

**AIDS IN  
MEN WHO HAVE  
SEX WITH MEN  
COUNTY OF SAN DIEGO  
2011**

**County of San Diego  
Health and Human Services Agency  
Division of Public Health Services  
Epidemiology & Immunization Services Branch**

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**HHSA**

HEALTH AND HUMAN SERVICES AGENCY



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The first Acquired Immunodeficiency Syndrome (AIDS) cases diagnosed, in 1981, in San Diego county were two homosexual men. Since then “Men who have Sex with Men” (MSM) has been, and continues to be, the most commonly reported mode of transmission for Human Immunodeficiency Virus (HIV) in those diagnosed with AIDS in the county. Cumulatively, as of 31 December, 2010, there have been 11,988 adult or adolescent (age over 12 years of age) AIDS cases in the county in MSM and MSM who also use injected drugs (MSM+IDU). This constitutes 90% of all male cases and 83% of all cases reported in the county. There are an additional 1,362 cases in males without MSM reported as mode transmission.

Rates are not calculated in this report because the number of persons who are MSM, IDU, or belong to other risk groups in San Diego county is not known. For purposes of this report, other modes of HIV transmission (these modes include IDU; heterosexual contact; receiving blood, blood products or tissues from another

person; maternal transmission; and occupational exposures) are collectively referred to as non-MSM unless otherwise stated. All cases used in the analysis are male and adult or adolescent (over 12 years of age).

### MEN WHO HAVE SEX WITH MEN

The MSM group consists of gay or bisexual men (MSM) and gay or bisexual men who also inject drugs (MSM+IDU). Because this group is defined by behavior and not self-identification, it is comprised of all cases reporting male sex partners as a risk for HIV transmission, including non-gay identified men who have male sex partners.

MSM is the most commonly reported transmission risk for HIV in San Diego county, both cumulatively and recently (2006-2010) (76% recently in male cases), followed by MSM+IDU (10% recently) (see Figure 1 and Table 1). The MSM group encompasses by far the highest proportion of male cases in the county (86% recently). This is a significantly ( $p=0.005$ ) greater

**FIGURE 1**

Recent (2006-2010) and Cumulative (1981-2010) Reported Risks of Transmission in Adult and Adolescent Male AIDS Cases, San Diego County

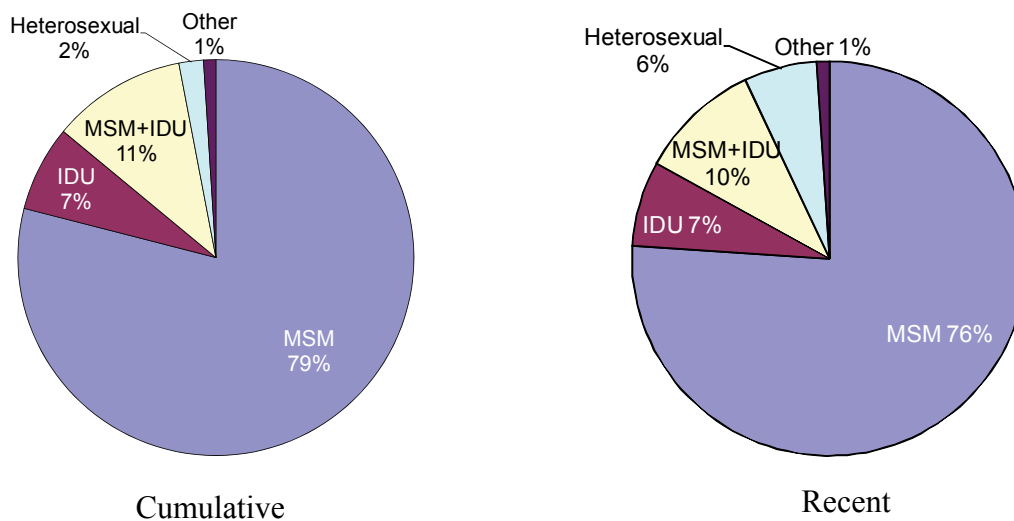


TABLE 1

Reported Modes of HIV Transmission Adult/Adolescent Male AIDS Cases Over 5-year Time Periods, San Diego County

	Time period of diagnosis						cumulative
	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	
MSM	87.3%	84.2%	80.1%	75.6%	74.3%	75.9%	78.8%
IDU	0.9%	3.6%	6.4%	8.5%	8.8%	6.5%	6.5%
MSM+IDU	7.5%	9.4%	11.4%	13.7%	11.7%	9.8%	11.5%
Heterosexual	0.5%	0.7%	0.5%	1.5%	4.6%	6.3%	2.0%
Other*	3.8%	2.1%	1.6%	0.7%	0.6%	1.5%	1.2%
Total cases	212	2,555	4,578	2,475	1,968	1,544	13,332

\*Includes transfusion, transplantation, hemophilia, maternal transmission, and not specified.

percent than the Centers for Disease Control and Prevention (CDC) 2009 national estimate of 73%. MSM is also the most common risk reported across all racial/ethnic and adult/adolescent age groups. Additional modes of transmission, including IDU (7% of recent cases); heterosexual contact (6% of recent cases); receiving blood, blood products or tissues from other persons; and other exposures (less than 1% of recent cases) occur less frequently.

The percent of AIDS cases that are MSM cases has declined significantly ( $p < 0.001$ ) over five-year time periods while the proportion of heterosexual cases has more than tripled since 1996 ( $p < 0.001$ ) (see Table 1). The percent who are MSM+IDU has not declined over time. The percent of IDU cases has not changed significantly ( $p = 0.127$ ) since 1991. The “other” transmission category (including transfusion, transplant, hemophilia, maternal transmission, and risk not specified) seen in figures and tables, has also declined over time primarily because of the reduction in the number of those with blood or blood product transmission. This decline results from an increased capability to test blood, blood products and tissues, and effective prenatal testing

with effective medications to reduce transmission to the fetus.

#### RACE/ETHNICITY

Significantly more (64%,  $p < 0.001$ ) cumulative MSM group AIDS cases in San Diego county are white compared to non-MSM cases (42%) (see Figure 2 and Table 2). The MSM group cases are also less likely to be black ( $p < 0.001$ ) or Hispanic ( $p < 0.001$ ) than non-MSM cases. There is no significant difference in the proportion of Asian/Pacific Islanders between the MSM group cases and the non-MSM cases ( $p = 0.096$ ).

The proportion of whites in the MSM group has significantly decreased over 5-year time periods ( $p < 0.001$ ) (see Table 3). As the proportion of whites has decreased, the proportion of black ( $p = 0.003$ ) and Hispanic ( $p < 0.001$ ) cases has increased significantly over the same 5-year time periods, although between 1996 and 2010 the proportion of black cases has not changed significantly.

#### AGE AT DIAGNOSIS

Those in the MSM group are significantly younger than non-MSM cases, both cumula-

FIGURE 2

Race/Ethnicity of MSM and Non-MSM Cumulative (1981-2010) Adult/Adolescent Male AIDS Cases, San Diego County

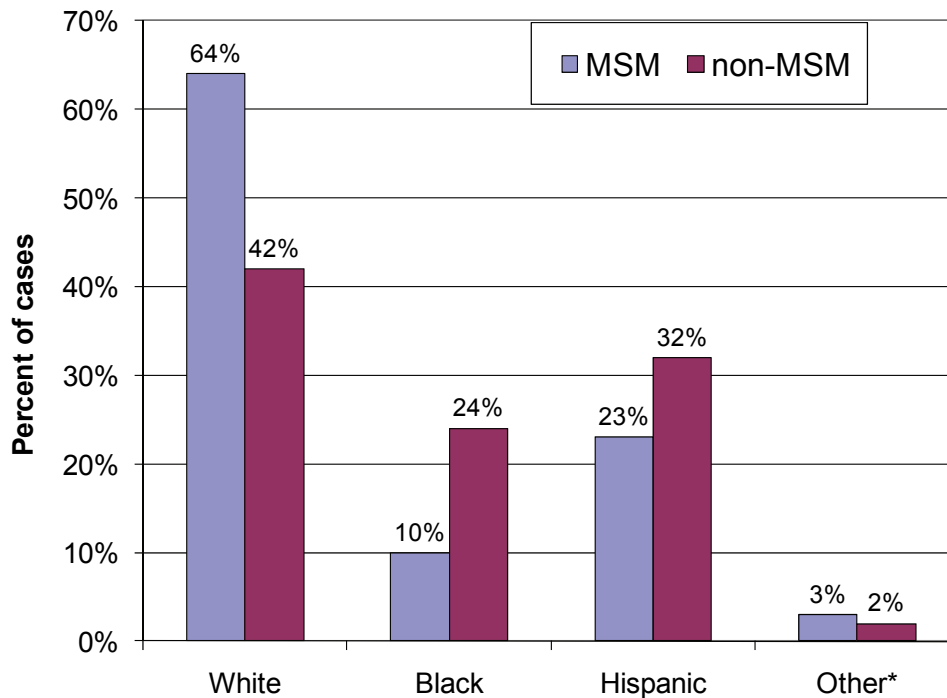


TABLE 2

Race/Ethnicity in Cumulative (1981-2010) MSM and non-MSM Adult/Adolescent AIDS Cases, San Diego County

Race/Ethnicity	Risk Group			
	all MSM	MSM only	MSM + IDU	non-MSM
White	63.8%	64.0%	62.6%	41.7%
Black	10.2%	9.6%	14.4%	23.7%
Hispanic	23.1%	23.5%	20.0%	32.6%
Other*	2.9%	2.9%	2.9%	2.1%
Total cases	12,002	10,507	1,495	1,330

\*Includes Asian, Pacific Islander, Native Hawai'in, Native Alaskan.

Note: Percentage may not total 100 due to rounding.

tively (average age 38.0 years vs. 39.9 years;  $p < 0.001$ ) and in recent years (2006-2010) (40.1 years vs. 46.5 years;  $p < 0.001$ ) (see Table 4). The difference in age is more pronounced in recent years with MSM cases on average 2.9 years younger than non-MSM cases compared to 2.6 years younger over the course of the entire epi-

demic. This is due in part to the increase in age at diagnosis amongst IDU cases in recent (2006-2010) years compared to MSM cases. Although MSM are significantly younger than non-MSM, this difference is unlikely to be clinically significant.

Over the course of the epidemic, both the

TABLE 3

Race/Ethnicity in MSM Group (MSM and MSM+IDU) Adult/Adolescent AIDS cases by Five-Year Time Periods, San Diego County

	Time period						cumulative
	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	
White	84.1%	78.2%	70.3%	55.5%	50.8%	44.9%	63.8%
Black	4.0%	7.6%	9.7%	12.0%	12.6%	11.6%	10.2%
Hispanic	11.4%	12.7%	17.5%	29.6%	32.3%	38.6%	23.1%
Other*	0.5%	1.5%	2.6%	3.0%	4.3%	4.8%	2.9%
Total in group	201	2,390	4,185	2,209	1,693	1,324	12,002

\*Includes Asian, Pacific Islander, and Native American.

Note: Percent may not total 100 due to rounding.

TABLE 4

Age at Diagnosis in Cumulative (1981-2010) MSM and Non-MSM AIDS Adult/Adolescent AIDS Cases, San Diego County

	All MSM		Non-MSM	
	recent*	cumulative	recent*	cumulative
Mean age (years)	40.1	38.0	43.5	40.39.0
Median age (years)	40	37	43	40
Range (years)	18-84	13-92	15-83	13-83
Total cases	1,324	12002	220	1,330

\*2006-2010

MSM group and non-MSM cases have had the most cases in the 30-39-year age group at the time of diagnosis (45.3% and 35.3% respectively) although the non-MSM group has more cases in older age groups. In recent years (2006-2010), however, there has been a shift in age groups with both the MSM group and non-MSM group now having a greater proportion of cases in the 40-49-year age group (35.0% and 45.0%, respectively) than other age groups (see Table 5).

### CURRENT AGE (2010)

The average age of adult/adolescent male

AIDS cases in San Diego county alive in 2010 is about 48 years (see Table 6). Those in the non-MSM group are significantly older than either MSM (49.3 years vs. 48.2 years;  $p=0.015$ ) or the MSM+IDU (49.3 years vs. 47.7 years;  $p=0.004$ ) cases. There is no significant difference in age between MSM and MSM+IDU cases.

### TIME FROM HIV TO AIDS

The mean time from reported HIV diagnosis to AIDS diagnosis is longer in cumulative MSM group cases than in non-MSM cases. The distribution of these times, however, is highly skewed



TABLE 5

Age Group at Diagnosis in Recent (2006-2010) and Cumulative (1981-2010) Adult and Adolescent MSM and Non-MSM AIDS Cases, San Diego County

Age group (years)	All MSM		Non-MSM	
	recent*	cumulative	recent*	cumulative
13-19	0.8%	0.4%	1.8%	2.5%
20-29	14.7%	16.4%	6.4%	11.5%
30-39	33.3%	45.3%	25.5%	35.3%
40-49	35.0%	27.4%	45.0%	32.3%
50+	16.2%	10.6%	21.4%	18.4%
Total cases	1,324	12,002	220	1,330

\*2006-2010

Note: Percentages may not total 100 due to rounding.

(see Figure 3). Cumulatively, 56% of male AIDS cases in San Diego county had less than a year between HIV diagnosis and AIDS diagnosis. Six percent of AIDS cases had more than ten years between HIV and AIDS diagnoses.

In 1993 the AIDS case definition was changed by the CDC to include patients in whom the absolute CD4 count dropped below 200 or the proportion of CD4 cells below 14%. It was expected that this change would lead to AIDS diagnoses earlier in the disease progression. Earlier diagnosis should mean earlier treatment to slow progression of AIDS. Increased treatment options for patients with HIV should lengthen the time from HIV diagnosis to AIDS diagnosis. This assumes that those with HIV infection are tested for HIV early enough in the course of infection for treatment options to impact progression.

When cases with less than a year between HIV and AIDS diagnosis are looked at by five-year time periods of diagnosis, it is apparent that, although there was a decrease in cases with less than a year between HIV and AIDS diagnosis after the 1993 case definition change, there is still a significant number of cases with less than a year between HIV and AIDS diagnoses and this proportion has been increasing in recent years (see Figure 4). Non-MSM cases consistently have had a significantly greater proportion than MSM cases with less than 1 year across all time periods ( $p < 0.001$ ). Because the non-MSM cases are primarily made up of IDU, it is possible that part of this difference is due to a lack of health-care seeking behaviors exhibited by IDU. For example, an IDU may be less likely to be tested for HIV early in the course of disease, but rather,

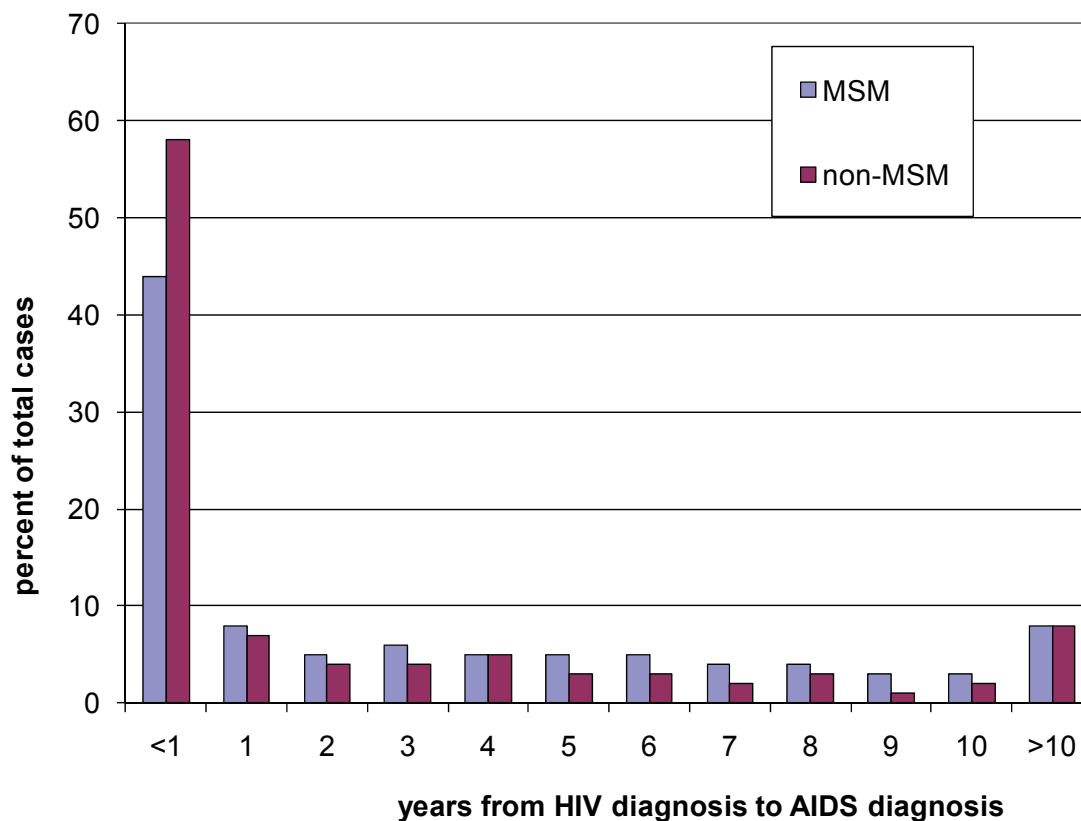
TABLE 6

Age in 2010 of Living MSM and Non-MSM AIDS Cases, San Diego County

Age in 2010	All MSM	MSM only	MSM+IDU	Non-MSM
Mean age (years)	48.1	48.2	47.7	49.3
Median age (years)	48	48	47	49
Range (years)	20-89	20-89	23-78	16-82
Total cases	5,864	5,160	704	673

FIGURE 3

Years from HIV Diagnosis to AIDS Diagnosis in Cumulative (1981-2010) Adult/Adolescent MSM and Non-MSM AIDS Cases, San Diego County



get tested when presenting with an AIDS defining condition. Or, a healthcare provider may be less likely to order an HIV test for a heterosexual regardless of IDU status, erroneously perceiving the patient's risk of HIV acquisition as low. There also may be some healthcare providers who use the date of HIV positive testing in their facility as the date of first HIV positive if the results of previous tests are not known or reported to the provider. It is probable that some cases had earlier, but unreported HIV positive results. This would shorten the length of time from HIV diagnosis to AIDS diagnosis as reported.

### SURVIVAL

For the MSM group AIDS cases diagnosed in

2001-2005, together and as MSM and MSM+IDU, there are significant differences in the 12, 24, and 36 month survival between San Diego county and nationally reported (CDC) cases (see Table 7). San Diego county cases have a significantly lower proportion surviving greater than 12, 24, or 36 months ( $p < 0.001$  in each time) than that reported by the CDC. There is no significant difference seen over the survival times in the non-MSM cases.

There are no significant differences between county MSM and MSM+IDU cases ( $p = 0.503$ ) or between MSM group cases and non-MSM cases ( $p = 0.144$ ) in survival greater than 12 months. MSM cases have a greater proportion surviving than MSM+IDU cases at longer than 24 ( $p = 0.048$ ) and 36 months ( $p = 0.037$ ). The

FIGURE 4

Percent of Adult/Adolescent MSM and Non-MSM AIDS Cases with Less Than One Year Between HIV Diagnosis and AIDS Diagnosis Over 5-Year Time Periods, San Diego County

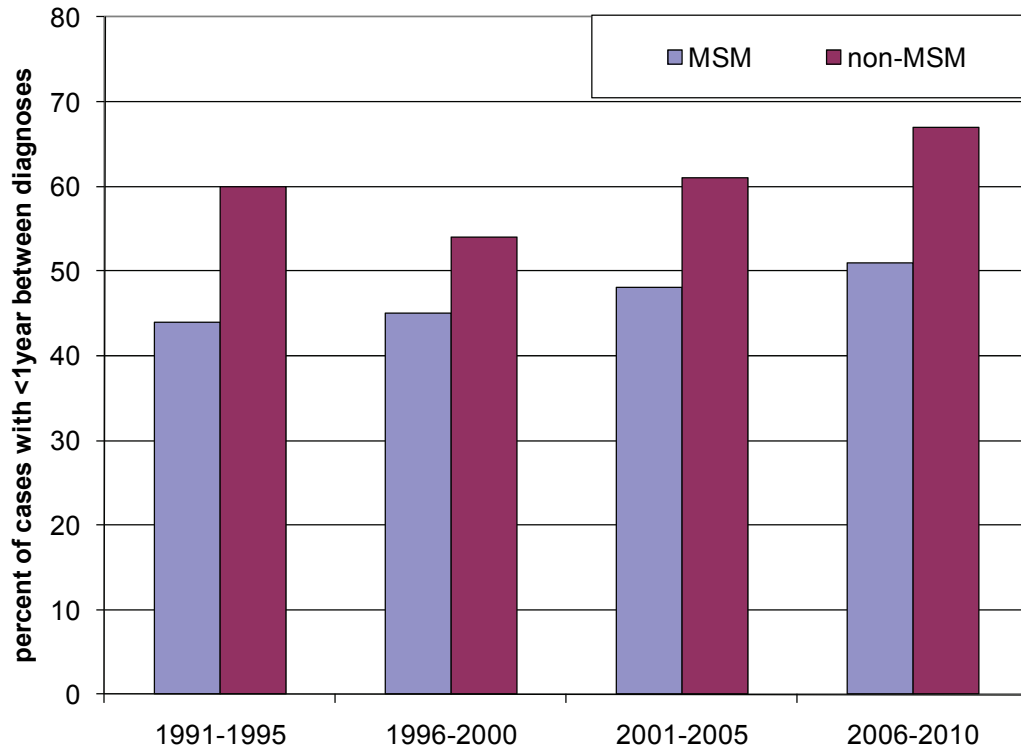


TABLE 7:

Proportion of Adult/Adolescent MSM and Non-MSM AIDS Cases Diagnosed in 2001-2005 in San Diego County Surviving More Than 12, 24, and 36 Months, Compared to National Survival Data

		Survival from AIDS Diagnosis		
		>12 months	>24 months	>36 months
MSM only	SD County	0.92	0.89	0.88
	CDC	0.96	0.95	0.93
MSM+IDU	SD County	0.90	0.85	0.84
	CDC	0.96	0.94	0.92
all MSM	SD County	0.91	0.89	0.87
	CDC	0.96	0.95	0.93
non-MSM	SD County	0.89	0.85	0.82
	CDC	0.90	0.88	0.85

CDC=Centers for Disease Control and Prevention

SD County=San Diego County

county MSM group cases also had a greater proportion of cases surviving longer than 24 (p=0.024) and 36 months (p=0.016) than non-MSM cases.

**COUNTRY OF ORIGIN**

The majority of AIDS cases diagnosed in San Diego county, regardless of mode of transmission, were born in the United States (see Table 8). A significantly (p<0.001) higher proportion of the cumulative MSM group (83.4%) were born in the US than the non-MSM cases (74.5%). This is not unexpected, as the MSM group has a higher proportion of whites, more than 97% of whom were born in the US. Those in the cumulative non-MSM group are more likely to be Hispanic and Hispanic cases are less likely to be born in the US. This significant difference, however, is maintained when controlling for race/ethnicity (p=0.003). In more recent (2006-2010) cases, MSM cases are also more likely to be born in the US (p=0.16), but this difference is not maintained when race/ethnicity is controlled for.

Members of the MSM group are more likely to come from Asia and Australia/Oceania than non-MSM cases but less likely to come from Africa. There was less difference in the proportion

of those coming from Mexico and the MSM group and non-MSM cases were similar in the proportions coming from South America.

**RESIDENCE AT DIAGNOSIS**

The vast majority (72.6%) of AIDS cases in the county lived in the city of San Diego at the time of their diagnoses. Almost 77% of MSM group cases were living in the city at the time of diagnosis while only about 59% of non-MSM cases were San Diego residents. Other than San Diego, only Chula Vista had more than 3% of the MSM group cases (3.1%). Oceanside, Chula Vista, El Cajon, Escondido, and National City each had more than 3% of non-MSM cases. This reflects, in part, the racial/ethnic differences between the MSM group and non-MSM cases and between areas of the county outside of the city of San Diego.

Most AIDS cases diagnosed in San Diego county were residing in the HHSA Central region at the time of diagnosis (see Table 9). A significantly greater (p<0.001) proportion of MSM group cases than non-MSM cases were living in this region at the time of diagnosis while a significantly greater (p<0.001) proportion of non-MSM cases were living in the South region. The

**TABLE 8**  
Country of Origin of Cumulative (1981-2010) and Recent (2006-2010) Adult/Adolescent Male AIDS Cases, San Diego County

Origin.	All MSM		Non-MSM	
	cumulative*	2006-2010	cumulative*	2006-2010
USA	83.4%	74.0%	74.5%	65.5%
US Dependency	0.4%	0.2%	1.9%	1.3%
Mexico	12.3%	21.9%	17.6%	23.3%
Other	5.9%	5.9%	6.0%	8.9%
total in group	12,002	1,324	1,366	223

\*1981-2010

proportion of MSM cases in the Central region has declined significantly ( $p < 0.001$ ) over 5-year time periods, but the proportion of non-MSM cases in this region has remained stable. The proportion of MSM cases has also declined significantly in the North Central region ( $p < 0.001$ ). In the South region, the proportions of both MSM and non-MSM cases have increased significantly ( $p < 0.001$ ).

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.

#### MSM AND INJECTING DRUG USE

Of those in the MSM group, 12.5% report injection drug use. The term “injection drug use” should not be interpreted to mean only illicit drug use, nor does the injection have to be intravenous. Any injected material, be it illicit drug, vitamin, hormone, silicone, or others, is included

in this category. The risk of transmission is not derived from the material injected but from the sharing of needles and syringes. Needles that are shared may contain blood from those who have used it previously. Syringes may also be contaminated with the fluids of previous users if the practice involves drawing up blood into the barrel before injection.

Members of the MSM group were less likely ( $p < 0.001$ ) to be IDU than non-MSM cases, even when controlling for race/ethnicity and age group. Like injection drug using non-MSM cases, those in the MSM group who are also injecting drug users are more likely to be African American ( $p < 0.001$ ) than other race/ethnicities.

#### 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

TABLE 9

Adult/ Adolescent Male AIDS Cases by Region Over Five-Year Time Periods, San Diego County

Region	1991-1995		1996-2000		2001-2005		2006-2010	
	All MSM	Non-MSM	All MSM	Non-MSM	All MSM	Non-MSM	All MSM	Non-MSM
Central	63.1%	41.2%	59.5%	45.0%	55.8%	36.3%	52.2%	33.5%
East	6.0%	12.7%	6.4%	9.2%	7.1%	9.0%	8.0%	9.5%
South	6.2%	13.7%	12.1%	17.7%	15.1%	23.0%	16.8%	27.6%
North Coastal	6.9%	12.5%	7.2%	10.7%	6.5%	12.2%	7.7%	8.1%
North Inland	4.0%	9.6%	4.1%	6.6%	4.0%	6.5%	4.5%	5.9%
North Central	13.8%	10.3%	10.7%	10.7%	11.5%	12.9%	10.8%	15.4%
Total cases	4,184	408	2,209	271	1,687	278	1,319	221

Note: Percentages may not total 100 due to rounding.

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 (2006-2010) because additional cases are likely to be reported over time. Retrospective case finding will continue and it is expected that cases diagnosed in 2010 will be reported in 2011. 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 CD4 absolute count dropped below 200 or in whom the percent of CD4 cells fell below 14%. This increased the number of cases substantially and allowed for the identification of cases earlier in the disease progress. It is probable 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 to reflect vital status of cases. However, it

is possible that some cases may have died, but the death not reported to the Epidemiology Program. 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 San Diego county to the nation as a whole, and to other counties and states, difficult. These factors must be taken into account when discussing the impact of the AIDS epidemic on San Diego county.

**DATA SOURCES:**

County of San Diego, HIV/AIDS Epidemiology Unit database and Annual Report,  
SANDAG population estimates,

*HIV/AIDS Surveillance Report, 2009* (Vol. 21), Centers for Disease Control and Prevention

*Profiles of General Demographic Characteristics, 2000*, US Dept of Commerce



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