

# **AIDS IN WOMEN**

## **COUNTY OF SAN DIEGO, 2004**

**County of San Diego**  

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**Health and Human  
Services Agency,  
HIV/AIDS Epidemiology Unit**



# AIDS IN WOMEN, COUNTY OF SAN DIEGO, 2004

County of San Diego  
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[www.sdhiv aids.org](http://www.sdhiv aids.org)

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**AIDS IN WOMEN, COUNTY OF SAN DIEGO, 2004**

The first female AIDS case in the County of San Diego was diagnosed in 1984. Over the course of the epidemic in the County, women have comprised 927 (7.6%) of the 12,280 AIDS cases diagnosed; the proportion of AIDS cases that are female has increased significantly ( $p < 0.001$ ) over time (see Table 1). In recent years (2000-2004), the proportion of women has increased to almost 11% of all AIDS cases diagnosed in the County.

**MODE OF TRANSMISSION**

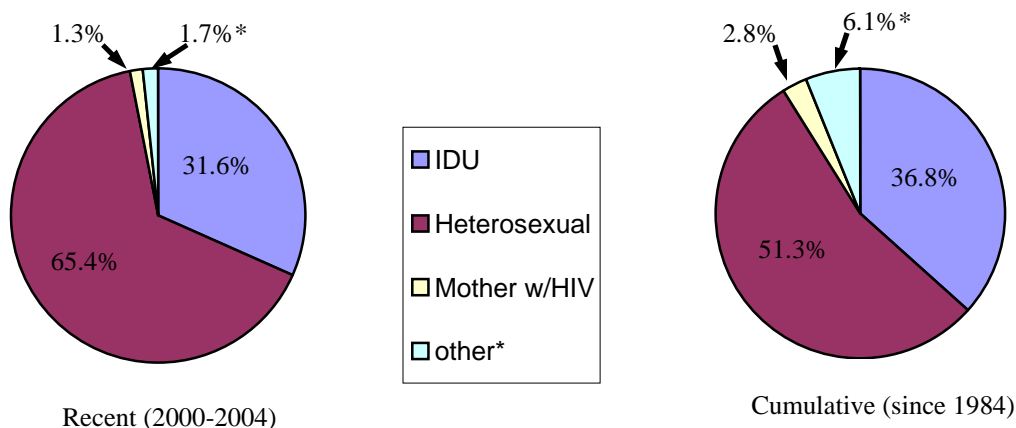
In male AIDS cases the predominant risk for transmission identified is “Men

who have Sex with Men” (MSM), while more than half (51.3%) of all female AIDS cases in the County of San Diego are associated with heterosexual contact (see Figure 1) and there has been a significant increase ( $p < 0.001$ ) in the proportion of cases attributed to heterosexual contact over 5-year periods (see Table 2). Of the 496 women with heterosexual transmission, more than 40% had an Injecting Drug User (IDU) as a sexual partner, almost a third had sex with a bisexual male, and slightly less than a quarter had sex with a partner known to have HIV or AIDS with no risk specified (see Table 3). Less

**TABLE 1:** Number and Percent of Female and Male AIDS Cases by Five-Year Time Periods, County of San Diego

	Female		Male	
	number	percent of cases for time period	number	percent of cases for time period
before 1985	1	1.3%	78	98.7%
1985-1989	88	4.3%	1970	95.7%
1990-1994	311	6.5%	4467	93.5%
1995-1999	293	9.1%	2920	90.9%
2000-2004	234	10.9%	1918	89.1%
<b>Total cases</b>	<b>927</b>	<b>7.6%</b>	<b>11353</b>	<b>92.4%</b>

**FIGURE 1:** Recent (2000-2004) and Cumulative Modes of HIV Transmission in Females, County of San Diego



\*Includes transfusion/transplantation, clotting disorders, risk not specified, and other confirmed.

**TABLE 2:** Modes of HIV Transmission in Females Over 5-year Time Periods, County of San Diego

	Time period of diagnosis				Cumulative
	1985-1989	1990-1994	1995-1999	2000-2004	
Heterosexual contact	35.2%	47.3%	49.5%	65.4%	51.4%
IDU	28.4%	37.3%	43.0%	31.6%	36.8%
Transfusion/Transplantation	26.2%	11.6%	3.1%	0.4%	7.1%
Mother w/HIV	8.0%	2.3%	3.1%	1.3%	2.8%
Other*	2.2%	1.5%	1.3%	1.3%	1.9%
<b>Total in group</b>	<b>88</b>	<b>311</b>	<b>293</b>	<b>234</b>	<b>926</b>

\*Includes clotting disorders, risk not specified, and other confirmed risks

than 3% had a sexual partner who had had a transfusion or transplant, or who had hemophilia. In 2004, the CDC estimates that 33% of women with heterosexual contact listed as risk for transmission had an IDU sex partner which is similar to that seen in the County of San Diego, but 60% had a partner known to have HIV or AIDS compared to 24% in the County, and only 6% had a bisexual male partner compared to 32% in the County.

Following heterosexual contact, the next most common risk identified is Injecting Drug Use (IDU) which accounts for more than a third (36.8%) of all female AIDS cases diagnosed in the County (see Table 2). Although there was a significant ( $p=0.010$ ) increase in the proportion of cases attributed to IDU from the 1985-1989 to 1995-1999 time periods, there was a de-

cline in this proportion in 2000-2004.

**RACE/ETHNICITY**

There have been more whites among female AIDS patients, 40.7%, than other races/ethnicities (see Table 4). The rate of AIDS in females and males, however, is consistently highest in blacks, followed by Hispanics and the rate of AIDS is higher in males than females across all races/ethnicities (see Table 5). In addition, the proportion of whites in female AIDS cases is significantly smaller ( $p<0.001$ ) than the proportion seen in male cases, while the proportion of black, Hispanic, and Asian/Pacific Islander female AIDS cases is significantly larger ( $p<0.001$ ) than in male cases. There is no difference between females and males in the proportion of Native American cases.

**TABLE 3:** Sexual Partners of Women Diagnosed with AIDS and with Heterosexual Contact as Mode of Transmission, County of San Diego

Sex with a/an	Percent
IDU	40.8
Bisexual male	32.6
Partner known to have HIV/AIDS	23.7
Known hemophiliac/transfusion recipient	2.9
<b>Total with heterosexual contact</b>	<b>476</b>

**AIDS IN WOMEN, COUNTY OF SAN DIEGO, 2004**

**TABLE 4:** Race/Ethnicity in Female AIDS cases over 5-year Time Periods and Male AIDS Cases, County of San Diego

	Females				Males	
	1985-1989	1990-1994	1995-1999	2000-2004	cumulative	cumulative
White	53.4%	48.6%	37.5%	29.5%	40.7%	64.4%
Black	23.9%	23.2%	27.0%	24.4%	24.7%	11.5%
Hispanic	19.3%	23.8%	28.0%	43.6%	29.7%	21.6%
Asian/Pacific Islander	3.4%	4.5%	6.5%	1.7%	4.3%	1.9%
Other*	0.0%	0.0%	1.0%	0.9%	0.5%	0.6%
Total in group	88	311	293	234	926	11,275

\*Includes Native Americans.

Note: Percentages may not total 100 due to rounding.

The proportion of whites in female AIDS cases has significantly decreased over 5-year time periods ( $p < 0.001$ ) (see Table 4). As the proportion of whites has decreased, the proportion of Hispanic cases has increased significantly ( $p < 0.001$ ) over the same 5-year time periods. There has been no significant change in the proportion of blacks ( $p = 0.654$ ), Asians/Pacific Islanders ( $p = 0.386$ ), or Native Americans ( $p = 0.386$ ). The case rate amongst white and black female AIDS cases has decreased since 1995 but remained stable in Hispanics, and has declined in males across all races/ethnicities.

In 2004, AIDS case rates for females in the County of San Diego differed from the CDC national estimates. The CDC 2004 estimate for cases in white female (2.1 per 100,000) is greater than the 1.3 per 100,000 seen in the County and the CDC 2004 estimate for Hispanic females (11.1 per 100,000) is more than twice the 5.3 per 100,000 rate seen in the County (see Table 5). The CDC estimate for black females (48.2 per 100,000) is almost four times the 13.2 per 100,000 seen in the County. Rates are higher for males than females in all races/ethnicities.

**TABLE 5:** AIDS Case Rates in Female and Male Cases Over Time by Race/Ethnicity, County of San Diego

Race/Ethnicity	Female				Male			
	1990	1995	2000	2004	1990	1995	2000	2004
White	2.7	4.8	2.0	1.3	63.1	70.6	24.1	22.5
Black	17.5	17.1	15.1	13.2	87.9	119.4	73.6	51.9
Hispanic	6.5	6.9	5.3	5.3	47.4	59.4	38.0	27.4
Asian/Other*	**	7.0	**	**	13.3	14.3	7.5	6.8
All races/ethnicities	4.1	6.2	3.5	2.9	57.4	65.2	28.6	23.4

\*Includes Native Americans.

\*\*Rates not calculated for fewer than 5 events.

Rates per 100,000 population.

**TABLE 6:** Age at AIDS Diagnosis in Recent\* (2000-2004) and Cumulative Adolescent and Adult Female and Male AIDS Cases, County of San Diego

	Female		Male	
	recent*	cumulative	recent*	cumulative
mean age (years)	39.6	38.1	40.0	37.9
median age (years)	38.0	37.0	39.0	37.0
range (years)	14-78	13-88	13-92	13-92
total cases	233	899	1,916	11,243

**AGE AT DIAGNOSIS**

Recent and cumulative average ages of female and male AIDS cases are shown in Table 6. There are no significant differences in the mean age at diagnosis between recent or cumulative female and male cases ( $p=0.052$ ). In recently diagnosed (2000-2004) female cases there are no differences in mean age between races/ethnicities, but over the entire epidemic Hispanic women (mean age 34.7 years) are significantly ( $p=0.025$ ) younger than whites (mean age 38.3 years).

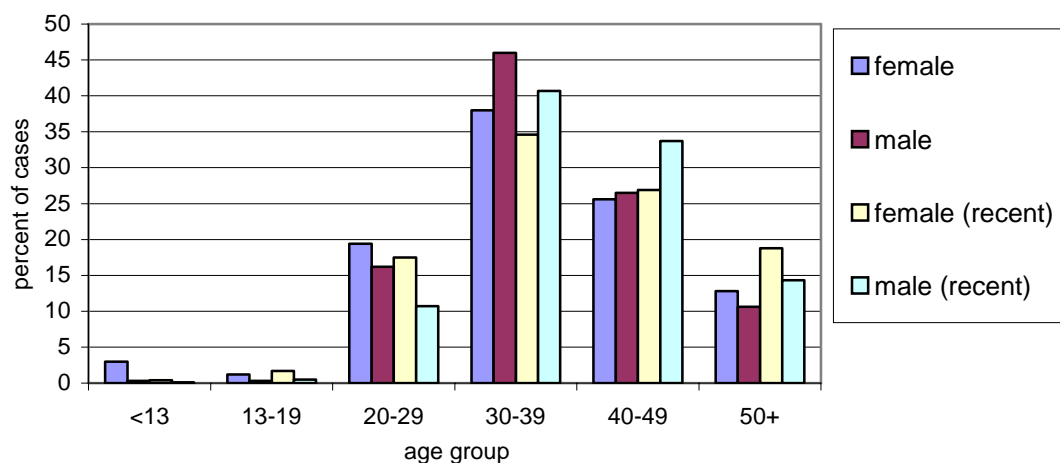
Over the course of the epidemic, both

female and male cases have had the most cases in the 30-39-year age group at the time of diagnosis (36% and 48% respectively) although the peak is this age group is not as pronounced in females (see Figure 2). In recent years (2000-2004), although most cases are still seen in 30-39-year olds, there are increasing female and male cases in the 40-49-year age group.

**CURRENT AGE (2004)**

The average age of female AIDS cases alive in 2004 in the County of San Diego is about 43 years (see Table 7). Although

**FIGURE 2:** Recent (2000-2004) \* and Cumulative Male AIDS Cases by Age Group at Time of Diagnosis, County of San Diego



**TABLE 7:** Age in 2004 of Living Female and Male AIDS Cases Alive in the County of San Diego

	Females	Males
Mean age (years)	42.8	44.5
Median age (years)	42.0	44.0
Range (years)	3-79	5-85
Total cases	511	5,064

male AIDS cases alive in 2004 were statistically significantly older ( $p < 0.001$ ) than female cases, their mean age of 44.5 years may not be clinically significantly greater.

**AGE AT DEATH**

Of all resident female AIDS cases in the County of San Diego who have died, the mean age at the time of death is 40.6 years. There is no difference between female and male AIDS cases in the mean age at death.

**SURVIVAL**

As of 2004, there is a significantly ( $p < 0.001$ ) greater proportion of all female AIDS (55%) cases still alive compared to male cases (45%), and this difference remains when race/ethnicity and age are taken into account. When time period of diagnosis is taken into account however, the proportion of living female cases are significantly ( $p = 0.010$ ) greater than male cases only in the 1990-1994 time period (see Table 8). In addition, the five-year survival rate for cumulative AIDS cases is

**TABLE 8:** Length of Survival (months) by 5-year Time Periods in Deceased Female and Male AIDS Cases, County of San Diego

Gender	months, from AIDS diagnosis to death	time period of diagnosis			
		1985-1989	1990-1994	1995-1999	2000-2004*
Female	mean	25.2	26.4	36.0	10.8
	median	12.0	24.0	36.0	10.0
	range	0-180	0-180	0-108	0-60
	number deceased	82	209	87	37
	total cases in time period	88	3611	293	234
	percent deceased	93.2%	67.2%	29.7%	15.8%
Male	mean	22.8	26.4	27.6	9.6
	median	12.0	24.0	12.0	9.0
	range	0-204	0-144	0-120	0-60
	number deceased	1869	3316	776	250
	total cases in time period	1970	4467	2920	1918
	percent deceased	94.9%	74.2%	26.6%	13.0%

\*the number in this time frame is expected to increase over time.

significantly ( $p < 0.001$ ) greater in females (52.7%) than males (41.5%). The overall survival of female cases is also greater ( $p < 0.001$ ) than for male cases.

Over the course of the epidemic, the mean time from AIDS diagnosis to death, among those who have died, is 26.4 months for female cases and 24 months for male cases, but this difference is not significant (see Table 8). The average length of survival in those cases who have died was not significantly different between the 1985-1898 and 1990-1994 time-periods, but did increase significantly ( $p = 0.031$ ) from the 1990-1994 diagnosis time period to the 1995-1999 diagnosis time period in both females and males. It is not possible to make inferences on survival in the 2000-2004 time-period because of substantial expected increases in case deaths over time.

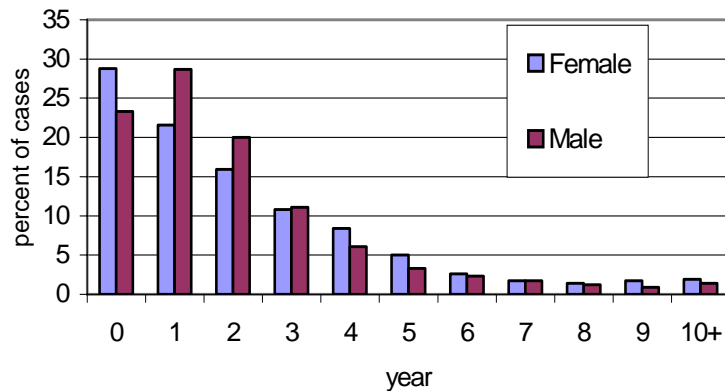
There are no difference in survival time from diagnosis to death in female cases across races/ethnicities or modes of transmission. Age is significantly

( $p = 0.003$ ) associated with survival time with increasing age associated with decreasing survival times, although the increases in age do not appear to be clinically significant.

The distribution of years of survival for female and male cumulative AIDS cases is shown in Figure 3. The majority of both female and male cases who have died have survival less than three years. Significantly more female than male cases have survival three or more years ( $p < 0.001$ ) although there is no difference in survival of less than one year. When the distribution of cases with less than one year of survival is examined over time periods (see Figure 4), significant differences between female and male cases are seen only in the 1985-1989 ( $p = 0.034$ ) time period; female cases are less likely to have survival of less than one year in this time period.

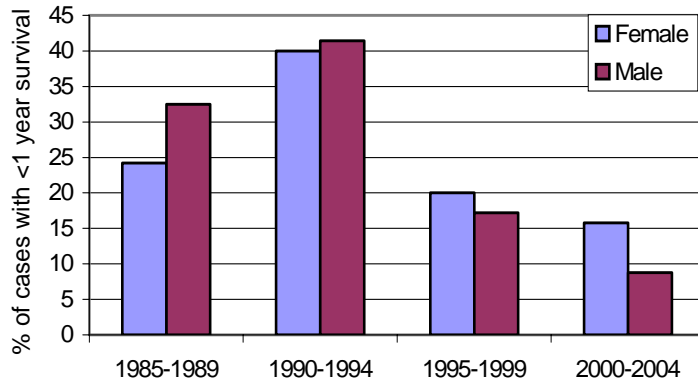
In 1993, the AIDS case definition was changed by the CDC to include patients in whom the absolute CD4 count dropped

**FIGURE 3:** Distribution of Time From AIDS Diagnosis to Death Among Cumulative Deceased Female and Male AIDS Cases, County of San Diego





**FIGURE 4:** Distribution of Female and Male AIDS Cases with Survival Less Than 1 Year by 5-Year Time Period, County of San Diego

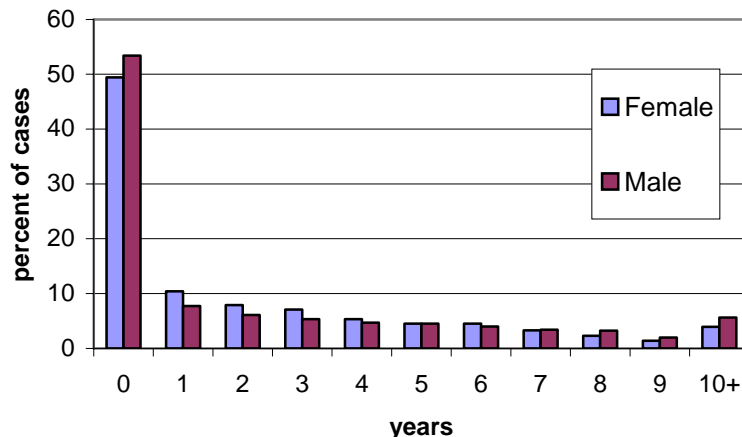


below 200 or the proportion of CD4 cells below 14%. Most of the cases with survival less than one year were diagnosed before 1995, many before the 1993 change in case definition to include lowered CD4 counts and percentages. These cases are more likely to have more advanced disease at the time of diagnosis than later cases after the 1993 case definition change. In Figure 4 it can be seen that there are fewer cases with survival less than one year after the 1990-1994 time period indicating more patients surviving longer.

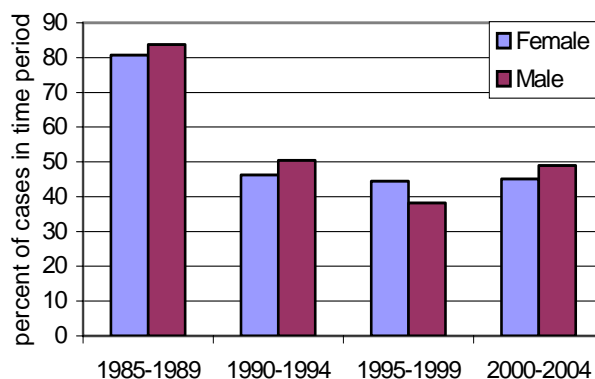
**TIME FROM HIV TO AIDS**

There is no statistical difference ( $p=0.090$ ) in the mean time from reported HIV diagnosis and AIDS between female (3.2 years) and male (3.6 years) AIDS cases (see Figure 5). Significantly fewer ( $p=0.029$ ) female AIDS cases (49%) in the County of San Diego had less than a year between HIV diagnosis and AIDS diagnosis than male cases (53%). Significantly fewer ( $p=0.032$ ) female than male AIDS cases had more than ten years between HIV and AIDS diagnoses.

**FIGURE 5:** Years from HIV Diagnosis to AIDS Diagnosis in Cumulative Female and Males AIDS Cases, County of San Diego



**FIGURE 6:** Distribution over Five-Year Time Periods of Female and Male AIDS Cases with Less Than One Year Between HIV Diagnosis and AIDS Diagnosis, County of San Diego



In recent years treatment options have expanded, not just for those with an AIDS diagnosis but also for those whose disease has not progressed beyond HIV infection. Increased treatment options for patients with HIV should lengthen the time from HIV diagnosis to AIDS diagnosis. Between the 1985-1989 and 1990-1994 time periods there is a significant decline in the proportion of cases with less than a year from HIV to AIDS diagnosis (see Figure 6). After this decline, there is no decrease in the proportion of female cases with less than a year from HIV to AIDS diagnosis over the other time periods, although there is a slight decrease over time in the proportion of male cases.

It is possible that the change in case definition to include those whose disease is not as advanced may decrease the time

from HIV diagnosis to AIDS diagnosis in some cases by identifying them as AIDS cases earlier in their disease progression. This may be balanced, in patients who are in care for their HIV disease, by treatment options that prolong the HIV only phase of disease by preventing declines in CD4 counts that result in an AIDS diagnosis.

**COUNTRY OF ORIGIN**

The majority of AIDS cases diagnosed in the County of San Diego, both female and male, were born in the United States (see Table 9). A significantly ( $p < 0.001$ ) higher proportion of cumulative female AIDS cases (27.1) were born outside the US than male cases (15.5). This is not unexpected as male cases have a higher proportion of whites, more than 97% of

**TABLE 9:** Country of Origin of Cumulative Female and Male AIDS Cases, County of San Diego

Origin	Females	Males
USA	72.9%	84.5%
US Dependency	1.4%	0.6%
Other	25.7%	14.9%
total in group	925	11348

whom were born in the US. Female cases are more likely to be Hispanic and Hispanics are less likely to be born in the US. This significant difference, however, is maintained when controlling for race/ethnicity ( $p=0.001$ ).

The majority of cases born outside of the US were born in Mexico. Female cases born outside the US were less likely ( $p<0.001$ ) to be born in Mexico than male cases and of those born outside of the US, female cases were more likely to come from Africa than male cases and less likely to come from Europe. There was little difference between male and female cases in the proportion of those coming from South America and Asia.

**RESIDENCE AT DIAGNOSIS**

Although the majority of AIDS cases in the County of San Diego lived in the city of San Diego at the time of their diagnoses, females cases (58.1%) were significantly ( $p<0.001$ ) less likely than male cases (75.1%) to have lived in the city of San

Diego at the time of diagnosis. Other than San Diego, the cities of Chula Vista, El Cajon, Escondido, and Oceanside had more than 3% each of the female cases, while only Chula Vista has more than 3% of male cases. This reflects, in part, the racial differences between female and male cases. There is a greater proportion of Hispanics and blacks in female cases and these race/ethnicities are more likely to live in other cities within the county.

Most AIDS cases diagnosed in the County of San Diego, 58%, were residing in the HHS Central region at the time of diagnosis (see Table 10). A significantly smaller ( $p<0.001$ ) proportion of female cases (41%) than male cases (60%) were living in this region at the time of diagnosis. The proportion of female cases in the Central region has increased significantly ( $p<0.001$ ) over 5-year time periods (see Table 9), while the proportion of male cases in this region has decreased significantly ( $p<0.001$ ). In the South region, the propor-

**TABLE 10:** Female and Male AIDS Cases by Health and Human Services Agency Regions Over Five-Year Time Periods, County of San Diego

Region	1985-1989		1990-1994		1995-1999		2000-2004		Cumulative	
	female	male	female	male	female	male	female	male	female	male
Central	35.2%	63.3%	36.3%	60.9%	45.1%	59.2%	46.2%	54.4%	41.4%	59.7%
East	17.0%	6.8%	9.6%	6.9%	8.5%	6.4%	12.0%	7.3%	10.6%	6.8%
South	9.1%	5.6%	15.8%	6.3%	13.0%	11.2%	18.4%	16.2%	15.0%	9.1%
North Coastal	11.4%	5.4%	12.5%	7.4%	14.0%	7.7%	8.1%	6.9%	11.8%	7.1%
North Inland	9.1%	3.6%	11.3%	4.2%	7.5%	4.4%	6.8%	4.4%	8.7%	4.2%
North Central	18.2%	15.4%	14.5%	14.3%	11.9%	11.1%	8.5%	10.9%	12.5%	13.2%
total	88	1970	311	4467	293	2920	234	1918	926	11353

tion female cases has not increased significantly ( $p=0.126$ ) but the proportion of males has increased ( $p<0.001$ ). The proportion of both female and male cases has decreased significantly ( $p<0.001$ ) in the North Central region.

The location of diagnosis does not necessarily represent the location of current residence or the area in which health or social services are sought or obtained. It is not unusual for a case to move to a different zip code area, city, or region after diagnosis. A case who does not move may still seek medical care elsewhere within the County.

#### **FACILITY OF DIAGNOSIS**

In both female (54.8%) and male cases (46.2%), the most common point of diagnosis of AIDS cases in the County of San Diego was the in-patient and out-patient hospital setting. Female cases were significantly ( $p<0.001$ ) more likely to be diagnosed in this setting than male cases even when controlling for race/ethnicity. Female cases were significantly less likely to be diagnosed in a correctional facility ( $p=0.044$ ) or in a physician's office ( $p<0.001$ ) than male cases even when controlling for race/ethnicity .

#### **LIMITATIONS**

The data presented in this report are dependent on accurate reporting from healthcare providers, laboratories, and patients. Patients, for many reasons, may

not wish to provide accurate current or historical information to their healthcare providers for reporting. Healthcare providers may not report complete information because it is not available to them, they wish to protect their patients' privacy, or other reasons. Each of these situations, and others, result in data that may not be accurate and these inaccuracies may impact analysis.

Caution should be exercised in the analysis of the most recent time period (2000-2004) because additional cases are likely to be reported over time. Retrospective case finding will continue; it is expected that cases will continue to be reported. Case reports are also updated as new information becomes available. When, for example, more information on risks is obtained, the database is updated and this may impact proportions and rates used in this and future analyses.

Some of the variables under study do not have sufficient numbers of occurrences to make statistical inferences. When small numbers are presented, caution should be exercised in the interpretation of data presented.

In 1993 the AIDS case definition was modified by the CDC to include those patients with evidence of HIV infection in whom the CD<sub>4</sub> absolute count dropped below 200 or in whom the percent of CD<sub>4</sub> cells fell below 14%. This increased the number of cases substantially and allowed for the identification of cases earlier in

their disease progress. It is likely that this has increased both the number of surviving cases and the length of their survival from diagnosis to death. The change in case definition and the increase in cases identified earlier in the course of disease may make comparisons to earlier cases, diagnosed after the onset of an opportunistic infection or other indication of a profoundly failing immune system, difficult.

Whenever possible, case information is updated as to vital status of cases. However, it is possible that some cases may have died, but the death not reported to the Community Epidemiology. Some of these cases may have left the area or state and died. This may result in inaccurate assumptions and survival calculations.

The County has a higher proportion of Hispanics and a lower proportion of blacks than do many states, the United States, and even some other counties within California. These racial/ethnic demographic differences make comparisons of the County of San Diego to the nation as a whole, and to other counties and states, difficult and must be taken into account when discussing the impact of the AIDS epidemic on the County of San Diego.

Comparisons are made in this report to CDC national estimates for rates and percentages of AIDS cases in terms of demographic and risk variables. It should be remembered that these are estimates

based on data submitted under many different state and local surveillance systems while the County data is based on individual cases reported. This can make these comparisons difficult to interpret.

**SUMMARY**

There have been 927 female AIDS cases reported in the County of San Diego since 1984, and females comprise 7.6% of the cumulative AIDS cases.

The most common mode of transmission identified in all female cases (51%) is heterosexual contact, and the proportion has risen over time. The next most common mode of transmission is IDU.

Among females with heterosexual transmission 41% had an IDU partner, 33% had a bisexual male partner, and 24% had a partner known to have HIV/AIDS.

Female cases are more evenly distributed amongst races/ethnicities than male cases. The proportion of females amongst white cases has decreased significantly while the proportion of Hispanics, blacks, and Asian/Pacific Islanders has increased.

The mean age at diagnosis of cumulative female and male cases is almost 38 years. Both female and male cases are most likely to be 30-39 years old at the time of diagnosis although there has been a shift toward 40-49 years of age in recent years (2000-2004).

In 2004, the average age of both females and males living with AIDS was about 43 years.

The average length of time from AIDS diagnosis to death in cumulative female cases is 26 months, not significantly different from male cases.

There is no difference in the mean time from HIV to AIDS diagnosis between female (3.2 yrs) and male (3.6 yrs) cases but a larger proportion of females than males have more than a year between HIV and AIDS diagnoses.

Female cases are less likely to be white, and more likely to be Hispanic or black, and born outside the US than non-male cases.

The majority of AIDS cases resided in San Diego at the time of diagnosis and in the HHSA Central region. Somewhat fewer female cases than male resided in the Central region. The proportion of female cases in the Central region has been increasing over time, but decreasing in the North Central region.

Female cases were more likely to be diagnosed in the hospital setting, and less likely to be diagnosed in a correctional facility or physician's office than male cases.

**DATA SOURCES:**

County of San Diego, HIV/AIDS Epidemiology Unit database and Annual Report SANDAG population estimates  
*HIV/AIDS Surveillance Report, 2004* (Vol. 16), Centers for Disease Control and Prevention  
*Profiles of General Demographic Characteristics, 2000*, US Dept of Commerce

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