b>12</b>
<b>3. Trends in AIDS Deaths .....</b>	<b>15</b>
<b>4. AIDS Survival .....</b>	<b>16</b>
<b>5. Causes of Death among Persons with AIDS .....</b>	<b>18</b>
<b>6. Persons Living with AIDS .....</b>	<b>20</b>
<b>7. HAART among Persons Living with AIDS .....</b>	<b>21</b>
<b>8. Insurance Status at AIDS Diagnosis .....</b>	<b>22</b>
<b>9. AIDS Opportunistic Illnesses .....</b>	<b>23</b>
<b>10. HIV/AIDS among Men Who Have Sex with Men .....</b>	<b>24</b>
<b>11. HIV/AIDS among Injection Drug Users .....</b>	<b>30</b>
<b>12. HIV/AIDS among Heterosexuals .....</b>	<b>33</b>
<b>13. HIV/AIDS among Women .....</b>	<b>36</b>
<b>14. HIV/AIDS among Adolescents and Young Adults .....</b>	<b>39</b>
<b>15. HIV/AIDS among Children .....</b>	<b>40</b>
<b>16. HIV/AIDS among Transgender Persons .....</b>	<b>43</b>
<b>17. Homeless Persons with AIDS .....</b>	<b>45</b>
<b>18. Sexually Transmitted Diseases and HIV Infection .....</b>	<b>46</b>
<b>19. Tuberculosis Screening among Persons with AIDS .....</b>	<b>47</b>
<b>20. Geographic Distribution of AIDS .....</b>	<b>48</b>
<b>Technical Notes .....</b>	<b>53</b>
<b>Bibliography .....</b>	<b>57</b>



# List of Figures, Tables, and Maps

Table 1.1	Characteristics of cumulative AIDS cases in San Francisco, California, and the United States .....	9
Table 1.2	Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2000, San Francisco .....	10
Table 1.3	Estimates of population size, HIV prevalence, and HIV incidence, 2001 HIV Consensus Meeting, San Francisco .....	11
Figure 2.1	Percent of AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000 .....	12
Figure 2.2	Male annual AIDS incidence rates per 100,000 population by race/ethnicity, San Francisco, 1991-2000 .....	12
Figure 2.3	Female annual AIDS incidence rates per 100,000 population by race/ethnicity, San Francisco, 1991-2000 .....	13
Figure 2.4	Percent of male AIDS cases by exposure category and year of diagnosis, San Francisco, 1991-2000 .....	13
Figure 2.5	Percent of female AIDS cases by exposure category and year of diagnosis, San Francisco, 1991-2000 .....	14
Table 2.1	AIDS cases by gender and age at diagnosis, diagnosed 1991-2000, and cumulative totals through December 2000, San Francisco .....	14
Table 3.1	Number of AIDS deaths that occurred between 1996 and 2000, and percent change in AIDS deaths, by gender, race/ethnicity, and risk, San Francisco .....	15
Figure 4.1	Trends in median months of survival after AIDS opportunistic illness diagnosis, San Francisco, 1987-1996 .....	16
Table 4.1	Trends in median months of survival after AIDS opportunistic illness diagnosis by gender, race/ethnicity, and risk, San Francisco, 1987-1998 .....	17
Figure 5.1	Percent of HIV/AIDS listed as cause of death on death certificate among persons reported with AIDS by year of death, San Francisco, 1987-1998 .....	18
Table 5.1	Underlying causes of death among persons with AIDS, San Francisco, 1987-1998 ....	19
Table 6.1	Persons living with AIDS by demographic and risk characteristics, San Francisco, 1997-2000 .....	20

Figure 7.1	Use of HIV antiretrovirals and HAART among persons living with AIDS by year, San Francisco, 1996-2000 .....	21
Figure 7.2	Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk, San Francisco, December 2000 .....	21
Figure 8.1	AIDS cases by gender and insurance status at diagnosis, San Francisco, 1994-2000 ..	22
Figure 8.2	Male and female AIDS cases by insurance status and year of diagnosis, San Francisco, 1994-2000 .....	22
Table 9.1	Number of AIDS opportunistic illnesses diagnosed between 1996 and 2000, San Francisco .....	23
Figure 10.1	Percent of AIDS cases among MSM by race/ethnicity and year of diagnosis, San Francisco, 1991-2000 .....	24
Figure 10.2	AIDS cases, deaths, and prevalence among white MSM by year, San Francisco, 1991-2000 .....	25
Figure 10.3	AIDS cases, deaths, and prevalence among nonwhite MSM by year, San Francisco, 1991-2000 .....	25
Figure 10.4	HIV prevalence and incidence among MSM attending an STD clinic by year, San Francisco, 1989-1999 .....	26
Figure 10.5	HIV prevalence among MSM attending an STD clinic by race/ethnicity and year, San Francisco, 1989-1999 .....	26
Figure 10.6	HIV prevalence and incidence among MSM at anonymous testing sites by year, San Francisco, 1996-1999 .....	27
Figure 10.7	HIV prevalence and incidence among MSM at anonymous testing sites by race/ethnicity, San Francisco, 1996-1999 .....	27
Figure 10.8	HIV incidence among MSM testing at San Francisco General Hospital by year, 1994-1998 .....	28
Figure 10.9	HIV incidence among MSM testing at San Francisco General Hospital by race/ethnicity, 1994-1998 .....	28
Figure 10.10	Percent of MSM reporting multiple partners and unprotected anal intercourse, STOP AIDS Project, 1994-2000 .....	29
Figure 10.11	Percent of MSM reporting 100% condom use, STOP AIDS Project, 1994-2000 .....	29



Figure 11.1	AIDS cases, deaths, and prevalence among heterosexual IDU by year, San Francisco, 1991-2000 .....	30
Figure 11.2	AIDS cases among heterosexual IDU by race/ethnicity and year of diagnosis, San Francisco, 1991-2000 .....	30
Table 11.1	Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2000, San Francisco .....	31
Figure 11.3	HIV prevalence and incidence among heterosexual IDU attending an STD clinic by year, San Francisco, 1989-1999 .....	31
Figure 11.4	HIV incidence among heterosexual IDU testing at San Francisco General Hospital by year, 1994-1998 .....	32
Figure 11.5	HIV incidence among heterosexual IDU testing at San Francisco General Hospital by race/ethnicity, 1994-1998 .....	32
Figure 12.1	AIDS cases, deaths, and prevalence among heterosexuals by year, San Francisco, 1991-2000 .....	33
Figure 12.2	AIDS cases among heterosexuals by race/ethnicity and year of diagnosis, San Francisco, 1991-2000 .....	33
Table 12.1	Heterosexually transmitted AIDS by exposure category and gender, diagnosed through December 2000, San Francisco .....	34
Figure 12.3	HIV prevalence and incidence among heterosexuals attending an STD clinic by year, San Francisco, 1989-1999 .....	34
Figure 12.4	HIV incidence among heterosexuals testing at San Francisco General Hospital by year, 1994-1998 .....	35
Figure 12.5	HIV incidence among heterosexuals testing at San Francisco General Hospital by race/ethnicity, 1994-1998 .....	35
Figure 13.1	Female AIDS cases diagnosed through December 2000 and female population by race/ethnicity, San Francisco .....	36
Figure 13.2	Number of female AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000 .....	36
Figure 13.3	HIV prevalence and incidence among women attending an STD clinic, San Francisco, 1989-1999 .....	37

Figure 13.4	HIV prevalence among newborn infants and their mothers, San Francisco, 1989-1998 .....	37
Table 13.1	Prevalence of selected high-risk sexual and injection drug use behaviors among young women in low-income neighborhoods by gender of lifetime sexual partners .....	38
Table 14.1	Adolescent and young adult AIDS cases by risk, gender, and race/ethnicity, diagnosed through December 2000, San Francisco .....	39
Figure 14.1	Adolescent AIDS cases diagnosed through December 2000 and San Francisco adolescent population by race/ethnicity .....	39
Table 15.1	Percent of cumulative pediatric AIDS cases by exposure category, gender, and race/ethnicity, San Francisco, December 2000 .....	40
Figure 15.1	Pediatric AIDS cases, diagnosed through December 2000, and San Francisco population by race/ethnicity .....	40
Figure 15.2	Perinatally acquired AIDS cases by mother's exposure category, diagnosed through December 2000, San Francisco .....	41
Table 15.2	Infants born to HIV-infected mothers by infant's HIV status and race/ethnicity, San Francisco, through 2000 .....	41
Figure 15.3	Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1991-2000 .....	42
Table 16.1	Characteristics of transgender AIDS cases and cumulative AIDS cases diagnosed through December 2000, San Francisco .....	43
Figure 16.1	HIV prevalence and incidence among transgendered persons testing at HIV confidential and anonymous testing sites, July 1997-June 2000 .....	44
Figure 17.1	Percent of homeless AIDS cases by year of diagnosis, San Francisco, 1990-2000 .....	45
Table 17.1	Characteristics of homeless AIDS cases and AIDS cases diagnosed between 1990 and 2000, San Francisco .....	45
Figure 18.1	HIV prevalence and incidence among STD clinic patients diagnosed with gonorrhea by year, San Francisco, 1990-1999 .....	46
Figure 19.1	TB testing among AIDS cases diagnosed in 1996-1997, San Francisco .....	47
Table 19.1	Percent of persons diagnosed with AIDS in 1996-1997 who had been tested for TB within one year of HIV infection, San Francisco .....	47

Map 20.1	AIDS density among MSM in San Francisco, 2000 .....	48
Map 20.2	AIDS density among MSM-IDU in San Francisco, 2000 .....	49
Map 20.3	AIDS density among non-MSM IDU in San Francisco, 2000 .....	50
Map 20.4	AIDS density among heterosexuals in San Francisco, 2000 .....	51

## E

# Executive Summary

The face of AIDS changed dramatically in 1995, the year that protease inhibitors first became available. Protease inhibitors, used in combination with other antiretroviral agents, contributed to the first observed decline in AIDS deaths in 1995 and to the continued annual decline in AIDS deaths since then.

Coupled with declines in AIDS deaths have been decreases in the incidence of AIDS. The number of new AIDS diagnoses in San Francisco peaked in 1992 and has declined each year since then. The first decline in the incidence of AIDS is likely to be a reflection of the HIV/AIDS epidemic in San Francisco in which the peak in the number of new HIV infections is thought to have occurred in the early 1980s. However, recent declines in new AIDS diagnoses are likely to also be due to use of these highly active antiretroviral therapies (HAART) which delay the progression of HIV infection to AIDS.

Perhaps the most remarkable change in recent years has been the increase in the months of survival after AIDS diagnosis. At the beginning of the AIDS epidemic, persons who were diagnosed with AIDS died within a short time of diagnosis. By the late 1980s and early 1990s, persons diagnosed with AIDS could expect to live approximately one and a half years after their diagnosis. For persons diagnosed in recent years (1995-1998) the median survival is close to 5 years. This estimate may be low because of delays in the reporting of deaths. Thus persons with recently diagnosed AIDS may expect even greater survival than observed among persons who were diagnosed between 1995 and 1998.

Although improvements in survival have occurred among all racial, ethnic, and risk groups, not all groups have benefited to the same extent. For example, among persons diagnosed with AIDS between 1995 and 1998, survival was greater for men (median survival of 59 months) than for women (median survival 56 months), and for whites (median survival 62 months) and Latinos (median survival 65 months) than for African Americans (median survival 43 months). Survival was greater for men who have sex with men (MSM) (median survival 63 months) than for injection drug users (IDU) (median survival for MSM-IDU was 45 months and for heterosexual IDU the median survival was 37 months).

The disparity in survival may reflect differences in access to care in general and to use of HAART specifically. Uptake of HAART was rapid among persons diagnosed with AIDS in San Francisco. In 1996, 42% of persons living with AIDS had used HAART. By the end of 2000, this percent had increased to 66%. Because there is a delay in the reporting of HAART use, the true proportion of persons living with AIDS who have received HAART is likely to be greater than 66%. However, as with survival, disparities in HAART use have been observed. Among persons living with AIDS at the end of 2000, 67% of men had used HAART compared to 58% of women and 57% of transgendered persons. HAART use was less frequent among African Americans (60%) and among injection drug users. Sixty-two percent of MSM-IDU and 54% of heterosexual IDU were noted to have used HAART.

Given the established survival benefit of HAART, and the current recommendations for persons with advanced HIV disease to receive HAART, efforts to understand and overcome disparities in HAART use should be developed. San Francisco has placed a high value on providing state of the art care for persons with AIDS, including the provision of therapies to all those for whom therapy is clinically indicated, without regard to income or demographic characteristics. Effort to ensure equal access to beneficial therapies for persons with AIDS must be increased.

Although the improvement in AIDS survival associated with improved HIV/AIDS treatments is laudable, there appear to be some paradoxical effects. The fact that AIDS deaths have declined more than AIDS incidence has resulted in an increased number of persons living with AIDS in San Francisco. With improved therapy, persons with HIV/AIDS are experiencing improved functional status. This may be a contributing factor to increases in unsafe sexual behaviors and increases in new HIV infections, particularly among MSM, the group affected most severely in San Francisco. While HAART has improved conditions for HIV infected persons, it is not a cure. Efforts to prevent unnecessary illness and death through primary prevention of HIV must be vigorously pursued. In particular, our public health message must emphasize that even though HIV treatment works, it is better to stay HIV-negative.

## 1

# Overview of HIV/AIDS in San Francisco

As of December 31, 2000, a cumulative total of 27,422 AIDS cases were diagnosed in San Francisco. This comprises 23% of California AIDS cases and four percent of cases reported nationally. As of June 2000, San Francisco ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide. Compared to 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 (MSM-IDU) (Table 1.1).

**Table 1.1 Characteristics of cumulative AIDS cases in San Francisco, California, and the United States<sup>#</sup>**

	San Francisco (N=27,422)		California (N = 119,900)	United States (N = 753,907)
	Number	%	%	%
<b>Gender</b>				
Male	26,145	95%	93%	83%
Female	1,028	4%	7%	17%
Transgender*	249	1%	--	--
<b>Race/Ethnicity</b>				
White	20,321	74%	60%	43%
African American	3,298	12%	17%	38%
Latino	2,899	11%	20%	18%
Asian/Pacific Islander	775	3%	2%	< 1%
Native American	129	<1%	< 1%	< 1%
<b>Exposure Category</b>				
MSM	21,156	77%	70%	46%
IDU	1,910	7%	10%	25%
MSM-IDU	3,478	13%	9%	6%
Heterosexual	372	1%	5%	10%
Transfusion/Hemophilia	266	1%	2%	2%
Other/Risk not reported or identified	240	1%	4%	10%

<sup>#</sup> San Francisco data are reported through February 2001 for cases diagnosed through December 2000; California data are reported through December 2000; U.S. data are reported through June 2000.

\* The Transgender category includes 245 male-to-female and 4 female-to-male persons with AIDS. Transgender data are not reported by California and the United States. See Technical Notes "Transgender Status."

MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 1.2). Among African American men, heterosexual injection drug use is the second most frequent exposure category while MSM-IDU represents the second most frequent exposure among men of all other race/ethnic groups. Less than or equal to one percent of men acquired their infection through heterosexual contact.

The most frequent exposure category among white, African American, Latino, and Native American women with AIDS is injection drug use, followed by heterosexual contact. Among Asian/Pacific Islander women, 42% acquired their infection through heterosexual contact, 31% through injection drug use, and 23% through transfusion of blood or blood products.

**Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2000, San Francisco**

	<b>White</b> <b>Number (%)</b>	<b>African</b> <b>American</b> <b>Number (%)</b>	<b>Latino</b> <b>Number (%)</b>	<b>Asian/Pacific</b> <b>Islander</b> <b>Number (%)</b>	<b>Native</b> <b>American</b> <b>Number (%)</b>
<b>Male</b>					
MSM	16,727 ( 84 )	1,541 ( 56 )	2,127 ( 79 )	580 ( 84 )	65 ( 57 )
IDU	477 ( 2 )	631 ( 23 )	173 ( 6 )	20 ( 3 )	9 ( 8 )
MSM-IDU	2,478 ( 12 )	501 ( 18 )	297 ( 11 )	42 ( 6 )	38 ( 33 )
Heterosexual	34 ( <1 )	29 ( 1 )	15 ( 1 )	5 ( 1 )	0 ( 0 )
Transfusion/ Hemophilia	103 ( 1 )	18 ( 1 )	29 ( 1 )	26 ( 4 )	0 ( 0 )
Other/Unidentified	62 ( <1 )	45 ( 2 )	54 ( 2 )	16 ( 2 )	3 ( 3 )
<b>Male Subtotal</b>	<b>19,881</b>	<b>2,765</b>	<b>2,695</b>	<b>689</b>	<b>115</b>
<b>Female</b>					
IDU	195 ( 53 )	307 ( 68 )	58 ( 43 )	20 ( 31 )	11 ( 92 )
Heterosexual	108 ( 30 )	99 ( 22 )	52 ( 39 )	27 ( 42 )	1 ( 8 )
Transfusion/ Hemophilia	45 ( 12 )	17 ( 4 )	13 ( 10 )	15 ( 23 )	0 ( 0 )
Other/Unidentified	18 ( 5 )	29 ( 6 )	11 ( 8 )	2 ( 3 )	0 ( 0 )
<b>Female Subtotal</b>	<b>366</b>	<b>452</b>	<b>134</b>	<b>64</b>	<b>12</b>
<b>Transgender</b>	<b>74</b>	<b>81</b>	<b>70</b>	<b>#</b>	<b>#</b>

# There were a total of 24 transgender persons of Asian/Pacific Islander and Native American race/ethnicity. The number of transgender Native Americans with AIDS was less than five.

In May 2000 and again in January and February of 2001, a panel of local epidemiologists, researchers, and community representatives met to review recent data on HIV prevalence, incidence and related risk behavior in San Francisco.

The panel concluded that there are currently 46,800 MSM in San Francisco, including 12,786 living with HIV (27.3% prevalence) (Table 1.3). Of 34,014 uninfected MSM, a projected 748 will acquire HIV infection this year for an incidence rate of 2.2% per year. Prevalence and incidence of HIV among 3,982 MSM-IDU was higher: 53.4% and 4.6% per year, respectively. Estimates among MSM and MSM-IDU are substantially higher than 1997 - a rise corroborated by data on risk behavior and sexually transmitted diseases.

Among non-MSM, HIV incidence has been relatively level or slightly decreasing since 1997. Among 13,850 female and male non-MSM IDU, HIV prevalence is estimated at 10.0%. An expected 48 female IDU and 45 non-MSM male IDU will seroconvert this year. HIV prevalence and incidence among heterosexuals in San Francisco remains relatively low.

For the first time, HIV prevalence and incidence data were available for transgendered females (MTF). HIV prevalence and incidence among MTF and MTF-IDU are dismayingly high. Among 3,000 MTF and MTF-IDU, overall HIV prevalence was estimated at 35.0% and HIV incidence at 7.3% per year.

**Table 1.3** Estimates of population size, HIV prevalence, and HIV incidence, 2001 HIV Consensus Meeting, San Francisco

Population*	Estimated Size of Population at Risk (HIV- on 1/01/01)	HIV Prevalence, Estimated Number Living with HIV (HIV+ on 1/01/01)	HIV Incidence, Projected Number Acquiring HIV (1/01/01 to 12/31/01)
<b>MSM</b>	34,014	12,786	748
<b>MSM-IDU</b>	1,902	2,080	87
<b>MSF-IDU</b>	8,100	900	45
<b>Female-IDU</b>	4,365	485	48
<b>MSF</b>	2,000	82	2
<b>FSM</b>	5,000	334	10
<b>MTF</b>	1,647	513	102
<b>MTF-IDU</b>	303	537	40
<b>Children</b>	22	60	2
<b>Blood products</b>	—	61	0
<b>Total</b>	<b>—</b>	<b>17,838</b>	<b>1,084</b>

\* Populations are based on definitions of the HIV Prevention Planning Council.

MSM: men who report having sex with men regardless of sexual identity

MSM-IDU: MSM who also report injecting drugs

MSF-IDU: men who report injecting drugs but not male-male sex

Female-IDU: women who report injecting drugs

MSF: presumptive heterosexual transmission to men who do not report male-male sex or injection drug use

FSM: presumptive heterosexual transmission to women who do not report injection drug use

MTF: male-to-female transgendered persons regardless of gender reassignment surgery or gender of their sex partners

MTF-IDU: MTF who report injection drug use, excluding hormonal injection

Children: persons exposed or infected through perinatal HIV transmission, regardless of current age

Blood products: men, women, and children infected with HIV through transfusion of blood products or occupational exposure



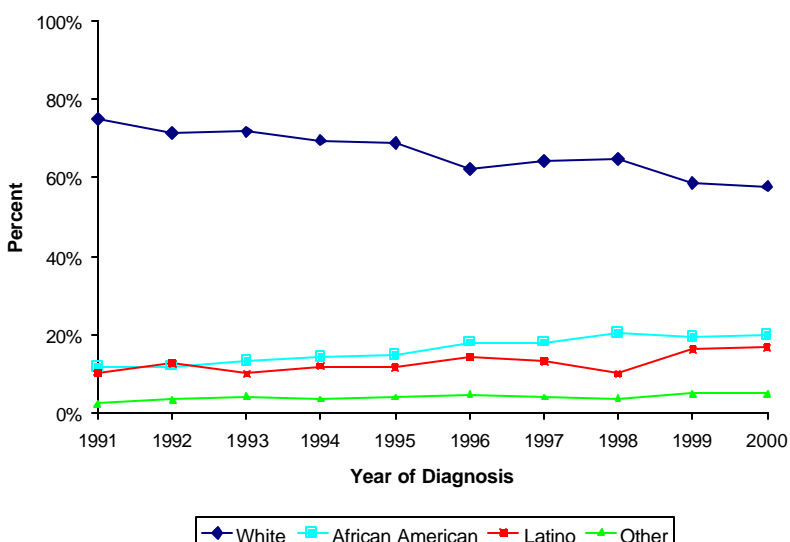
## 2

## Trends in AIDS Incidence

## Race/ethnicity

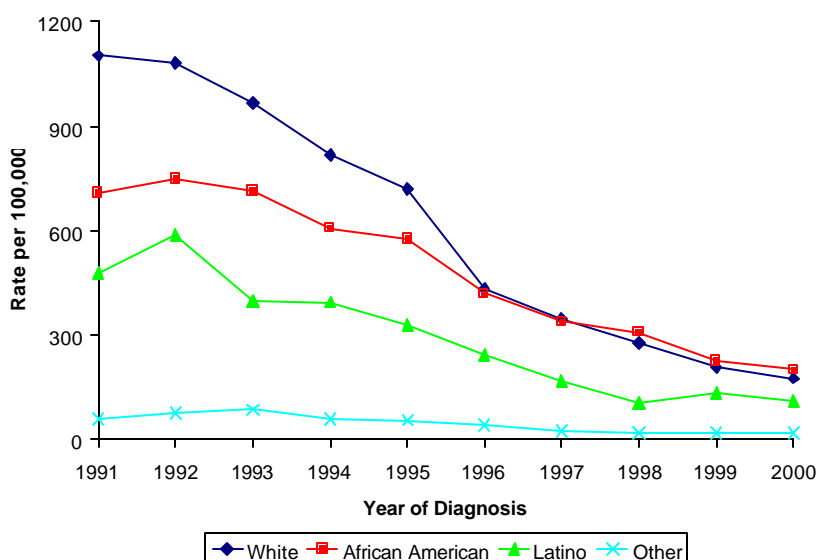
AIDS cases in San Francisco have occurred predominantly among whites. However, the proportion of AIDS cases among nonwhites, particularly African Americans, has been increasing since 1991. The distribution of AIDS cases by race/ethnicity has been relatively stable between 1999 and 2000 (Figure 2.1).

**Figure 2.1** Percent of AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



The incidence rate of AIDS among men of all race/ethnic groups peaked in 1992 and has declined through 2000 (Figure 2.2). In 1998, the incidence rate of AIDS among African American men first exceeded that of white men and that difference has persisted. In 2000, the incidence rate of AIDS per 100,000 population among African American men was 202 and 177 among white men.

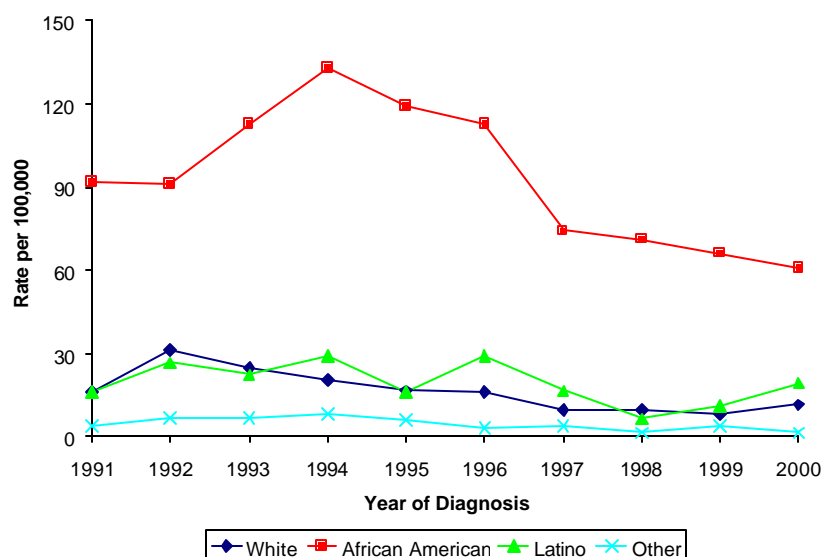
**Figure 2.2** Male annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1991-2000



\* Excludes 245 male-to-female transgender cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rate" for rate calculations.

Among women, the incidence rate of AIDS peaked in 1994 (Figure 2.3), two years later than the peak incidence among men. Compared to other women, African American women have been disproportionately affected by AIDS throughout the AIDS epidemic. In 2000, the incidence rate among African American women was 61 per 100,000; three times greater than the rate among Latino women, and six times greater than the rate among white women.

**Figure 2.3 Female annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1991-2000**

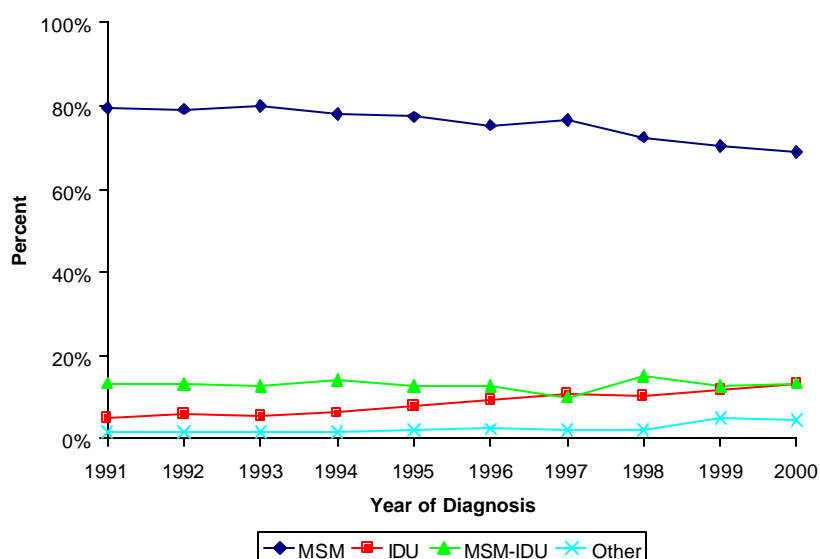


\* Excludes 4 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

## Exposure category

The greatest proportion of male AIDS cases has occurred among MSM (Figure 2.4). Although there has been a small decline in the proportion of male AIDS cases among MSM, the vast majority (69%) of male cases occurred among MSM in 2000, only slightly lower than the percent in 1999 (71%). MSM-IDU accounted for 13% of AIDS cases in both 1999 and 2000. The proportion of male AIDS cases among heterosexual IDU has increased from 5% in 1991 to 13% in 2000.

**Figure 2.4 Percent of male AIDS cases\* by exposure category and year of diagnosis, San Francisco, 1991-2000**



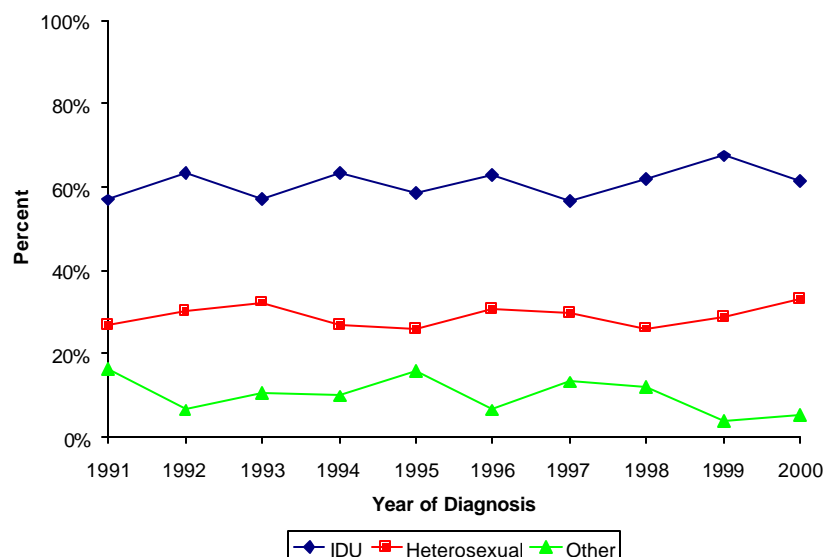
\* Excludes 245 male-to-female transgender cases. See Technical Notes "Transgender Status."

Among women with AIDS, exposure has been attributed primarily to injection drug use followed by heterosexual transmission (Figure 2.5). In 2000, 61% of female AIDS cases occurred among IDU.

## Age

The largest number of men and women with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). AIDS has been diagnosed more frequently among younger women (aged 20-29 years) than among younger men. Although the age at diagnosis has been relatively stable, there appears to be a small increase in the percent of men and women diagnosed with AIDS in the older age group (over 40 years). This likely reflects the use of effective therapies for HIV infection, which have extended the time from acquiring HIV infection to the development of AIDS.

**Figure 2.5** Percent of female AIDS cases\* by exposure category and year of diagnosis, San Francisco, 1991-2000



\* Excludes 4 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status."

**Table 2.1** AIDS cases by gender\* and age at diagnosis, diagnosed 1991-2000, and cumulative totals through December 2000, San Francisco

	1991 - 1993	1994 - 1996	1997 - 2000	Cumulative Totals
	Number (%)	Number (%)	Number (%)	Number (%)
<b>Male</b>				
0 - 19	16 ( <1 )	10 ( <1 )	11 ( <1 )	63 ( <1 )
20 - 29	851 ( 12 )	460 ( 10 )	230 ( 9 )	3,035 ( 12 )
30 - 39	3,228 ( 45 )	2,065 ( 45 )	1,071 ( 43 )	12,035 ( 46 )
40 - 49	2,306 ( 32 )	1,497 ( 33 )	825 ( 33 )	8,075 ( 31 )
50+	817 ( 11 )	550 ( 12 )	342 ( 14 )	2,937 ( 11 )
<b>Male Subtotal</b>	<b>7,218 ( 100 )</b>	<b>4,582 ( 100 )</b>	<b>2,479 ( 100 )</b>	<b>26,145 ( 100 )</b>
<b>Female</b>				
0 - 19	5 ( 2 )	8 ( 3 )	8 ( 4 )	36 ( 4 )
20 - 29	53 ( 18 )	43 ( 15 )	25 ( 11 )	154 ( 15 )
30 - 39	137 ( 48 )	116 ( 40 )	78 ( 36 )	413 ( 40 )
40 - 49	60 ( 21 )	97 ( 33 )	81 ( 37 )	289 ( 28 )
50+	33 ( 11 )	28 ( 10 )	27 ( 12 )	136 ( 13 )
<b>Female Subtotal</b>	<b>288 ( 100 )</b>	<b>292 ( 100 )</b>	<b>219 ( 100 )</b>	<b>1,028 ( 100 )</b>

\* Excludes 249 transgender cases. We cannot analyze temporal trends in AIDS cases by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

## 3

## Trends in AIDS Deaths

A total of 18,549 AIDS deaths have occurred in San Francisco as of December 31, 2000. The number of deaths among persons with AIDS first declined in 1995. The decline in deaths among persons with AIDS has continued through 2000. The greatest decline in deaths occurred between 1996 and 1997 in which AIDS deaths decreased by 59% (Table 3.1). Since then the decline in the number of deaths each year has been much smaller. The decrease in AIDS deaths can be attributed to the availability of highly active antiretroviral therapies in late 1995. The decline in deaths between 1996 and 2000 occurred among all demographic and risk groups.

**Table 3.1** Number of AIDS deaths that occurred between 1996 and 2000, and percent change<sup>^</sup> in AIDS deaths, by gender, race/ethnicity, and risk, San Francisco

	Year of Death					Cumulative Totals as of 12/31/2000
	1996	1997	1998	1999*	2000*	
<b>Gender</b>						
Male	1,056	433 ( -59 )	419 ( -3 )	237 ( -43 )	205 ( -14 )	17,943
Female	56	25 ( -55 )	25 ( 0 )	25 ( 0 )	18 ( -28 )	497
Transgender	9	6 ( -33 )	10 ( 67 )	5 ( -50 )	6 ( 20 )	109
<b>Race/Ethnicity</b>						
White	779	310 ( -60 )	314 ( 1 )	175 ( -44 )	141 ( -19 )	14,278
African American	164	87 ( -47 )	88 ( 1 )	60 ( -32 )	56 ( -7 )	2,000
Latino	137	51 ( -63 )	37 ( -27 )	21 ( -43 )	23 ( 10 )	1,740
Other	41	16 ( -61 )	15 ( -6 )	11 ( -27 )	9 ( -18 )	531
<b>Risk</b>						
MSM	818	305 ( -63 )	286 ( -6 )	154 ( -46 )	134 ( -13 )	14,620
IDU	115	65 ( -43 )	73 ( 12 )	50 ( -32 )	40 ( -20 )	1,024
MSM-IDU	157	77 ( -51 )	79 ( 3 )	56 ( -29 )	43 ( -23 )	2,409
Heterosexual	13	10 ( -23 )	5 ( -50 )	3 ( -40 )	4 ( 33 )	163
Other/Unidentified	18	7 ( -61 )	11 ( 57 )	4 ( -64 )	8 ( 100 )	333
<b>Total</b>	<b>1,121</b>	<b>464 ( -59 )</b>	<b>454 ( -2 )</b>	<b>267 ( -41 )</b>	<b>229 ( -14 )</b>	<b>18,549</b>

<sup>^</sup> Percent change was calculated using the number of deaths which occurred in a given year minus the number of deaths that occurred in the previous year, divided by the number of deaths which occurred in the previous year; a positive percent indicates an increase and a negative percent indicates a decrease in the number of deaths from the previous year.

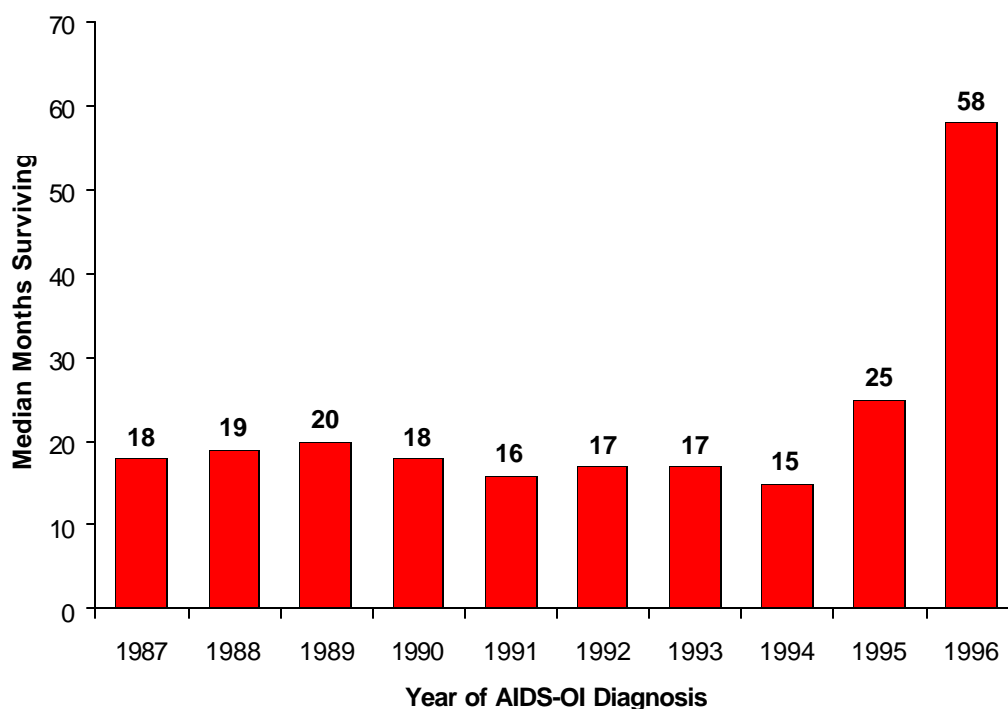
\* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through the match with the National Death Index (NDI) which is complete only through 1998.

## 4

## AIDS Survival

The median months of survival after an AIDS opportunistic illness (OI) diagnosis ranged from 18 to 20 months between 1987 and 1990 (Figure 4.1). The median months of survival was lower (range 15-17 months) between 1991 and 1994. Survival increased for persons diagnosed with an OI in 1995 and 1996 to 25 months and 58 months respectively. The decrease in survival for persons diagnosed in the early 1990s is probably a reflection of the use of prophylaxis against *Pneumocystis carinii* pneumonia which resulted in persons reaching an AIDS diagnosis later in the course of their disease, thereby reducing survival after AIDS. The more recent improvements in survival are due to the dramatic effect of highly active antiretroviral therapies that became widely available towards the end of 1995.

**Figure 4.1** Trends in median months of survival\* after AIDS opportunistic illness diagnosis, San Francisco, 1987-1996



\* See Technical Notes "AIDS Survival."

The increases in survival have occurred among all demographic and risk groups (Table 4.1). The median survival has been somewhat greater among men than women, Latinos than other race/ethnic groups, and non-injection drug users. The difference in survival between men and women and race and ethnic groups may reflect variations in use of highly active antiretroviral therapies. The worse survival among injection drug users may reflect less use of antiretroviral therapy as well as increased mortality from other causes such as drug overdose.

**Table 4.1 Trends in median months of survival<sup>^</sup> after AIDS opportunistic illness diagnosis by gender, race/ethnicity, and risk, San Francisco, 1987-1998**

	1987 - 1989 (N = 5,042) <u>Median Months</u>	1990 - 1994 (N = 8,359) <u>Median Months</u>	1995 - 1998 (N = 3,045) <u>Median Months</u>
<b>Total</b>	<b>19</b>	<b>17</b>	<b>59</b>
<b>Gender*</b>			
Male	19	17	59
Female	16	18	56
<b>Race/Ethnicity</b>			
White	19	17	62
African American	15	16	43
Latino	18	17	65
Other	18	19	53
<b>Risk</b>			
MSM	19	17	63
IDU	15	16	37
MSM-IDU	17	16	45
Other	15	18	56

<sup>^</sup> See Technical Notes "AIDS Survival."

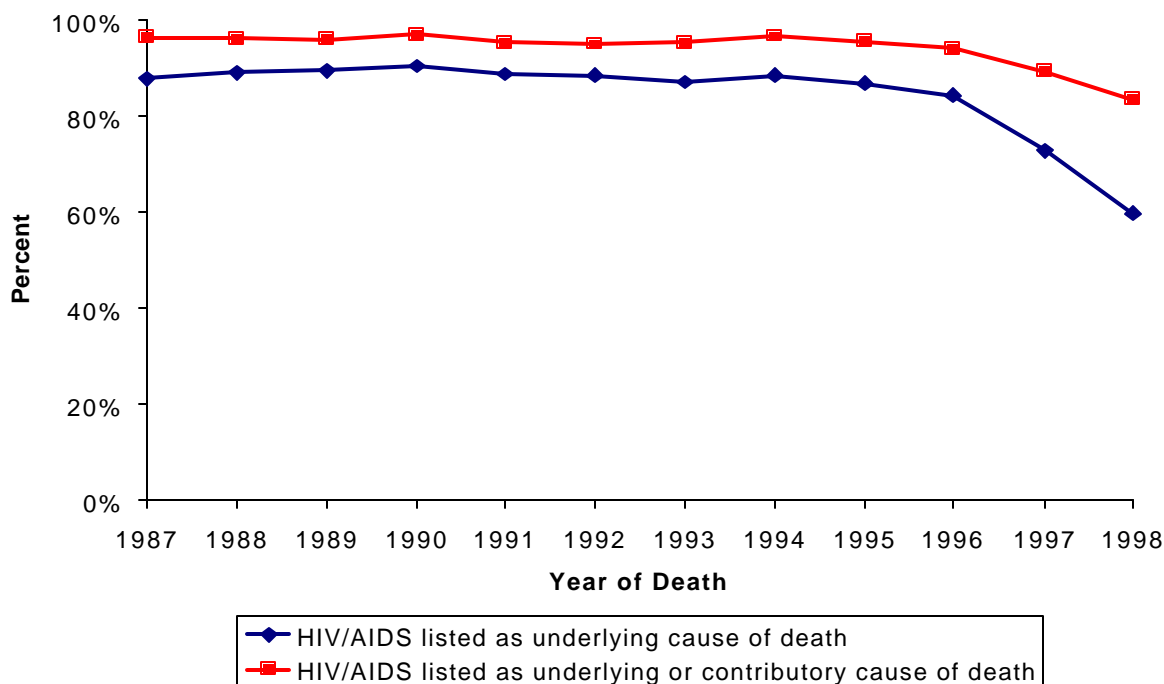
\* We cannot analyze temporal trends in AIDS survival by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

## 5

# Causes of Death among Persons with AIDS

HIV/AIDS was listed as an underlying or contributory cause of death for 83% of deaths occurring in 1998 among persons diagnosed with AIDS in San Francisco. The percent of deaths that included HIV/AIDS as an underlying or contributory cause was stable between 1987 and 1995 (Figure 5.1). However, the percent of persons with AIDS in whom HIV/AIDS was listed as an underlying or contributory cause of death declined each year between 1996 and 1998, suggesting that deaths due to causes other than HIV/AIDS (e.g. drug overdose, suicide) increased among persons with AIDS in recent years. Similar trends were observed in the percent of deaths in which HIV/AIDS was listed as the underlying cause of death. For the years 1987 through 1995, HIV/AIDS was listed as the underlying cause of death in 87%-90% of deaths among persons reported with AIDS. This percent declined to 84% in 1996, to 73% in 1997, and to 60% in 1998.

**Figure 5.1** Percent of HIV/AIDS\* listed as cause of death on death certificate among persons reported with AIDS by year of death, San Francisco, 1987-1998



\* Includes AIDS-defining conditions. See Technical Notes "Causes of Death."

Excluding HIV/AIDS, the most frequently cited underlying causes of death in 1995 and 1998 among persons with AIDS were other infectious diseases (4.6%) [notably viral hepatitis (2.0%) and aspergillosis (1.4%)], injuries and poisonings (3.4%) [including drug overdose (1.5%) and suicide (1.0%)], and non-AIDS cancers (2.8%) (Table 5.1). The percent of persons with AIDS who died of these conditions between 1995 and 1998 increased compared to earlier time periods. The percent that died of heart diseases and other cardiovascular or respiratory diseases also increased from one percent prior to 1995 to two percent for persons who died between 1995 and 1998. The increase in the percent of deaths among persons with AIDS that are not attributed to HIV/AIDS may be due to the extended survival in which the additional time alive allows for the development of causes of death unrelated to HIV/AIDS.

**Table 5.1 Underlying causes of death\* among persons with AIDS, San Francisco, 1987-1998**

Underlying Cause of Death	Year of Death		
	1987-1990 Number (%)	1991-1994 Number (%)	1995-1998 Number (%)
HIV/AIDS	3,932 ( 86.1 )	5,497 ( 86.4 )	2,869 ( 78.3 )
AIDS defining conditions	148 ( 3.2 )	116 ( 1.8 )	99 ( 2.7 )
Infections not included in AIDS definition	52 ( 1.1 )	153 ( 2.4 )	167 ( 4.6 )
<i>Viral hepatitis</i>	16 ( 0.4 )	49 ( 0.8 )	75 ( 2.0 )
<i>Aspergillosis</i>	4 ( 0.1 )	45 ( 0.7 )	52 ( 1.4 )
<i>Other</i>	32 ( 0.7 )	59 ( 0.9 )	40 ( 1.1 )
Injury and poisoning	73 ( 1.6 )	131 ( 2.1 )	123 ( 3.4 )
<i>Drug overdose</i>	10 ( 0.2 )	38 ( 0.6 )	55 ( 1.5 )
<i>Suicide</i>	38 ( 0.8 )	65 ( 1.0 )	38 ( 1.0 )
<i>Other</i>	25 ( 0.5 )	28 ( 0.4 )	30 ( 0.8 )
Cancers not included in AIDS definition	64 ( 1.4 )	93 ( 1.5 )	103 ( 2.8 )
<i>Lung/bronchial cancer</i>	28 ( 0.6 )	30 ( 0.5 )	24 ( 0.7 )
<i>Hodgkin's disease</i>	5 ( 0.1 )	5 ( 0.1 )	10 ( 0.3 )
<i>Other</i>	31 ( 0.7 )	58 ( 0.9 )	69 ( 1.9 )
Heart disease	41 ( 0.9 )	49 ( 0.8 )	67 ( 1.8 )
Pneumonia	53 ( 1.2 )	53 ( 0.8 )	47 ( 1.3 )
Liver disease	28 ( 0.6 )	74 ( 1.2 )	32 ( 0.9 )
Unknown or unspecified cause	3 ( 0.1 )	2 ( 0.0 )	22 ( 0.6 )
Other respiratory system diseases	19 ( 0.4 )	23 ( 0.4 )	27 ( 0.7 )
Other cardiovascular diseases	15 ( 0.3 )	24 ( 0.4 )	20 ( 0.5 )
Other digestive system diseases	20 ( 0.4 )	27 ( 0.4 )	24 ( 0.7 )
Other immune deficiencies	67 ( 1.5 )	54 ( 0.8 )	18 ( 0.5 )
Other causes	52 ( 1.1 )	64 ( 1.0 )	47 ( 1.3 )
<b>Total</b>	<b>4,567</b>	<b>6,360</b>	<b>3,665</b>

\* See Technical Notes "Causes of Death."



## 6

## Persons Living with AIDS

Although the annual number of new AIDS cases has decreased since 1992, the ongoing incidence of AIDS, coupled with the increase in survival after AIDS has resulted in an increasing number of persons living with AIDS in San Francisco. As of December 31, 2000, there were 8,873 persons living with AIDS in San Francisco. The demographic and risk group characteristics of persons living with AIDS have remained relatively stable between 1997 and 2000; the majority is male, white, aged 40-49 years, and MSM (including MSM-IDU) (Table 6.1). The percent of persons living with AIDS who are 40 years or older has increased over time, suggesting the use of treatments for HIV infection has delayed the age at AIDS diagnosis and prolonged the survival of AIDS.

**Table 6.1** Persons living with AIDS by demographic and risk characteristics, San Francisco, 1997-2000<sup>#</sup>

	1997 Number ( % )	1998 Number ( % )	1999 Number ( % )	2000 Number ( % )
<b>Gender</b>				
Male	7,412 ( 93 )	7,653 ( 93 )	7,949 ( 93 )	8,202 ( 92 )
Female	440 ( 6 )	465 ( 6 )	492 ( 6 )	531 ( 6 )
Transgender	123 ( 2 )	125 ( 2 )	136 ( 2 )	140 ( 2 )
<b>Race/Ethnicity</b>				
White	5,548 ( 70 )	5,703 ( 69 )	5,880 ( 69 )	6,043 ( 68 )
African American	1,128 ( 14 )	1,190 ( 14 )	1,248 ( 15 )	1,298 ( 15 )
Latino	980 ( 12 )	1,016 ( 12 )	1,094 ( 13 )	1,159 ( 13 )
Asian/Pacific Islander	274 ( 3 )	290 ( 4 )	306 ( 4 )	323 ( 4 )
Native American	45 ( 1 )	44 ( 1 )	49 ( 1 )	50 ( 1 )
<b>Age (at end of each year)</b>				
0 - 19	24 ( <1 )	27 ( <1 )	29 ( <1 )	31 ( <1 )
20 - 29	375 ( 5 )	317 ( 4 )	266 ( 3 )	220 ( 2 )
30 - 39	2,915 ( 37 )	2,833 ( 34 )	2,730 ( 32 )	2,617 ( 29 )
40 - 49	3,217 ( 40 )	3,403 ( 41 )	3,634 ( 42 )	3,782 ( 43 )
50+	1,444 ( 18 )	1,663 ( 20 )	1,918 ( 22 )	2,223 ( 25 )
<b>Exposure Category</b>				
<b>Male</b>				
MSM	5,918 ( 79 )	6,117 ( 79 )	6,350 ( 79 )	6,536 ( 78 )
IDU	488 ( 6 )	501 ( 6 )	535 ( 7 )	571 ( 7 )
MSM-IDU	1,004 ( 13 )	1,030 ( 13 )	1,047 ( 13 )	1,069 ( 13 )
Heterosexual	27 ( <1 )	28 ( <1 )	36 ( <1 )	42 ( 1 )
Other/Unidentified	95 ( 1 )	99 ( 1 )	114 ( 1 )	121 ( 1 )
Subtotal	7,532	7,775	8,082	8,339
<b>Female</b>				
IDU	266 ( 60 )	279 ( 60 )	293 ( 59 )	315 ( 59 )
Heterosexual	131 ( 30 )	140 ( 30 )	152 ( 31 )	167 ( 31 )
Other/Unidentified	46 ( 10 )	49 ( 10 )	50 ( 10 )	52 ( 10 )
Subtotal	443	468	495	534
<b>Total</b>	<b>7,975</b>	<b>8,243</b>	<b>8,577</b>	<b>8,873</b>

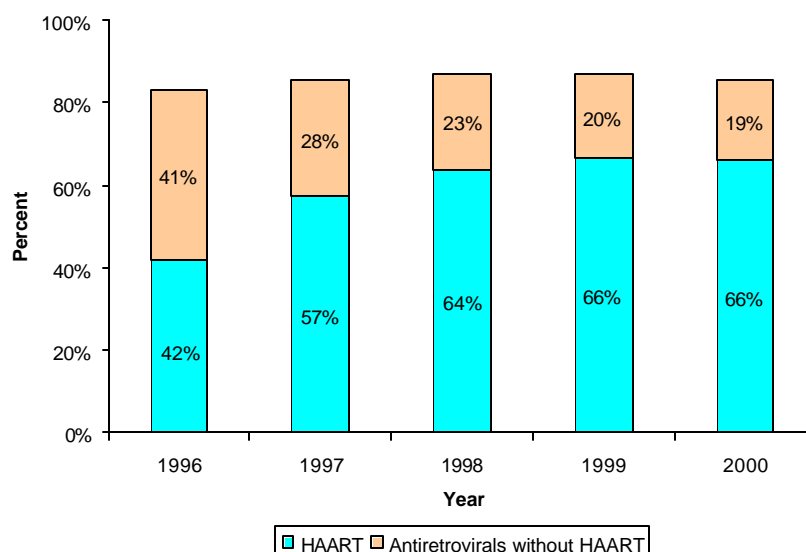
<sup>#</sup> Persons living with AIDS at the end of each year.

## 7

# HAART among Persons Living with AIDS

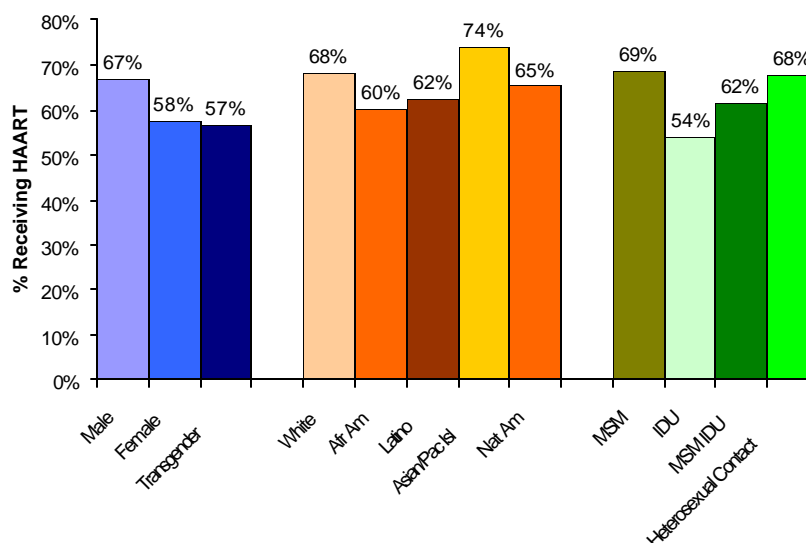
The majority of persons with AIDS in San Francisco have received antiretroviral therapy and the proportion of persons with AIDS on therapy has been increasing since 1996. Between 1996 and 2000, the use of highly active antiretroviral therapy (HAART) increased substantially (Figure 7.1). By the end of 2000, 85% of persons living with AIDS had received some type of antiretroviral therapy and 66% were noted to have received HAART. A greater percent of men were noted to have used HAART than were women or transgendered persons (Figure 7.2). HAART use was noted among 74% of Asians/Pacific Islanders with AIDS and among 68% of whites with AIDS. Use of HAART was noted by a smaller percent of African Americans, Latinos, and Native Americans with AIDS. HAART use was more common among MSM and heterosexuals with AIDS than among heterosexual and homosexual injection drug users.

**Figure 7.1** Use of HIV antiretrovirals\* and HAART among persons living with AIDS by year, San Francisco, 1996-2000



\* See Technical Notes "Treatments."

**Figure 7.2** Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk, San Francisco, December 2000

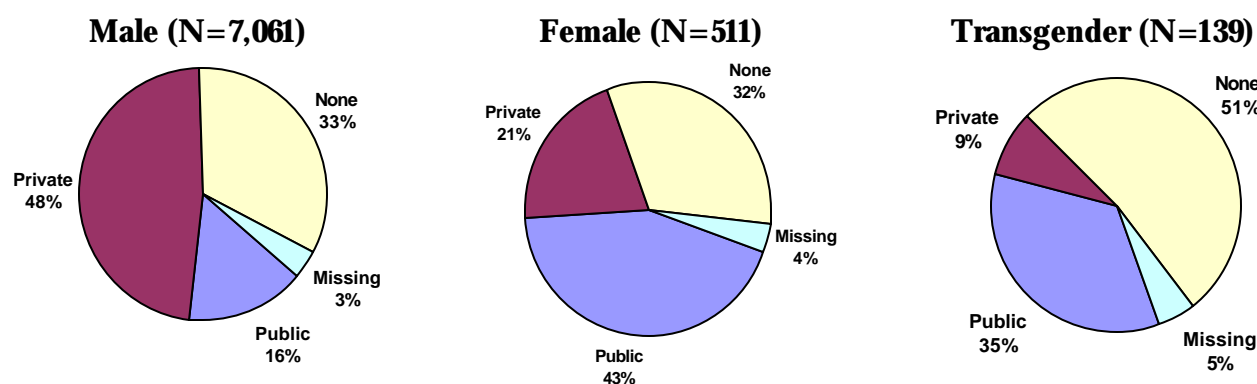


## 8

# Insurance Status at AIDS Diagnosis

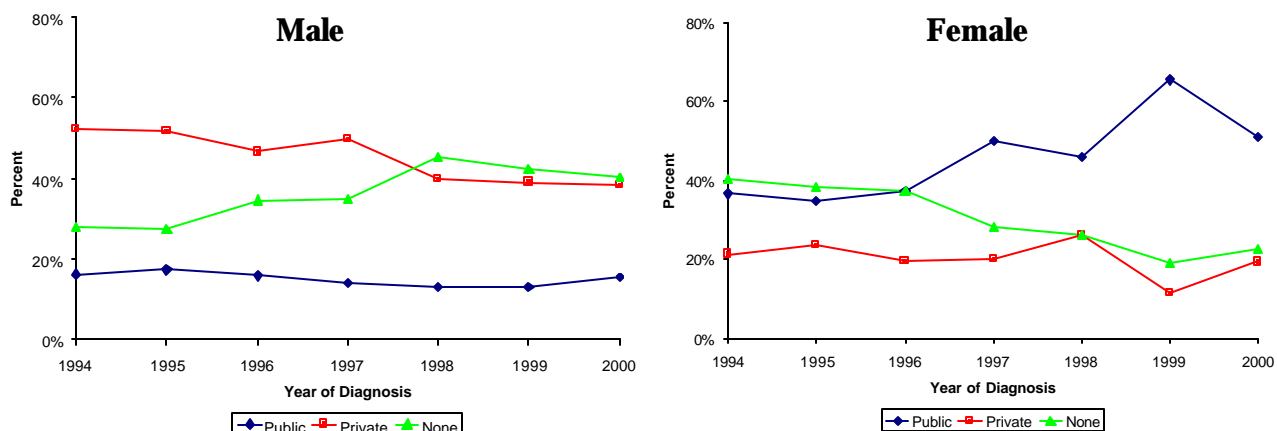
Insurance status at the time of AIDS diagnosis differs by gender. Although one third of both men and women who were diagnosed with AIDS between 1994 and 2000 were uninsured at the time of diagnosis, only 21% of women had private insurance while 48% of men had private insurance at the time of AIDS diagnosis (Figure 8.1). More than half of transgendered persons with AIDS did not have health insurance at the time of diagnosis. Between 1994 and 2000, the proportion of men with AIDS without health insurance increased while the proportion of women without health insurance decreased (Figure 8.2).

**Figure 8.1** AIDS cases by gender and insurance status<sup>#</sup> at diagnosis, San Francisco, 1994-2000



<sup>#</sup> Collection of insurance information started in 1994.

**Figure 8.2** Male and female AIDS cases\* by insurance status and year of diagnosis, San Francisco, 1994-2000



\* Excludes transgender cases. We are unable to look at insurance status by year of diagnosis among transgender cases. This information was first collected in September 1996.

## 9

## AIDS Opportunistic Illnesses

Initial and subsequent AIDS opportunistic illnesses (OIs) among persons with AIDS are collected through retrospective and prospective medical chart review. The number of AIDS OIs diagnosed each year has declined substantially between 1996 and 2000 (Table 9.1). There was a notable decrease in the proportion of cytomegalovirus infection (CMV), CMV retinitis and *Mycobacterium avium* complex (MAC) diagnoses. The decrease in CMV is most likely due to immune reconstitution with protease inhibitors while the decrease in MAC is the result of both immune reconstitution and wider use of MAC prophylaxis. Despite their lower numbers, *Pneumocystis carinii* pneumonia, wasting syndrome and Kaposi's sarcoma remain the most frequently diagnosed OI in this time period.

**Table 9.1** Number of AIDS opportunistic illnesses\* diagnosed between 1996 and 2000, San Francisco

AIDS Indicator Condition	1996 Number (%)	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)
Candidiasis, bronchi, trachea, or lungs	8 ( 0.3 )	2 ( 0.2 )	3 ( 0.4 )	7 ( 1.1 )	1 ( 0.2 )
Candidiasis, esophageal	167 ( 7.1 )	80 ( 7.2 )	59 ( 7.0 )	50 ( 7.7 )	41 ( 8.9 )
Cervical cancer	1 ( 0.0 )	1 ( 0.1 )	0 ( 0.0 )	1 ( 0.2 )	0 ( 0.0 )
Coccidioidomycosis, disseminated or extrapulmonary	4 ( 0.2 )	1 ( 0.1 )	2 ( 0.2 )	2 ( 0.3 )	1 ( 0.2 )
Cryptococcosis, extrapulmonary	89 ( 3.8 )	58 ( 5.2 )	41 ( 4.9 )	33 ( 5.1 )	24 ( 5.2 )
Cryptosporidiosis, chronic intestinal	70 ( 3.0 )	39 ( 3.5 )	34 ( 4.0 )	32 ( 4.9 )	14 ( 3.0 )
Cytomegalovirus disease (CMV)	132 ( 5.6 )	67 ( 6.0 )	25 ( 3.0 )	26 ( 4.0 )	13 ( 2.8 )
Cytomegalovirus retinitis	160 ( 6.8 )	39 ( 3.5 )	43 ( 5.1 )	28 ( 4.3 )	11 ( 2.4 )
HIV encephalopathy	126 ( 5.3 )	60 ( 5.4 )	63 ( 7.5 )	46 ( 7.1 )	30 ( 6.5 )
Herpes simplex	25 ( 1.1 )	10 ( 0.9 )	10 ( 1.2 )	4 ( 0.6 )	3 ( 0.7 )
Histoplasmosis, disseminated or extrapulmonary	12 ( 0.5 )	4 ( 0.4 )	2 ( 0.2 )	1 ( 0.2 )	2 ( 0.4 )
Isosporiasis, chronic intestinal	3 ( 0.1 )	2 ( 0.2 )	1 ( 0.1 )	2 ( 0.3 )	1 ( 0.2 )
Kaposi's sarcoma	265 ( 11.2 )	125 ( 11.2 )	66 ( 7.9 )	54 ( 8.3 )	49 ( 10.6 )
Lymphoma, Burkitt's	24 ( 1.0 )	14 ( 1.3 )	15 ( 1.8 )	6 ( 0.9 )	8 ( 1.7 )
Lymphoma, immunoblastic	72 ( 3.1 )	50 ( 4.5 )	22 ( 2.6 )	19 ( 2.9 )	22 ( 4.8 )
Lymphoma, primary in brain	37 ( 1.6 )	14 ( 1.3 )	5 ( 0.6 )	4 ( 0.6 )	3 ( 0.7 )
Mycobacterium avium complex (MAC)	236 ( 10.0 )	79 ( 7.1 )	54 ( 6.4 )	45 ( 6.9 )	31 ( 6.7 )
Mycobacterium tuberculosis, disseminated or extrapulmonary	25 ( 1.1 )	6 ( 0.5 )	7 ( 0.8 )	5 ( 0.8 )	4 ( 0.9 )
Mycobacterium tuberculosis, pulmonary	38 ( 1.6 )	13 ( 1.2 )	28 ( 3.3 )	27 ( 4.2 )	8 ( 1.7 )
Mycobacterium, other species	21 ( 0.9 )	5 ( 0.4 )	1 ( 0.1 )	6 ( 0.9 )	4 ( 0.9 )
Pneumocystis carinii pneumonia (PCP)	361 ( 15.3 )	202 ( 18.1 )	175 ( 20.8 )	127 ( 19.6 )	115 ( 24.9 )
Pneumonia, recurrent	97 ( 4.1 )	74 ( 6.6 )	47 ( 5.6 )	37 ( 5.7 )	17 ( 3.7 )
Progressive multifocal leukoencephalopathy	28 ( 1.2 )	8 ( 0.7 )	7 ( 0.8 )	5 ( 0.8 )	3 ( 0.7 )
Salmonella sepsis, recurrent	3 ( 0.1 )	1 ( 0.1 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )
Toxoplasmosis of brain	38 ( 1.6 )	16 ( 1.4 )	10 ( 1.2 )	7 ( 1.1 )	2 ( 0.4 )
Wasting syndrome	318 ( 13.5 )	146 ( 13.1 )	120 ( 14.3 )	75 ( 11.6 )	54 ( 11.7 )
<b>Total</b>	<b>2,360 ( 100 )</b>	<b>1,116 ( 100 )</b>	<b>840 ( 100 )</b>	<b>649 ( 100 )</b>	<b>461 ( 100 )</b>

\* A person may have more than one opportunistic illness diagnosed during the same or different year. Data are provisional for opportunistic illnesses diagnosed in recent years.

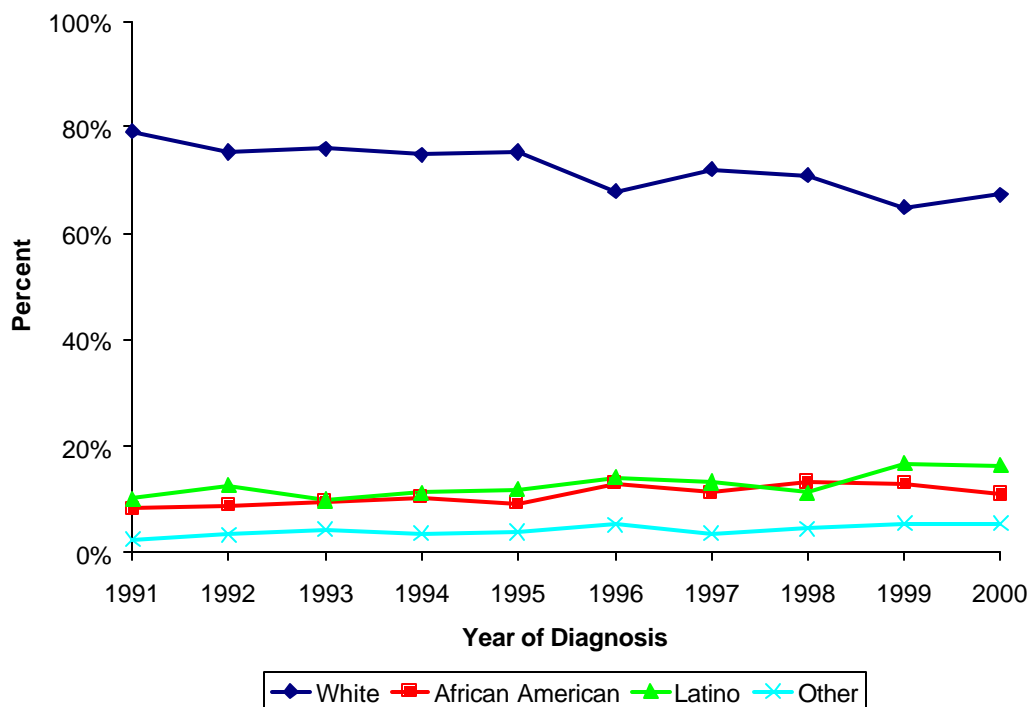
## 10

# HIV/AIDS among Men Who Have Sex with Men

## AIDS surveillance data

Seventy percent of San Francisco AIDS cases have occurred among white MSM. Between 1991 and 2000, the proportion of AIDS cases among MSM who are white has declined slightly while the proportion of non-white MSM AIDS cases has increased (Figure 10.1).

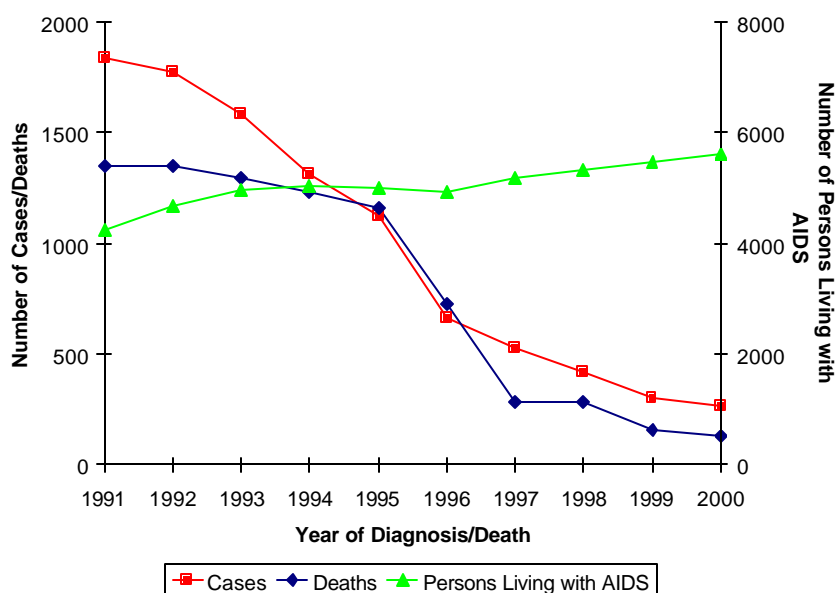
**Figure 10.1** Percent of AIDS cases among MSM\* by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



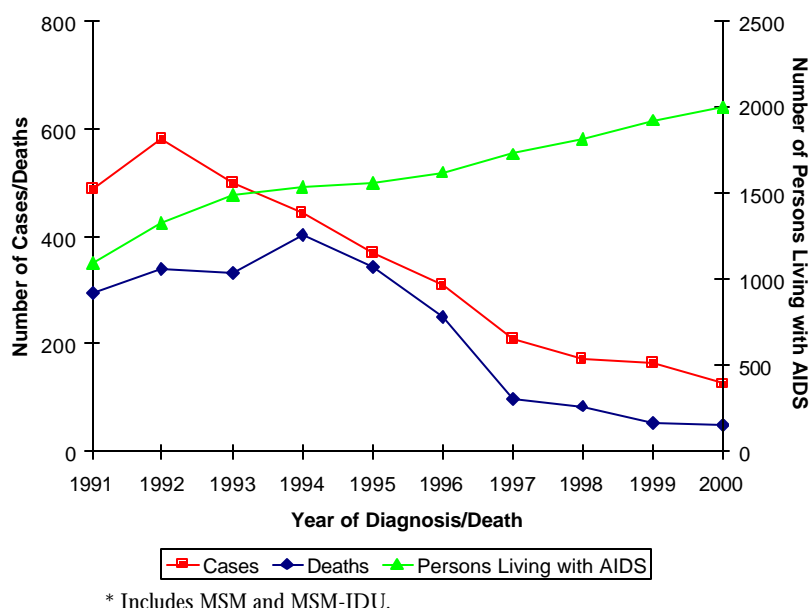
\* Includes MSM and MSM-IDU.

The number of new AIDS cases among white MSM peaked in 1991 and declined each year thereafter (Figure 10.2). The number of new AIDS cases among nonwhite MSM peaked in 1992 and declined steadily thereafter (Figure 10.3). The number of deaths peaked among white MSM with AIDS in 1991 and among nonwhite MSM in 1994. Deaths in both of these groups have declined substantially since 1995. The number of white MSM living with AIDS increased by 32% between 1991 and 2000 while the number of nonwhite MSM living with AIDS increased by 84% in this same time period. As of December 31, 2000, there were 5,605 white MSM and 2,002 nonwhite MSM living with AIDS in San Francisco.

**Figure 10.2** AIDS cases, deaths, and prevalence among white MSM\* by year, San Francisco, 1991-2000



**Figure 10.3** AIDS cases, deaths, and prevalence among nonwhite MSM\* by year, San Francisco, 1991-2000



## HIV seroprevalence and seroincidence data

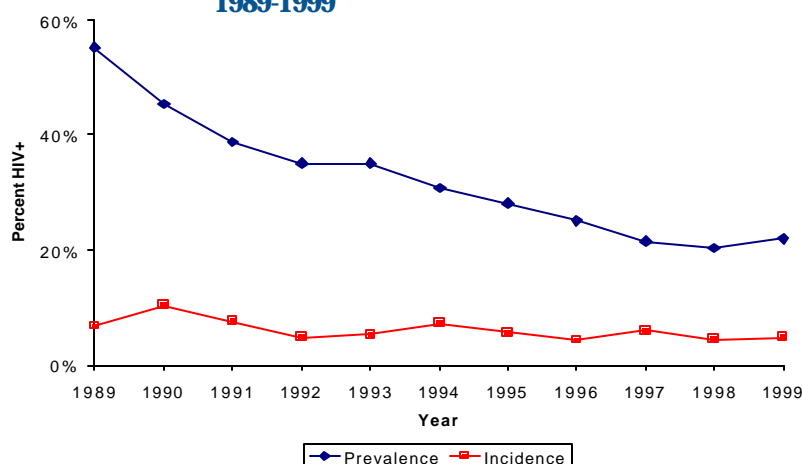
### STD Clinic Survey

HIV prevalence data are available from annual blinded seroprevalence surveys that were conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz et al, in press).

Between 1989 and 1999, the prevalence of HIV infection among MSM at the STD Clinic decreased from 55% in 1989 to 22% in 1999 (Figure 10.4). The incidence of infection among MSM during this time period fluctuated from a high of 10.4% per year in 1990 to a low of 4.3% per year in 1996. Between 1998 and 1999, the incidence among MSM increased slightly from 4.5% to 4.8%.

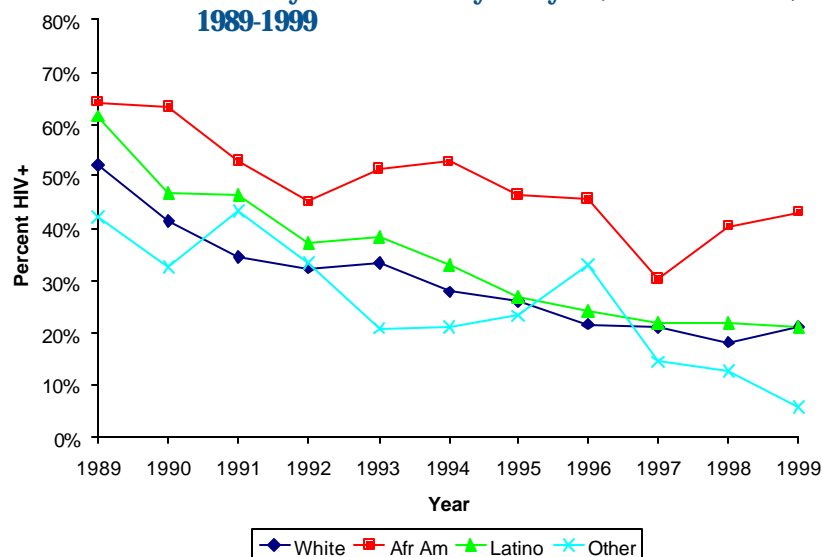
The decline in prevalence is most likely due to HIV infected persons seeking care outside of the STD clinic in more recent years. The high rate of new HIV infections among MSM at the STD clinic is likely due to the higher level of risk among MSM who seek care at this clinic as well as to high levels of ongoing HIV transmission among MSM in San Francisco in recent years. HIV prevalence remained the highest among African Americans throughout the survey period (Figure 10.5).

**Figure 10.4 HIV prevalence and incidence among MSM\* attending an STD clinic by year, San Francisco, 1989-1999**



\*Includes MSM and MSM-IDU.

**Figure 10.5 HIV prevalence among MSM\* attending an STD clinic by race/ethnicity and year, San Francisco, 1989-1999**



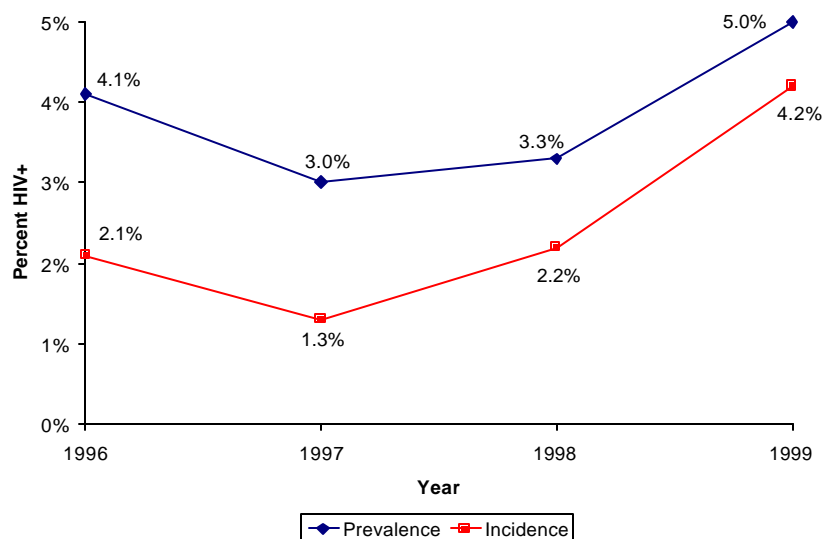
\*Includes MSM and MSM-IDU.

### ***Anonymous Counseling and Testing data***

Data from the anonymous test sites (ATS) are from persons seeking voluntary HIV counseling and testing and in general these persons tend to have lower levels of risk behavior than MSM patients attending the STD clinic. In 1996 and 1997, the prevalence of HIV infection among MSM was approximately twice the incidence rate (Figure 10.6). Both of these rates declined from 1996 to 1997. However, the incidence and prevalence of HIV increased from 1997 to 1998 and again in 1999. This last year the incidence of HIV among MSM was 4.2% per year and the prevalence was 5.0%.

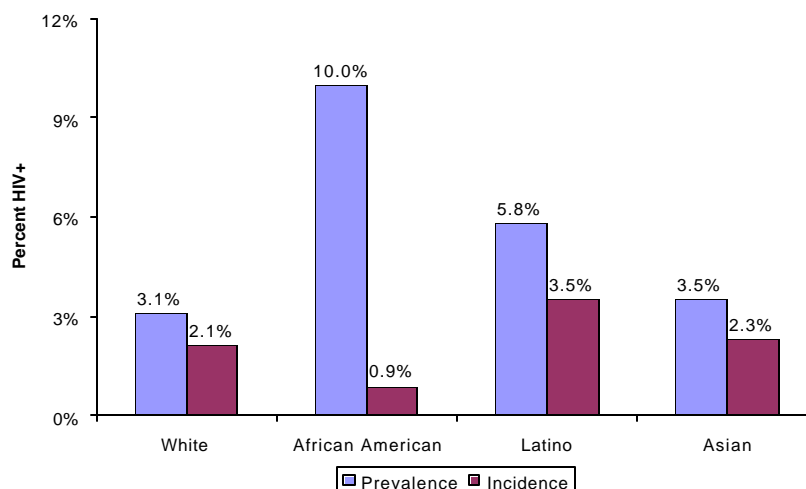
African American MSM at the ATS had the highest prevalence of HIV (10.0%) but the lowest incidence of HIV (0.9% per year) (Figure 10.7). This may be due to African Americans testing later in the course of their infection. Incidence of HIV was highest among Latino MSM (3.5% per year), while prevalence was 5.8%. Prevalence and incidence rates at ATS may not be generalizable to the general population of MSM as they are based on persons who access testing at ATS, and do not reflect those who test elsewhere or who have never been tested for HIV.

**Figure 10.6 HIV prevalence and incidence among MSM\* at anonymous testing sites by year, San Francisco, 1996-1999**



\*Includes MSM and MSM-IDU.

**Figure 10.7 HIV prevalence and incidence among MSM\* at anonymous testing sites by race/ethnicity, San Francisco, 1996-1999**



\*Includes MSM and MSM-IDU.



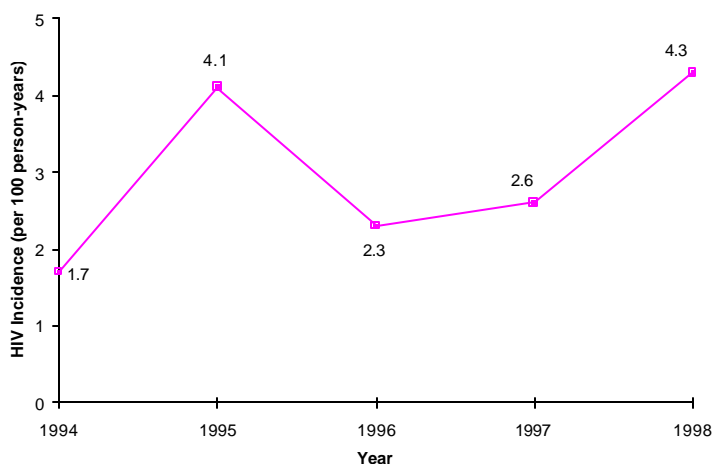
### ***San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)***

Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes “Record based incidence studies”).

The incidence of HIV infection among MSM patients tested at SFGH fluctuated between 1994 and 1998 (Figure 10.8). There were two peaks during these years, one in 1995 at a rate of 4.1 per 100 person years and the other in 1998 at 4.3 per 100 person years. It is worth noting that HIV incidence increased each year between 1996 and 1998.

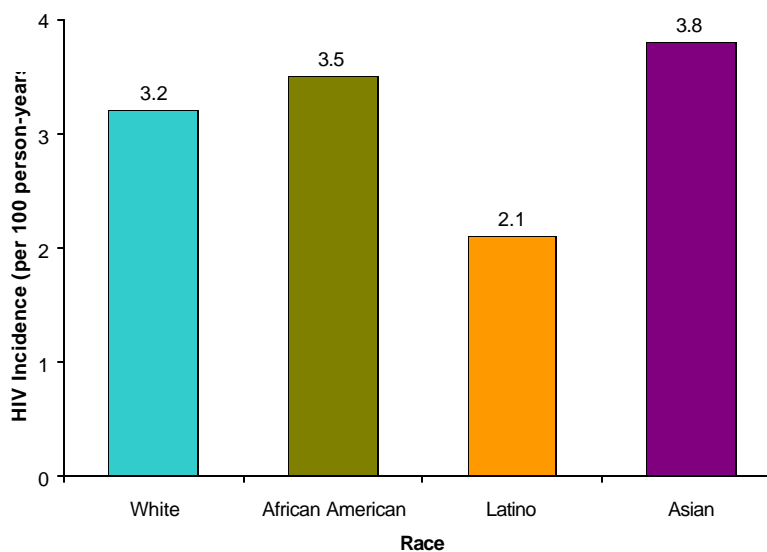
The incidence of HIV among SFGH MSM patients between 1994 and 1998 was similar for all racial groups, with somewhat lower incidence among Latino MSM (Figure 10.9).

**Figure 10.8 HIV incidence among MSM\* testing at San Francisco General Hospital by year, 1994-1998**



\*Includes MSM and MSM-IDU.

**Figure 10.9 HIV incidence among MSM testing at San Francisco General Hospital by race/ethnicity, 1994-1998**

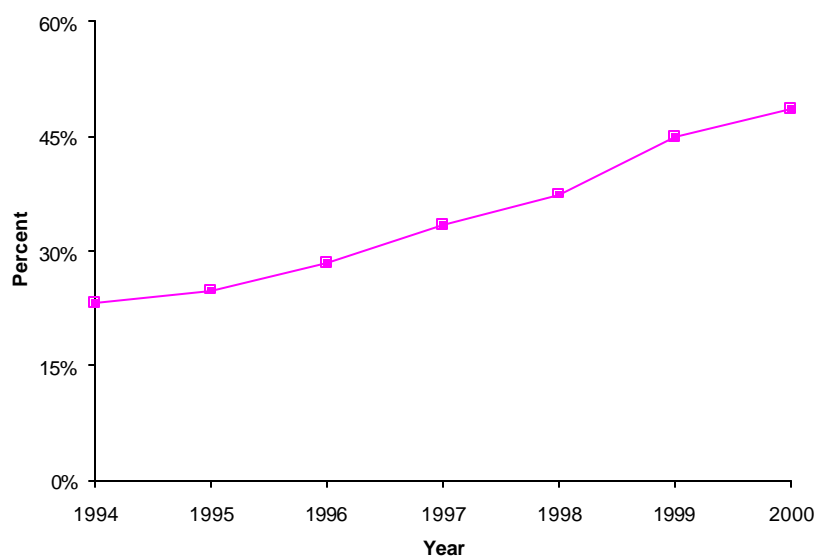


\*Includes MSM and MSM-IDU.

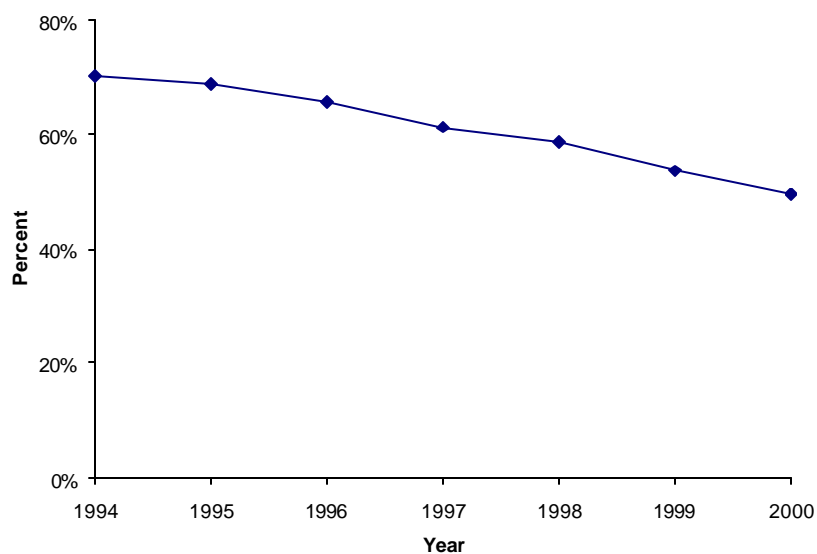
## Sexual risk behavior data

The STOP AIDS Project has collected data from annual interviews with MSM in San Francisco. The percent of MSM who reported having multiple sex partners and unprotected anal intercourse increased from 23% in 1994 to 47% in 2000 (Figure 10.10). During this same time period the percent of MSM who reported using condoms all of the time decreased from 70% in 1994 to 50% in 2000 (Figure 10.11).

**Figure 10.10 Percent of MSM reporting multiple partners and unprotected anal intercourse, STOP AIDS Project, 1994-2000**



**Figure 10.11 Percent of MSM reporting 100% condom use, STOP AIDS Project, 1994-2000**



## 11

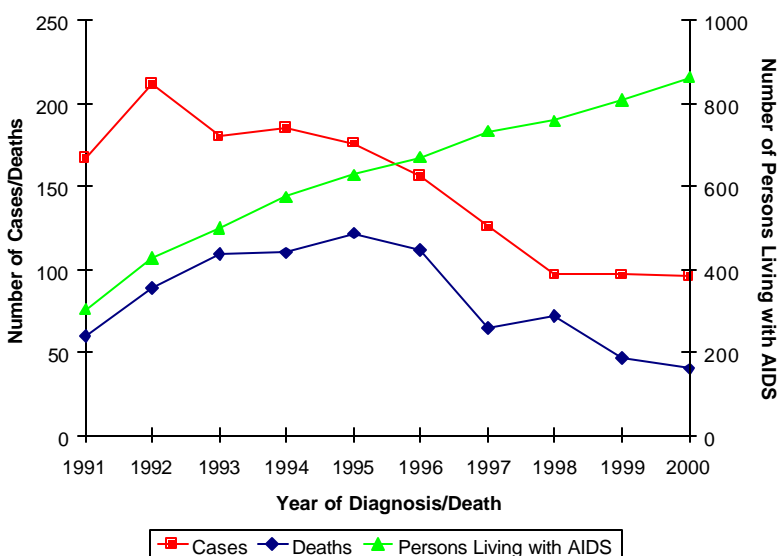
# HIV/AIDS among Injection Drug Users

## AIDS surveillance data

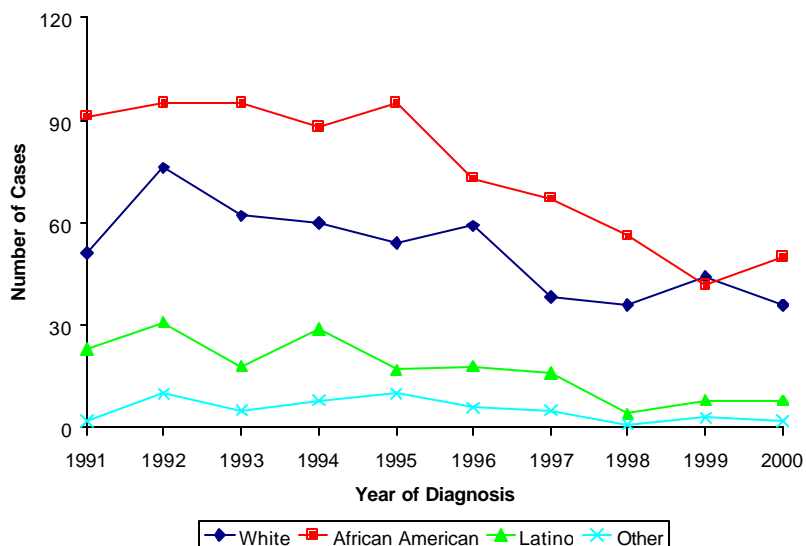
Injection drug use by non-MSMs comprises the third most frequent exposure group for persons with AIDS in San Francisco, after MSM and MSM-IDU. The number of new AIDS cases among non-MSM IDU peaked in 1992 with 212 cases diagnosed that year (Figure 11.1). The number of deaths in this group plateaued between 1993 and 1996 and declined substantially in 1997. The number of non-MSM IDU living with AIDS has increased steadily and as of December 31, 2000 there were 864 non-MSM injection drug users living with AIDS in San Francisco.

African Americans account for the greatest number of non-MSM IDU AIDS cases (Figure 11.2). The number of new AIDS cases among African American non-MSM IDU plateaued between 1992 and 1995 and has declined since. However, among white non-MSM IDU AIDS cases, the number of new cases peaked sharply in 1992 and has declined since.

**Figure 11.1** AIDS cases, deaths, and prevalence among heterosexual IDU by year, San Francisco, 1991-2000



**Figure 11.2** AIDS cases among heterosexual IDU by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



MSM-IDU account for the majority (62%) of IDU-associated AIDS cases followed by male heterosexual IDU who comprise 24% of IDU-associated AIDS cases (Table 11.1). Of the MSM IDU cases, 72% are white and 16% African American. This differs markedly from the heterosexual male and female IDU AIDS cases in which 48% and 53% respectively, are African American.

**Table 11.1** Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2000, San Francisco

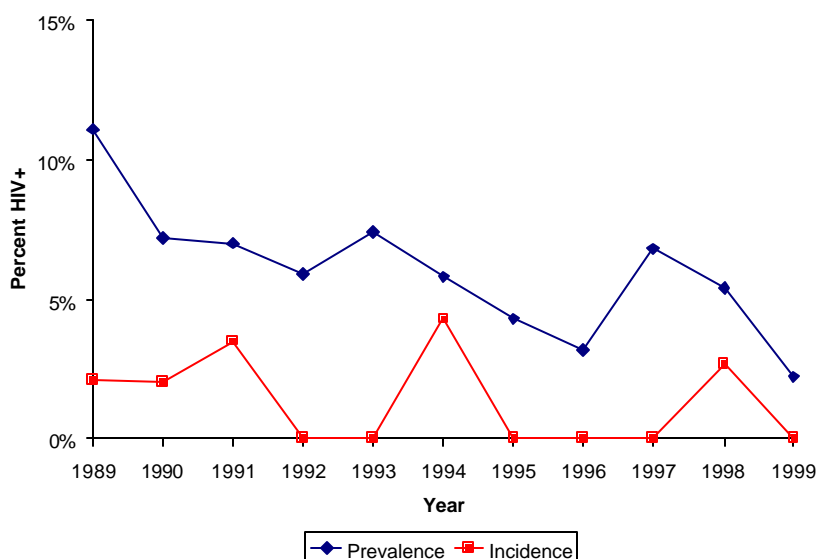
Exposure Category	Number	Race/Ethnicity Distribution by Percent				
		White	African American	Latino	Asian	Native American
Male heterosexual IDU	1,316	36%	48%	13%	2%	1%
Female heterosexual IDU	554	32%	53%	10%	3%	2%
MSM IDU	3,478	72%	16%	9%	1%	1%
Lesbian IDU	40	50%	30%	13%	5%	3%
Heterosexual contact with IDU	156	36%	45%	13%	6%	0%
Children whose mothers are IDUs or sex partners of IDUs	30	17%	53%	17%	10%	3%

## HIV seroprevalence and seroincidence data

### STD Clinic Survey

HIV prevalence data are available from annual blinded seroprevalence surveys that were conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al., in press). The prevalence of HIV infection among non-MSM IDU STD clinic patients declined from 11% in 1989 to 2% in 1999 (Figure 11.3). The incidence during this time period fluctuated (range 0-4.3% per year) but did not demonstrate an overall significant trend.

**Figure 11.3** HIV prevalence and incidence among heterosexual IDU attending an STD clinic by year, San Francisco, 1989-1999

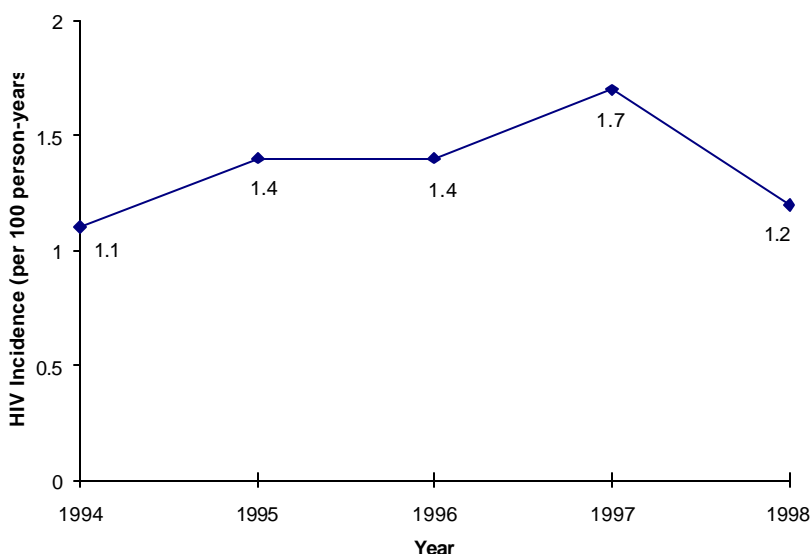


**San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)**

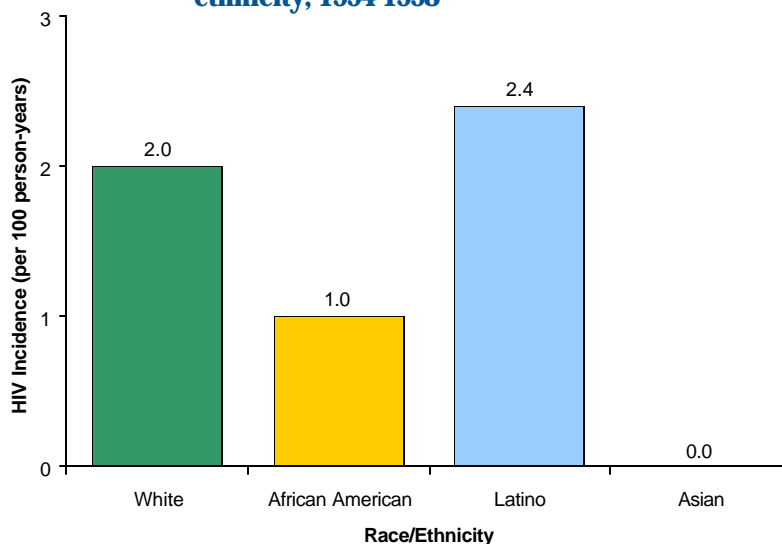
Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes "Record based incidence studies"). The incidence of HIV infection among non-MSM IDU at San Francisco General Hospital fluctuated (range 1.1 to 1.7 per 100 person years) but did not demonstrate a significant overall upward or downward trend between 1994 and 1998 (Figure 11.4).

Among non-MSM IDU the incidence was highest among Latinos (2.4 per 100 person years) followed by whites (2.0 per 100 person years) and lowest among Asians in whom there were no seroconversions during the study period (Figure 11.5).

**Figure 11.4 HIV incidence among heterosexual IDU testing at San Francisco General Hospital by year, 1994-1998**



**Figure 11.5 HIV incidence among heterosexual IDU testing at San Francisco General Hospital by race/ethnicity, 1994-1998**



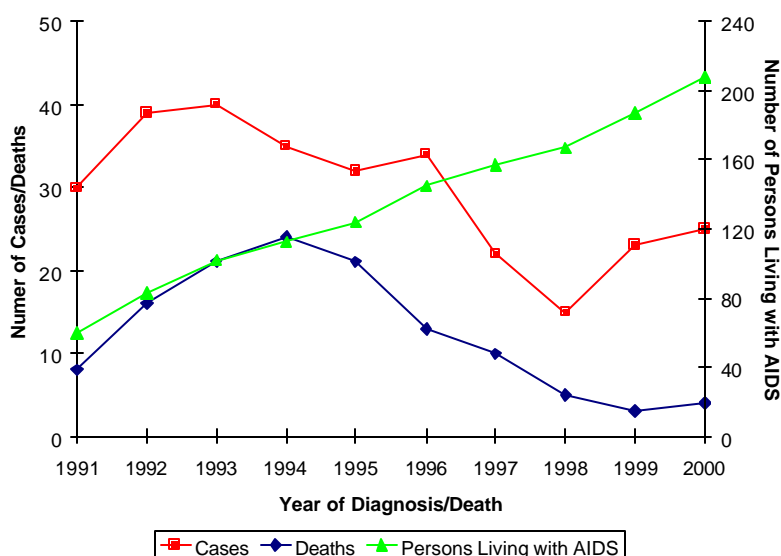
## 12

# HIV/AIDS among Heterosexuals

## AIDS surveillance data

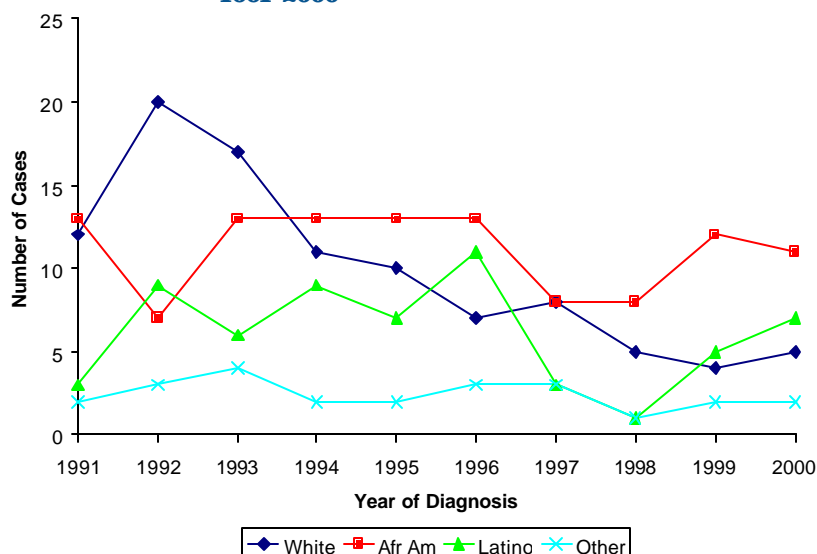
The number of AIDS cases among persons who acquired HIV infection through heterosexual contact is small relative to other risk groups. The number of new AIDS cases in this group peaked in 1993 with 40 cases diagnosed that year (Figure 12.1). The number of deaths among heterosexual non-IDU peaked in 1994 with 24 deaths occurring that year. The number of heterosexual non-IDU living with AIDS has increased steadily to a total of 208 by December 31, 2000.

**Figure 12.1** AIDS cases, deaths, and prevalence among heterosexuals by year, San Francisco, 1991-2000



The number of new heterosexual contact AIDS cases among whites peaked in 1992 and declined thereafter (Figure 12.2). Among African American heterosexual non-IDU AIDS cases, the number of new cases plateaued between 1993 and 1996 and declined to a lower plateau in 1997 and 1998. In 1994, the number of new AIDS cases among African American heterosexual non-IDU exceeded the number among whites. Although small relative to other risk groups, the number of new AIDS cases among heterosexual non-IDU remains highest among African Americans.

**Figure 12.2** AIDS cases among heterosexuals by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



The majority of heterosexually acquired AIDS cases are women (Table 12.1). Of the 288 women in this group, 122 (42%) reported sex with an IDU. Among the 83 men in this risk group, 34 (41%) reported an IDU partner. Fifty-three percent of men and 36% of women reported sex with an HIV infected partner of unknown risk.

### HIV seroprevalence and seroincidence data

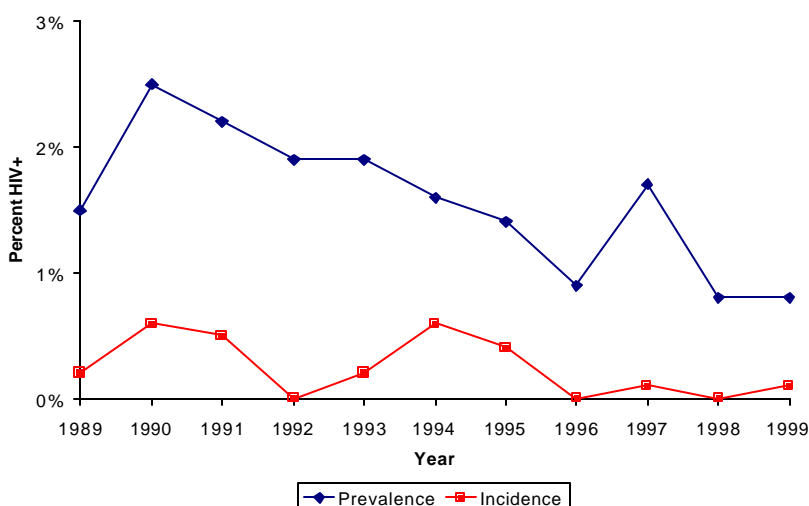
#### STD Clinic Survey

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al, in press). The prevalence of HIV infection among heterosexual non-IDU patients at the STD clinic declined from a high of 2.5% in 1990 to 0.8% in 1999 (Figure 12.3). The incidence of HIV was low in all the years (less than 1% per year).

**Table 12.1 Heterosexually transmitted AIDS by exposure category and gender, diagnosed through December 2000, San Francisco**

Exposure Category	Men Number (%)	Women Number (%)
Sex with injection drug user	34 ( 41 )	122 ( 42 )
Sex with bisexual men	0 ( 0 )	54 ( 19 )
Sex with persons with hemophilia	0 ( 0 )	3 ( 1 )
Sex with transfusion recipient with HIV+	5 ( 6 )	5 ( 2 )
Sex with HIV+ person of unknown risk	44 ( 53 )	104 ( 36 )
<b>Total</b>	<b>83 ( 100 )</b>	<b>288 ( 100 )</b>

**Figure 12.3 HIV prevalence and incidence among heterosexuals attending an STD clinic by year, San Francisco, 1989-1999**

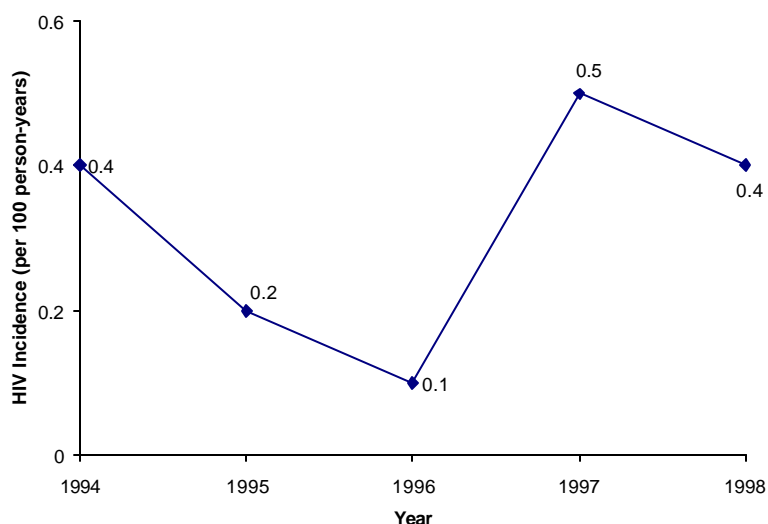


***San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)***

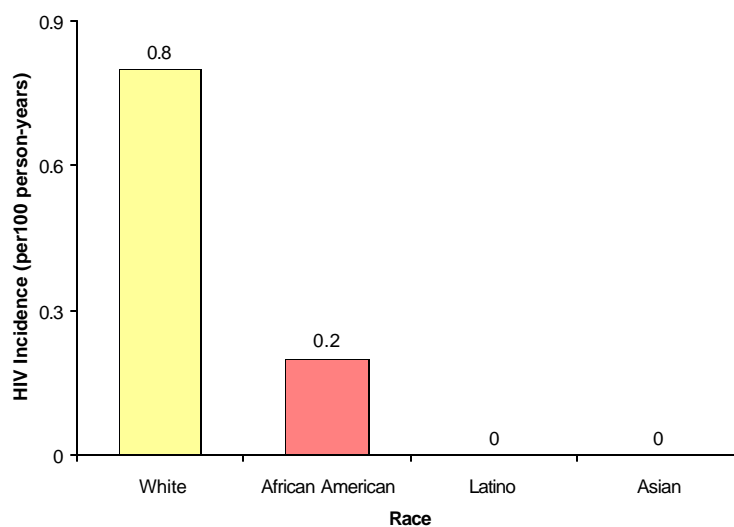
Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes "Record based incidence studies"). The incidence among heterosexuals who did not report injection drug use was low ( $\leq 0.5$  per 100 person-years) and did not change significantly during the study (Figure 12.4).

Incidence was higher for whites (0.8 per 100 person-years) than African Americans (0.2 per 100 person-years) (Figure 12.5). There were no seroconversions identified among Latino and Asian heterosexuals tested.

**Figure 12.4 HIV incidence among heterosexuals testing at San Francisco General Hospital by year, 1994-1998**



**Figure 12.5 HIV incidence among heterosexuals testing at San Francisco General Hospital by race/ethnicity, 1994-1998**





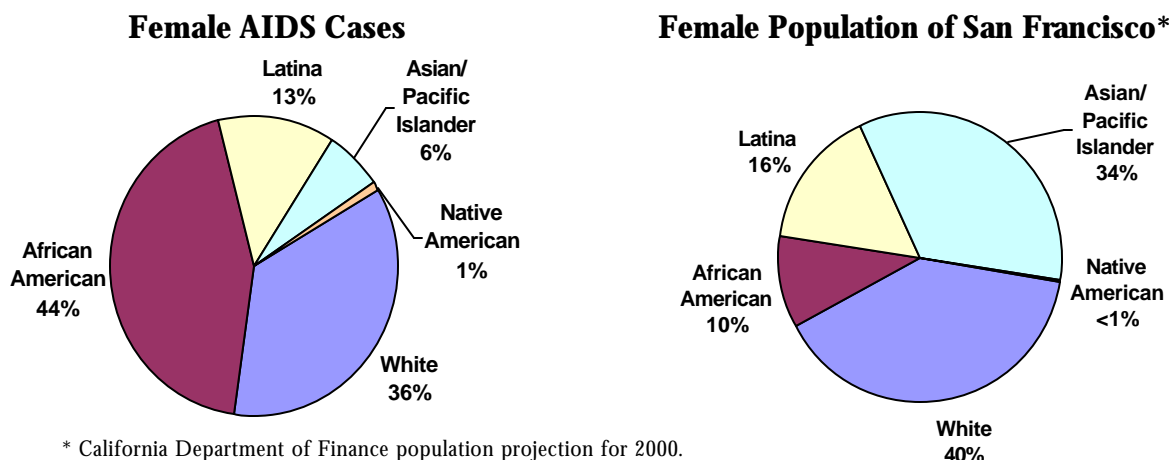
## 13

## HIV/AIDS among Women

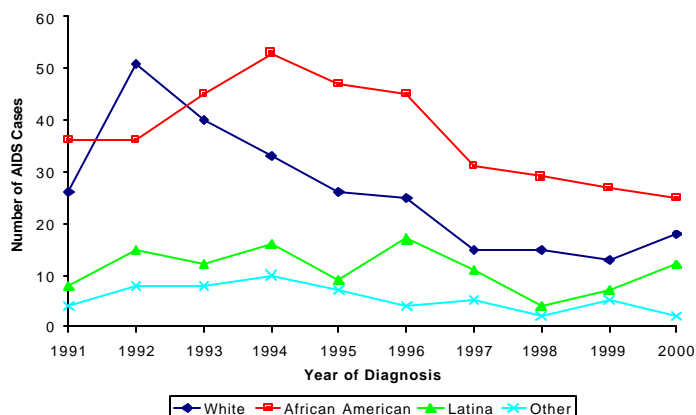
## AIDS surveillance data

African American women comprise a disproportionate percent of the women with AIDS in San Francisco. Among female AIDS cases, 44% occurred among African Americans even though African American women comprise only 10% of the San Francisco female population (Figure 13.1). The number of new AIDS cases among African American women remained higher than women of other race/ethnic groups between 1993 and 2000 (Figure 13.2).

**Figure 13.1 Female AIDS cases diagnosed through December 2000 and female population by race/ethnicity, San Francisco**



**Figure 13.2 Number of female AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000**



## HIV seroprevalence and seroincidence data

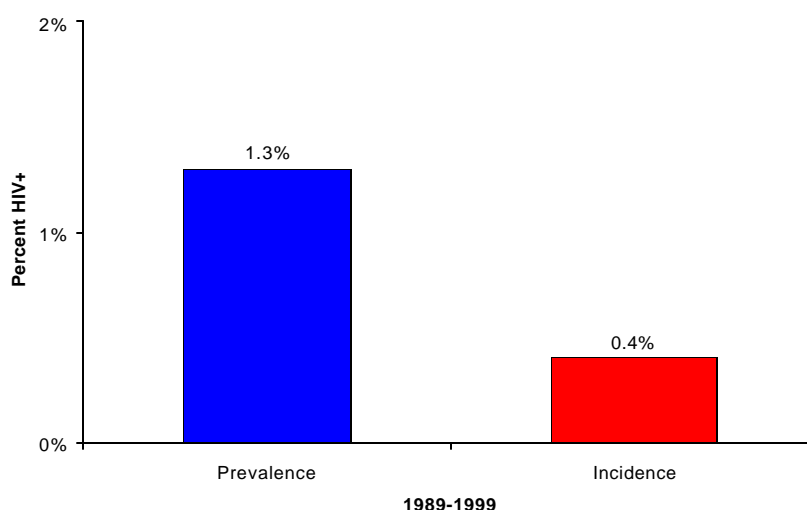
### STD Clinic Survey

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al., in press). For the years 1989 to 1999, overall HIV prevalence was 1.3% among women attending the STD clinic and HIV incidence was 0.4% per year (Figure 13.3).

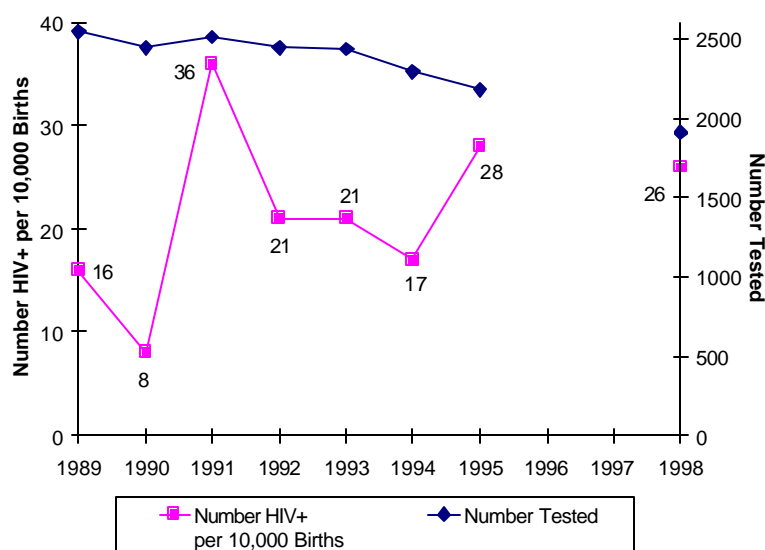
### Survey of Childbearing Women

Estimates of the prevalence of HIV infection among childbearing women were obtained through blinded HIV testing of newborns between 1989 and 1995 and again in 1998. The survey was funded by the Centers for Disease Control and Prevention until 1995. In 1998, the California Department of Health Services provided funds for an additional year of the survey. HIV antibodies in newborns reflect HIV infection in the mothers because of transfer of maternal HIV antibody during pregnancy. The presence of HIV antibody in the infants does not necessarily reflect newborn HIV infection since many of these infants will serorevert. This has

**Figure 13.3 HIV prevalence and incidence among women attending an STD clinic, San Francisco, 1989-1999**



**Figure 13.4 HIV prevalence among newborn infants and their mothers, San Francisco, 1989-1998\***



\* Surveys were not conducted for the years 1996 and 1997.

become more frequent with the use of antiretroviral prophylaxis during pregnancy which has markedly reduced the proportion of HIV-infected babies born to infected mothers. HIV prevalence among childbearing women ranged between a high of 36 per 10,000 births in 1991 to a low of 8 per 10,000 births in 1990 (Figure 13.4). The HIV prevalence in 1998 was similar to the rate in 1995 (26 per 10,000 births and 28 per 10,000 births respectively). The HIV prevalence among childbearing women in San Francisco is low relative to other parts of the United States and to the prevalence of HIV infection among high-risk women in San Francisco.

## Risk behavior data

### *Young Women's Survey*

The Young Women's Survey (YWS) was a population-based, door-to-door survey of women aged 18 to 29 years who resided in low-income neighborhoods in five counties in the San Francisco Bay Area (Ruiz, et al.). Between April 1996 and January 1998, 2,547 young women were interviewed. Participants were asked about sexual and drug use behaviors and tested for HIV and other STDs.

High-risk sexual activities and injection drug use varied significantly among participants who reported lifetime sexual activity with men only, both men and women, and women only. The reported prevalence of risk was greater among women who reported lifetime male and female partners, followed by women with male partners and women with female partners only (Table 13.1).

HIV prevention efforts should acknowledge that women who have both male and female partners may be at risk for HIV or other STDs from sexual contact with their male partners and their injection drug use.

**Table 13.1** Prevalence of selected high-risk sexual and injection drug use behaviors among young women in low-income neighborhoods by gender of lifetime sexual partners

	Both Male and Female Partners	Male Partners Only	Female Partners Only
<b>Sexual Risk Activities</b>			
Ever traded sex for drugs or money	38%	7%	0%
Traded sex for drugs or money within 6 months	21%	3%	0%
Ever had sex with MSM	30%	3%	0%
Sex with MSM w/in 6 months	10%	<1%	0%
Ever had sex with HIV+ man	5%	1%	0%
Sex with HIV+ man within 6 months	2%	<1%	0%
Ever had anal sex	55%	18%	0%
<b>Injection Drug Use</b>			
Ever injected drugs during lifetime	24%	2%	6%
Injected Heroin			
Ever Injected	17%	1%	6%
Injected w/in 6 months	9%	1%	0%
Injected during sex	6%	1%	0%
Injected Speed			
Ever Injected	14%	1%	0%
Injected w/in 6 months	6%	<1%	0%
Injected during sex	4%	<1%	0%

## 14

# HIV/AIDS among Adolescents and Young Adults

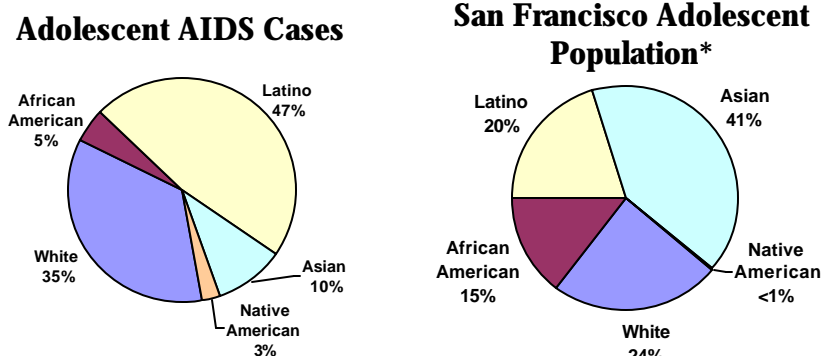
## AIDS surveillance data

As of December 31, 2000, 40 AIDS cases among adolescents (aged 13-19 years) and 531 cases among young adults (aged 20-24 years) were diagnosed in San Francisco (Table 14.1). The characteristics of young adults with AIDS are similar to other adults; the majority is MSM, white, and male. Male-male sex also accounts for the greatest proportion of adolescent AIDS cases. However, in contrast to young adults in which MSM-IDU are the second most frequent risk group, transfusion/hemophilia-related cases account for 22% of adolescent AIDS cases. Thirteen percent of adolescent AIDS cases were perinatally acquired. Latinos (47%) and whites (35%) have the greatest representation among adolescent AIDS cases and are over-represented when compared with the general adolescent population in San Francisco (Figure 14.1).

**Table 14.1** Adolescent and young adult AIDS cases by risk, gender, and race/ethnicity, diagnosed through December 2000, San Francisco

	13-19 Years Old (N=40)	20-24 Years Old (N=531)
<b>Risk</b>		
MSM	32%	61%
IDU	0%	9%
MSM-IDU	17%	23%
Transfusion/Hemophilia	22%	2%
Heterosexual	8%	4%
Perinatal	13%	0%
Unidentified	8%	1%
<b>Gender</b>		
Male	85%	94%
Female	15%	6%
<b>Race/Ethnicity</b>		
White	35%	63%
African American	5%	14%
Latino	47%	18%
Asian/Pacific Islander	10%	4%
Native American	3%	1%

**Figure 14.1** Adolescent AIDS cases diagnosed through December 2000 and San Francisco adolescent population by race/ethnicity



\* California Department of Finance population projection for 2000.

# HIV/AIDS among Children

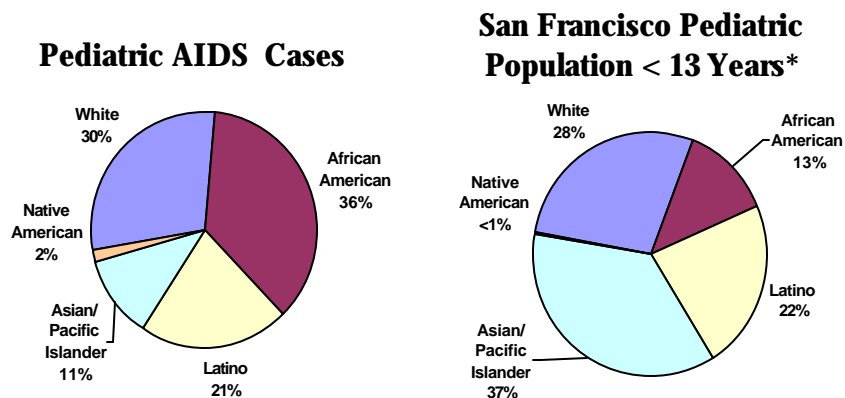
## AIDS surveillance data

The first pediatric AIDS case was diagnosed in San Francisco in 1980. Since that time, a cumulative total of 61 cases have been diagnosed in children less than 13 years of age in San Francisco through December 31, 2000. The number of pediatric AIDS cases found in San Francisco is lower than other cities in the United States with comparable prevalence of AIDS. This is due primarily to the lower rate of HIV and/or AIDS in women of childbearing years in San Francisco compared with other cities (females represent only 4% of cumulative AIDS cases in San Francisco). Of the 61 pediatric AIDS cases, 45 (74%) were classified as having acquired HIV infection perinatally (Table 15.1). Males and females are evenly distributed among pediatric AIDS cases. Proportionally, African American children are over-represented among pediatric AIDS cases (36%) when compared with the general pediatric population in San Francisco (13%) (Figure 15.1).

**Table 15.1** Percent of cumulative pediatric AIDS cases by exposure category, gender, and race/ethnicity, San Francisco, December 2000

Exposure Category	Cumulative Pediatric AIDS (N=61)
Transfusion/Hemophilia	26%
Perinatal	74%
<b>Gender</b>	
Male	51%
Female	49%
<b>Race/Ethnicity</b>	
White	30%
African American	36%
Latino	21%
Asian/Pacific Islander	11%
Native American	2%

**Figure 15.1** Pediatric AIDS cases, diagnosed through December 2000, and San Francisco population by race/ethnicity



\* California Department of Finance population projection for 2000.

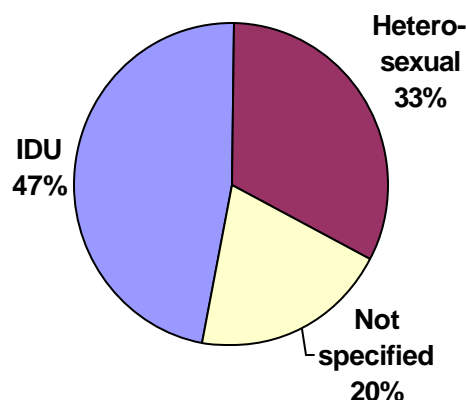
Among the perinatally acquired AIDS cases, 47% of their HIV-infected mothers acquired HIV infection through injection drug use, 33% through heterosexual contact, and 20% did not have a risk reported (Figure 15.2).

### Perinatal HIV data

Although HIV is not currently a reportable condition, data on HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project (see Technical Notes “Pediatric Spectrum of Disease”). A perinatal HIV exposure case was defined as a child less than or equal to 12 years old born to a mother documented to have HIV before delivery and without a history of blood or blood product transfusion before 1985.

Through December 31, 2000, 275 infants were born to HIV-infected mothers in San Francisco. Fifty-three (19%) of these infants were confirmed as HIV infected, 202 (73%) seroreverted, and 20 (7%) are of unknown serostatus (Table 15.2). The majority (53%) of perinatally exposed infants were African American. Whites and Latinos each accounted for 19% of the infants.

**Figure 15.2** Perinatally acquired AIDS cases by mother's exposure category, diagnosed through December 2000, San Francisco

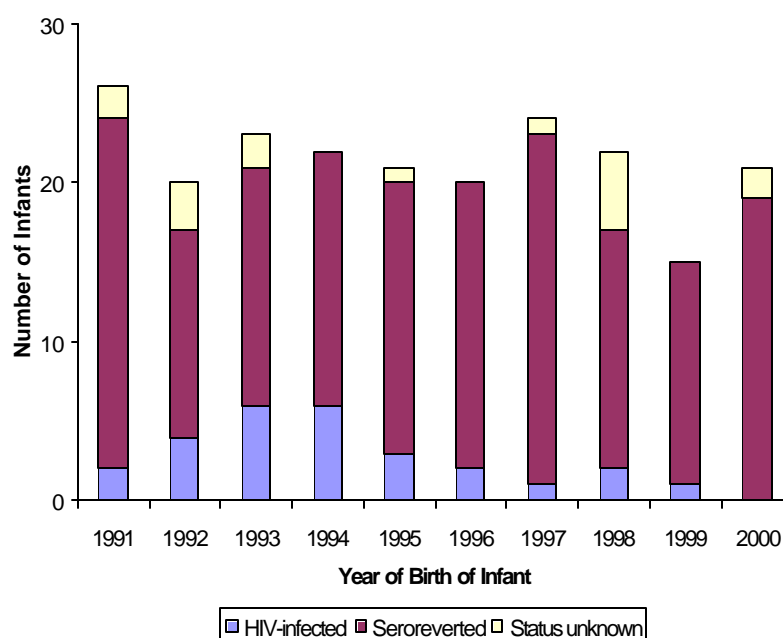


**Table 15.2** Infants born to HIV-infected mothers by infant's HIV status and race/ethnicity, San Francisco, through 2000

	N (%)
<b>Total</b>	<b>275</b>
<b>Infant HIV Status</b>	
HIV-infected	53 ( 19 )
Seroreverted (HIV-)	202 ( 73 )
Unknown	20 ( 7 )
<b>Race/Ethnicity</b>	
White	51 ( 19 )
African American	147 ( 53 )
Latino	52 ( 19 )
Asian/Pacific Islander	19 ( 7 )
Other/Unknown	6 ( 2 )

In more recent years, the number of perinatally exposed infants who were confirmed as HIV infected has declined; between 1996 and 1999, there were only six HIV infected infants born to infected women in San Francisco (Figure 15.3). This is due to the improved therapies for the mother throughout her pregnancy and to the use of prophylaxis in the mother and infant to prevent perinatal transmission.

**Figure 15.3** Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1991-2000



## 16

# HIV/AIDS among Transgender Persons

## AIDS surveillance data

Persons with AIDS are categorized as transgender if information regarding changes in gender identity is listed in the medical record. Information on transgender has been collected since 1996. As of December 31, 2000, a total of 249 transgender AIDS cases have been diagnosed (Table 16.1). Comparison of transgender AIDS cases to the total number of AIDS cases diagnosed through December 31, 2000 demonstrates some important differences. Seventy percent of transgender cases were nonwhite compared to 26% of total AIDS cases. Transgender persons with AIDS were more likely to inject drugs than were total AIDS cases (53% and 20%, respectively). Transgender AIDS cases were also younger than total AIDS cases.

**Table 16.1 Characteristics of transgender<sup>#</sup> AIDS cases and cumulative AIDS cases diagnosed through December 2000, San Francisco**

	Transgender AIDS Cases Diagnosed through December 2000		AIDS Cases Diagnosed through December 2000	
<b>Total</b>	<b>249</b>		<b>27,422</b>	
<b>Race/Ethnicity</b>				
White	74	30%	20,321	74%
African American	81	33%	3,298	12%
Latino	70	28%	2,899	11%
Asian/Pacific Islander	22	9%	775	3%
Native American	2	1%	129	<1%
<b>Injection Drug Use</b>				
Yes	131	53%	5,388	20%
No	118	47%	22,034	80%
<b>Age at Diagnosis</b>				
0 - 19	2	1%	101	<1%
20 - 29	70	28%	3,259	12%
30 - 39	112	45%	12,560	46%
40 - 49	53	21%	8,417	31%
50+	12	5%	3,085	11%

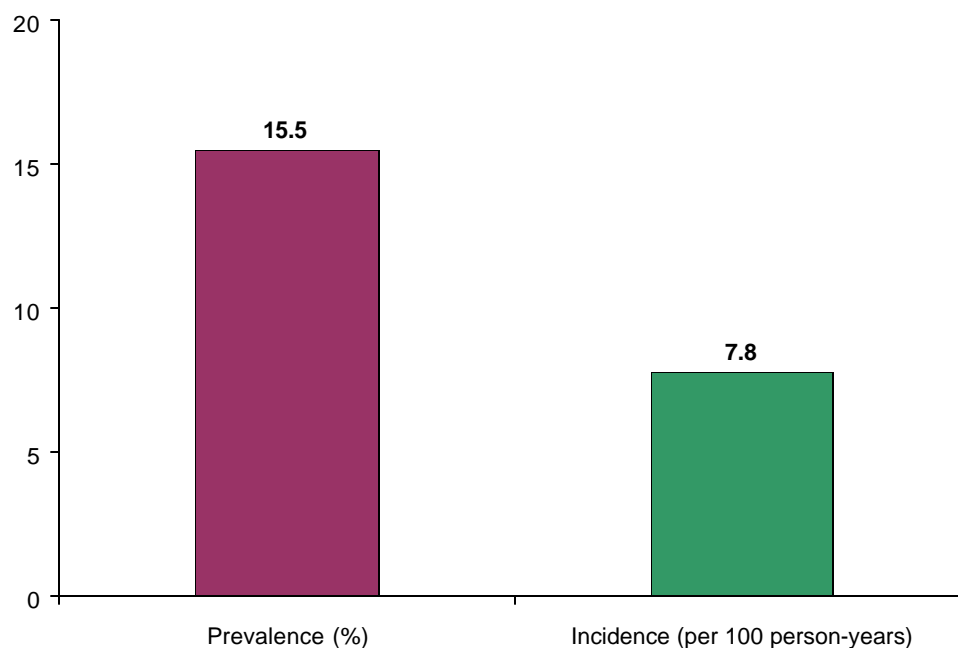
<sup>#</sup> See Technical Notes "Transgender Status."



## HIV incidence and prevalence among male-to-female transgenders

Data are available for male-to-female (MTF) transgendered persons who received voluntary HIV counseling and testing at San Francisco confidential and anonymous testing sites between 1997 and 2000. The sample includes only those who self-reported a prior HIV-negative test. HIV seroconversions were identified as those who tested HIV positive at the time of the current test. The seroprevalence among MTF transgendered persons who tested at HIV confidential and anonymous test sites between July 1997 and June 2000 was 15.5% and the incidence was 7.8 per 100 person-years.

**Figure 16.1** HIV prevalence and incidence among transgendered persons testing at HIV confidential and anonymous testing sites, July 1997-June 2000



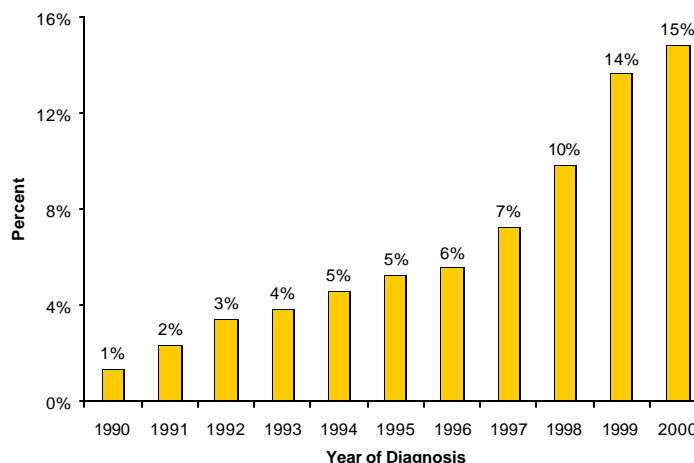
## 17

## Homeless Persons with AIDS

## AIDS surveillance data

Information on homelessness among persons diagnosed with AIDS has been collected since 1990. The proportion of persons with AIDS who are homeless at the time of diagnosis has been increasing each year since 1990 (Figure 17.1). Fifteen percent of AIDS cases diagnosed in 2000 were homeless at the time of their diagnosis. Compared to the total number of AIDS cases diagnosed between 1990 and 2000, homeless persons with AIDS were more likely to be women, nonwhite, injection drug users, and younger (Table 17.1).

**Figure 17.1** Percent of homeless AIDS cases by year of diagnosis, San Francisco, 1990-2000



**Table 17.1** Characteristics of homeless AIDS cases and AIDS cases diagnosed between 1990 and 2000, San Francisco

	Homeless AIDS Diagnosed 1990-2000 (N=823)	AIDS Cases Diagnosed 1990-2000 (N=17,621)
<b>Gender</b>		
Male	87%	95%
Female	13%	5%
<b>Race/Ethnicity</b>		
White	44%	70%
African American	39%	14%
Latino	15%	12%
Other	2%	4%
<b>Exposure Category</b>		
MSM	21%	74%
IDU	43%	9%
MSM-IDU	32%	13%
Heterosexual Contact	3%	2%
Other	1%	2%
<b>Age at Diagnosis</b>		
0 - 19	<1%	<1%
20 - 29	19%	11%
30 - 39	47%	45%
40 - 49	27%	32%
50+	7%	12%

## 18

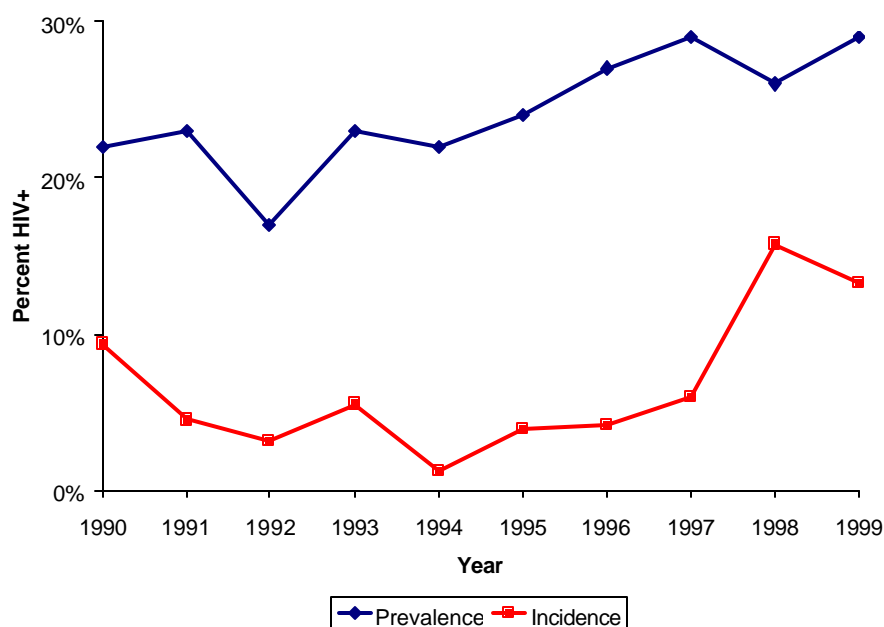
# Sexually Transmitted Diseases and HIV Infection

## HIV seroprevalence and seroincidence data

### *STD Clinic Survey*

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic. Application of the Sero-logic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al, in press). Information on diagnosis of gonorrhea was collected between 1990 and 1999. Among patients who were diagnosed with gonorrhea at the time of blinded HIV testing, the prevalence increased from 22% in 1990 to 29% in 1999 (Figure 18.1). The HIV seroincidence among patients diagnosed with gonorrhea fluctuated (range 1% to 11%) but was high in virtually every year examined.

**Figure 18.1** HIV prevalence and incidence among STD clinic patients diagnosed with gonorrhea by year, San Francisco, 1990-1999

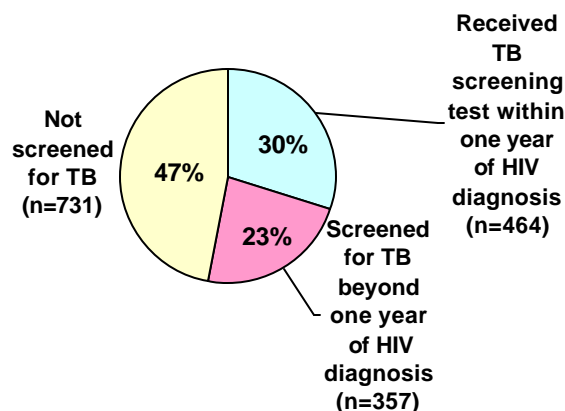


## 19

# Tuberculosis Screening among Persons with AIDS

HIV infection is known to increase the risk of progression from tuberculosis (TB) infection to active TB disease. All persons who are HIV positive or who are at risk for HIV infection should be screened for TB. In order to evaluate the missed opportunities to prevent TB in persons with AIDS, we conducted medical chart review to collect additional information on TB screening. Of the 1,552 persons diagnosed with AIDS between 1996 and 1997, only 30% received a TB screening test within one year of their HIV diagnosis (Figure 19.1). Women, nonwhites, IDU, and persons diagnosed in public health care facilities were more frequently tested for TB within one year of their HIV diagnosis (Table 19.1).

**Figure 19.1 TB testing among AIDS cases diagnosed in 1996-1997, San Francisco**



**Table 19.1 Percent of persons diagnosed with AIDS in 1996-1997 who had been tested for TB within one year of HIV infection, San Francisco**

	Number of Persons Diagnosed with AIDS in 1996-1997*	Percent Tested for TB within One Year of HIV Infection
<b>Total</b>	<b>1,552</b>	<b>30%</b>
<b>Gender</b>		
Male	1,432	29%
Female	120	40%
<b>Race/Ethnicity</b>		
White	964	24%
African American	301	39%
Latino	220	40%
Other	67	40%
<b>Risk for HIV</b>		
MSM	1,060	26%
IDU	237	38%
MSM-IDU	182	39%
Other	73	34%
<b>Diagnosing Facility #</b>		
Public	712	41%
Private	697	17%
Other	143	36%

\* Excludes cases for whom chart review is not available.

# Excludes persons who were diagnosed at a facility outside of San Francisco.

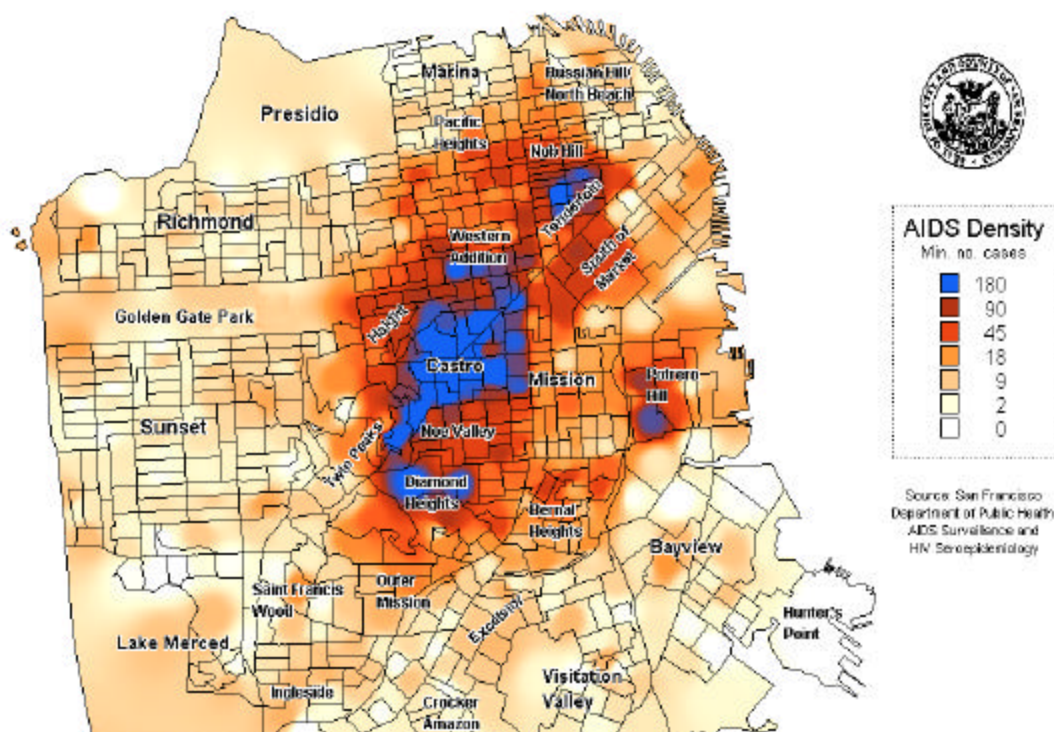
## 20

# Geographic Distribution of AIDS

Displaying the number of AIDS cases in given neighborhoods demonstrates that AIDS cases, particularly among the various risk groups, are not evenly distributed around the City. Selected neighborhoods, notably the Castro and Tenderloin, are home to a greater number of AIDS cases than many of the outlying sections of the City. Understanding where people live at the time of their AIDS diagnosis can be useful in establishing medical, social, and prevention services.

The vast majority of MSM with AIDS resided in the Castro section of San Francisco at the time of their AIDS diagnosis (shown in blue, Map 20.1). In addition to the Castro, parts of Diamond Heights, Potrero Hill, and the Tenderloin have been home to the greatest density of MSM with AIDS. Each of these sections have been home to at least 180 MSM AIDS cases. The neighborhoods that are adjacent to these

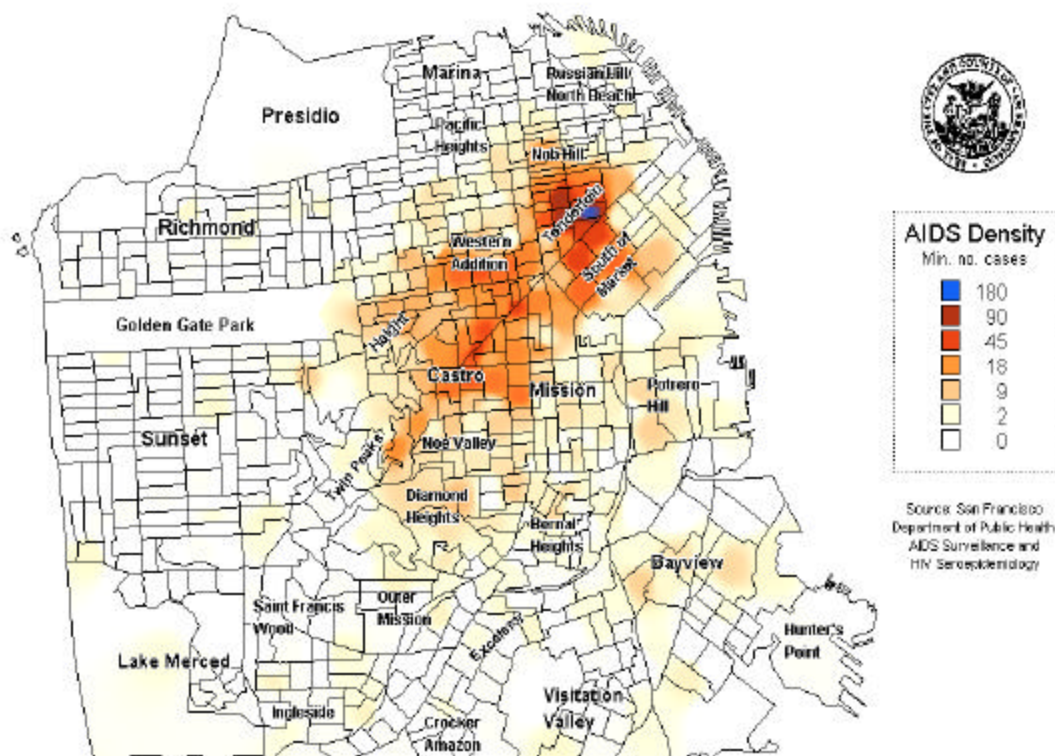
**Map 20.1** AIDS density among MSM in San Francisco, 2000



areas with the greatest density of MSM AIDS cases have high but somewhat lower number of MSM AIDS cases. Not surprisingly, the neighborhoods with the greatest density of MSM AIDS cases are those neighborhoods in which large number of MSM have resided. The outlying sections of the City such as the Sunset and Richmond districts have been home to few MSM with AIDS.

Although the number of MSM with AIDS who also injected drugs (MSM-IDU) is not as great as MSM non-IDU AIDS cases, the residence at the time of AIDS diagnosis is similar (Map 20.2). The density of MSM-IDU in the Tenderloin remains quite high with a minimum of 180 cumulative cases in that neighborhood.

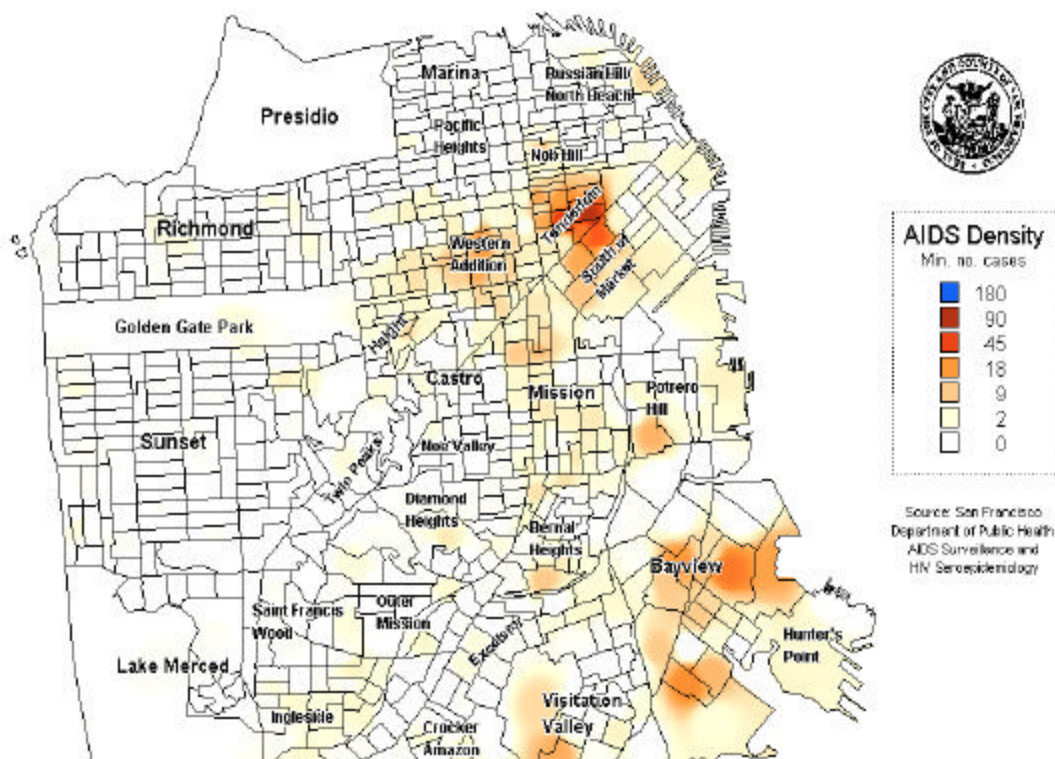
**Map 20.2 AIDS density among MSM-IDU in San Francisco, 2000**





Heterosexual IDU reside predominantly in the Tenderloin, Western Addition, Bayview, and Visitation Valley (Map 20.3). Of these neighborhoods, the greatest density of heterosexual IDU AIDS cases is in the Tenderloin. Overall, the density of heterosexual IDU AIDS cases is less than the density of MSM AIDS cases.

**Map 20.3 AIDS density among non-MSM IDU in San Francisco, 2000**



Heterosexual contact has been an infrequent transmission category among San Francisco AIDS cases. This is demonstrated in Map 20.4, in which none of the highlighted areas contain more than 18 AIDS cases. The neighborhoods in which heterosexual non-IDU AIDS cases reside are similar to the heterosexual IDU AIDS cases. In contrast to the Castro, which had the highest density of MSM AIDS cases, none of the heterosexual AIDS cases resided in the Castro.

**Map 20.4 AIDS density among heterosexuals in San Francisco, 2000**









# Technical Notes

## 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. Population denominators are based on the population projections for the years 1991-2000, from the Demographic Research Unit, Department of Finance, California ([www.dof.ca.gov](http://www.dof.ca.gov)).

## AIDS Survival

Survival was calculated as the time between the date of first AIDS-defining opportunistic illness (AIDS-OI) and the date of death. Persons who met only the 1993 AIDS case definition (largely CD4 count <200 or percent <14%) were not included until they developed an AIDS-OI. The occurrence of AIDS-OI and 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, 1998. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 1998, whichever was more recent. The median number of months of survival by year of AIDS-OI is presented only through 1996 because longer follow-up time is needed for persons diagnosed with an AIDS-OI in 1997 or later. Similar methods were used in previous published analyses of AIDS survival (Schwarcz, et al., 2000; Katz, et al., 1998).

## Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 9th Revision (ICD-9) by state nosologists or nosologists at the National Center for Health Statistics. These codes are then processed and evaluated using a computer system to determine the underlying and contributory causes of death. We obtained the ICD-9 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 the match with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044. In addition, the following conditions, if listed on the death certificates, are included as "AIDS defining conditions": candidiasis, cervical cancer, coccidioidomycosis, cryptococcosis, cryptosporidiosis, cytomegalovirus, HIV encephalopathy, herpes simplex, histoplasmosis, isosporiasis, Kaposi's sarcoma, lymphoid interstitial pneumonia, lymphomas, mycobacterial infections, pulmonary tuberculosis, extrapulmonary tuberculosis, *Pneumocystis carinii* pneumonia, progressive multifocal leukoencephalopathy, salmonella sepsis, toxoplasmosis, HIV wasting.

## Grouping of Data Categories

Data regarding certain race/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 and Native American; “Other” in the Exposure Category breakdown includes transfusion, hemophilia, heterosexual, perinatal AIDS, or persons of unidentified risk.

## HIV Seroprevalence and Seroincidence Surveys

The San Francisco Department of Public Health HIV Seroepidemiology Unit has conducted unlinked cross-sectional HIV prevalence surveys in selected clinics in San Francisco serving populations at high risk for HIV infection. Settings included the municipal sexually transmitted disease (STD) clinic and the city jail. Residual blood specimens originally collected for routine clinical purposes are tested for HIV antibodies after all personal identifying information has been removed from the specimen. Neither HIV test results nor risk information can be linked to individuals. Detailed descriptions of these surveys have been described elsewhere (Dondero, et al., 1990; Pappainoanou, et al., 1990; Schwarcz, et al., 1995).

HIV seroincidence was derived by applying the Serological Testing Algorithm for Recent HIV Seroconversion (STARHS) to HIV positive specimens that were collected in the seroprevalence surveys and from anonymous voluntary HIV counseling and testing sites (Janssen, et al., 1998; McFarland, et al., 1999). Retested HIV-positive specimens that were nonreactive on the less sensitive assay were defined as recent HIV infections (seroconverting within the preceding 129 days). HIV incidence was calculated as the number of recent infections divided by the number of recent infections plus the number of HIV negative specimens. HIV incidence, expressed as percent per year, was estimated by multiplying the rate of recent infection by  $(365 \div 129) \times 100$ .

## Pediatric Spectrum of Disease

The Pediatric Spectrum of Disease (PSD) project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States, including Northern California (Maldonado, 1996). In Northern California, hospital surveillance for children less than 13 years old infected with HIV or for infants born to infected mothers has occurred at eight pediatric hospitals (including the University of California at San Francisco and San Francisco General Hospital) (Maldonado, et al., 1995). 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.

## Record Based Incidence Studies (RBIS)

HIV incidence was retrospectively calculated among persons who repeatedly tested for HIV antibody between 1994 and 1998 through publicly funded HIV counseling and testing sites or at San Francisco's county hospital or one of its affiliated satellite community clinics. Linkage of HIV test results in computerized databases identified "seroconverters" as individuals who had a negative antibody test followed by a positive test. The interval between tests was used as the person-time at risk (Kellogg, et al., submitted).

## Transgender Status

One population that has traditionally been overlooked in reports of AIDS surveillance is persons who self-identify as transgender. Traditionally, transgendered persons had been coded by their biological gender. In San Francisco, we recognize the unique identity of transgendered individuals and the need to correct this historical oversight. In September 1996, the San Francisco Health Department began noting transgender status when this information is contained in the medical record. Transgendered individuals are listed as either male-to-female or female-to-male. Please note that there are several limitations to our transgender data. We believe that our report likely underestimates the number of transgendered persons affected by AIDS because data collected for AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but that is not recorded in the medical record is generally not available for the purposes of 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.

## Treatments

The type and starting date of HIV antiretroviral therapy and prophylaxis against *Pneumocystis carinii* pneumonia or *Mycobacterium avium* complex is obtained at time of initial case report and through retrospective and prospective reviews of medical records. Persons noted to have received a protease inhibitor or a nonnucleoside reverse transcriptase inhibitor were considered to have received highly active antiretroviral therapy (HAART). Use of HIV therapies among persons living with AIDS by year was calculated as the number of persons who were alive at the end of each year and who started the treatment prior to or during that year, divided by the total number of persons living with AIDS at the end of each year. Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk was calculated as the number of persons living with AIDS as of December 31, 2000, for each gender, race, or risk group who were noted to have ever received HAART, divided by the total number of persons living with AIDS as of December 31, 2000, for each gender, race, and risk group. Persons who were diagnosed at a facility outside of San Francisco and persons whose treatment information is not available were excluded.



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