AIDS in Men who have Sex with Men

County of San Diego, 2004

County of San Diego

Health and Human Services Agency,

HIV/AIDS Epidemiology Unit

AIDS in Men who have Sex with Men, County of San Diego, 2004

County of San Diego
Health and Human Services Agency
Public Health Services

Contact us for more information at:

Community Epidemiology
HIV/AIDS Epidemiology
1700 Pacific Highway, P511C-A
San Diego, CA 92101

(619) 515-6620
(619) 515-6675

This report is available on the web at:
www.sdhivaids.org
(click on 'Reports and Statistics')

Jean Shepard, Director
Nancy Bowen, M.D., M.P.H.,
Public Health Officer
Michele Ginsberg, M.D.,
Chief, Community Epidemiology Branch

Michael Bursaw, M.P.H., (619) 515-6672
Ernie Awa, (619) 531-4818
Lyn Cardoza, (619) 515-6675
Lorri Freitas, M.P.H, (619) 515-6764
Lorena Gonzalez-Fabiny, (619) 515-6757
Minda Johnson, (619) 515-6762
Francisco McGann, (619) 515-6763
Samantha Tweeten, Ph.D., (619) 515-6673

The first AIDS cases diagnosed in the County of San Diego were seen in 1981 in 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 HIV in those diagnosed with AIDS in the County. Cumulatively, there have been 10,209 AIDS cases in the County in MSM and MSM who also use injected drugs (MSM+IDU) .

Rates are not calculated in this report because the number of persons who are MSM, IDU, or belong to other risk groups in the County of San Diego is not known. For purposes of this report, other modes of HIV transmission including 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.

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) and is comprised of all cases reporting male homosexual contact as a risk for HIV transmission. The MSM Group includes cases aged greater than 12 years.

The most commonly reported mode of transmission risk for HIV in the County of San Diego, both cumulatively and recently (2000-2004), is MSM (74% recently), followed by MSM+IDU (10% recently) (see Figure 1 and Table 1). The third most common risk group is injecting drug use (IDU) (10% recently). It can be seen that the MSM Group encompasses by far the highest proportion of cases in the County (84% recently). This is a greater proportion than the Centers for

FIGURE 1 Recent (2000-2004) and Cumulative Modes of HIV Transmission in Males, in the County of San Diego.

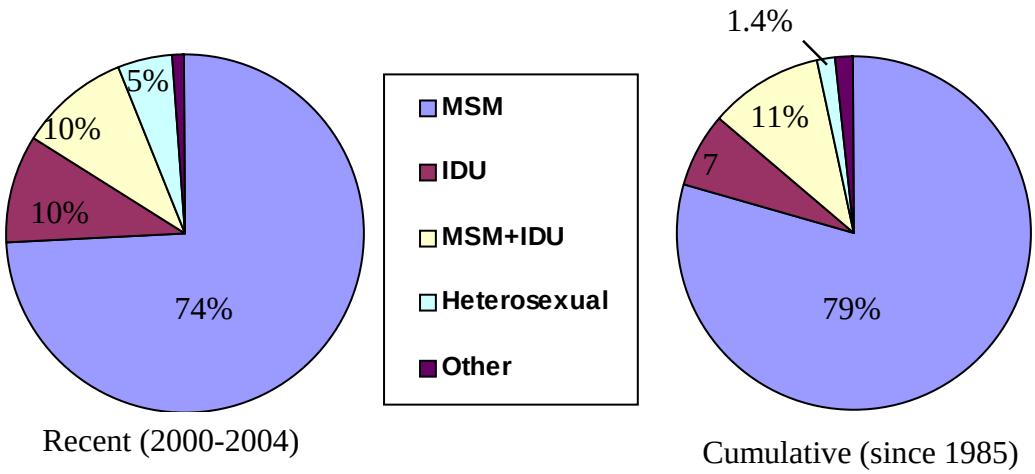


TABLE 1: Modes of HIV Transmission in County of San Diego Males (age > 12 years) Over 5-year Time Periods.

	Time period of diagnosis				
	1985-1989	1990-1994	1995-1999	2000-2004	Cumulative
MSM	83.5%	81.5%	76.9%	74.1%	79.4%
IDU	3.3%	6.0%	8.1%	9.9%	6.7%
MSM+IDU	9.9%	10.0%	12.7%	9.9%	10.7%
Heterosexual	0.5%	0.6%	1.1%	5.0%	1.4%
Other*	2.8%	1.9%	1.9%	1.1%	1.8%
Total in group	1969	4468	2914	1902	11331

*Includes transfusion, transplantation, hemophilia, and not specified.
NB: Columns may not total 100% due to rounding.

Disease Control and Prevention (CDC) 2003 national estimate of 64%. The MSM Group is the most common risk across all racial/ethnic and adult/adolescent age groups. Additional modes of transmission, including IDU, heterosexual contact, receiving blood, blood products or tissues from other persons, and occupational exposures occur less frequently .

The proportion of MSM cases has declined significantly ($p<0.001$) over five-year time periods while the proportion of IDU has increased three-fold ($p<0.001$) and heterosexual cases have increased ten-fold ($p<0.001$) (see Table 1). The proportion of MSM+IDU has not declined over time, but the greater number of MSM-only cases means that the MSM Group (with all cases in MSM and MSM+IDU) has seen a reduction in proportion over time. The "other" transmission category 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 increased testing capability of blood, blood products and tissues.

RACE/ETHNICITY

Significantly more (67%, $p<0.001$) cumulative MSM Group AIDS cases in the County of San Diego are white compared to 42% of the non-MSM cases (see Table 2 and Figure 2). The MSM Group cases are also less likely to be black ($p<0.001$) or Hispanic ($p<0.001$) than non-MSM cases

TABLE 2 Race/Ethnicity in MSM and non-MSM cumulative AIDS cases in the County of San Diego.

	All MSM	MSM only	MSM + IDU	Non-MSM
White	67.1%	67.3%	65.1%	42.2%
Black	9.9%	9.3%	14.3%	25.2%
Hispanic	20.5%	20.7%	18.3%	30.9%
Asian/Pacific Islander	1.9%	2.0%	1.3%	1.1%
Native American	0.6%	0.6%	0.9%	0.6%
Total in group	10209	9002	1207	1122

FIGURE 2 Distribution of Race/Ethnicity in MSM and Non-MSM in cumulative AIDS cases in the County of San Diego.

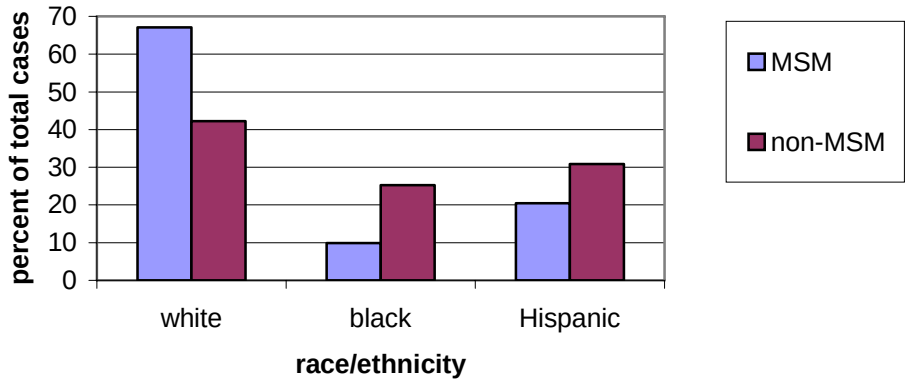


TABLE 3 Race/Ethnicity in MSM Group AIDS cases by Five-Year Time Period in the County of San Diego.

	Time Period			
	1985-1989	1990-1994	1995-1999	2000-2004
White	80.8%	71.7%	60.3%	49.2%
Black	7.3%	9.1%	11.0%	13.6%
Hispanic	10.5%	16.6%	26.1%	33.1%
Asian/Pacific Islander	1.2%	1.8%	1.9%	3.3%
Native American	0.3%	0.7%	0.7%	0.8%

but more likely (p=0.048) to be Asian/Pacific Islander.

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<0.001), Hispanic (p<0.001) and Asians/Pacific Islander (p<0.001) cases has increased significantly over the same 5-year time periods. There has been no significant change in the proportion of Native Americans (p=0.1036).

AGE AT DIAGNOSIS

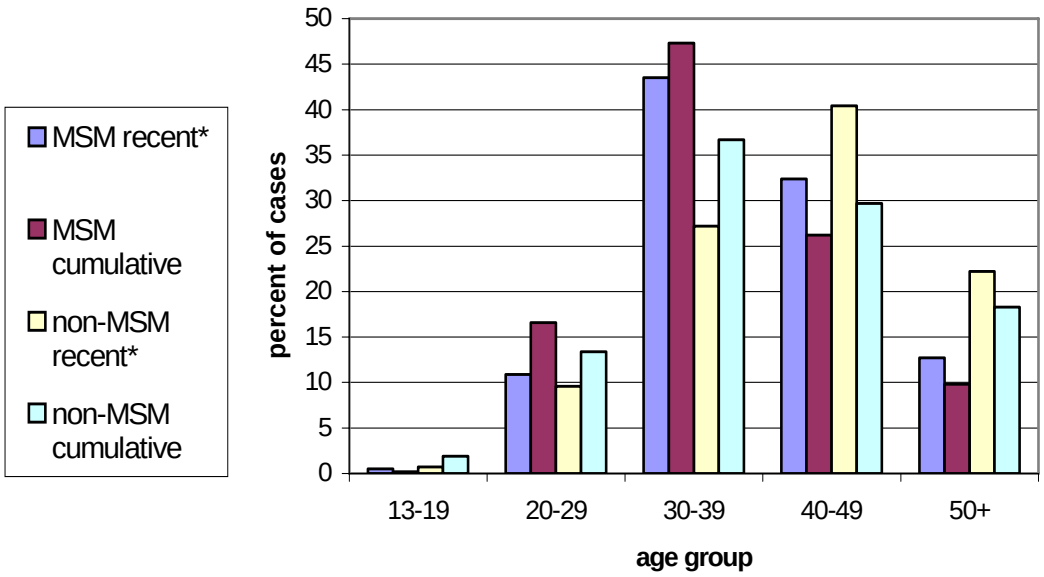
Recent and cumulative average ages of MSM and non-MSM AIDS cases are shown in Table 4. Those in the MSM Group are significantly younger than non-MSM cases, both cumulatively (p<0.001) and in recent years (2000-2004) (p<0.001).

TABLE 4 Age at AIDS Diagnosis in MSM and Non-MSM AIDS Cases in the County of San Diego.

	All MSM		MSM only		MSM+IDU		Non-MSM	
	recent*	cumulative	recent*	cumulative	recent*	cumulative	recent*	cumulative
Mean age (years)	39.5	37.7	38.0	37.8	37.0	36.5	42.4	39.3
Median age (years)	39.0	36.0	37.0	37.0	36.0	36.0	43.0	39.0
Range (years)	16-92	13-92	18-77	13-92	20-67	17-67	4-75	0-82
Total cases	1598	10209	2242	9002	369	1207	304	1122

*2000-2004.

FIGURE 3 Recent (2000-2004)* and Cumulative Male AIDS Cases in the County of San Diego by Age Group at Time of Diagnosis.



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 only 1.7 years younger over the course of the entire epidemic. This is due in part to the increase in age at diagnosis amongst IDU cases in recent (2000-2004) years compared to MSM cases.

Over the course of the epidemic, both the MSM Group and non-MSM cases have had the most cases in the 30-39-year age group at the time of diagnosis (47.3% and 35.7% respectively). In recent years (2000-2004) however, there has been a shift in age groups with the MSM Group still primarily represented by the 30-39-year age grouping (43.5%), but the non-MSM group having more cases in the 40-49-year age group (40.1%) (see Figure 3).

CURRENT AGE (2004)

The average age of the male AIDS cases in the County of San Diego alive in 2004 is about 44 years. There is no statistical difference between the MSM Group and non-MSM cases (see Table 5).

AGE AT DEATH

Just as non-MSM cases are, on average, about 2 years older at diagnosis than MSM cases, among those who have died they are about 2 years older at the time of death. The average age at death in the MSM Group is 40.4 years, significantly ($p=0.001$) younger than the 42.3 years seen in non-MSM cases.

TABLE 5 Age in 2004 of MSM and Non-MSM Male AIDS Cases Alive in the County of San Diego.

	All MSM	MSM only	MSM+IDU	Non-MSM
Mean age (years)	44.1	44.2	43.3	44.3
Median age (years)	43.0	43.0	43.0	45.0
Range (years)	19-85	19-85	21-72	4-76
Total cases	4681	4128	553	555

SURVIVAL

The length of survival from AIDS diagnosis to death in MSM and non-MSM cases is shown in Table 6. Analysis of survival time is limited to those cases who have died. The average length of survival in those cases who have died increased significantly (p=0.003) from the 1985-1989 diagnosis time period to the 1990-1994 diagnosis time period in all groups. The differences in survival between the 1990-1994 and 1995-1999 diagnosis time frames are not significant in any group although the non-MSM cases appear to have decreased average survival time in the 1995-1999 time period.

The length of survival is longer in the MSM Group than the non-MSM cases (1995-1999 diagnosis time period, p=0.001) with the MSM Group surviving, on average, two to eight months longer than the non-MSM cases diagnosed prior to 2000. Differences in the 2000-2004 and other diagnosis time periods are difficult to assess because this period has many fewer deaths than previous periods (11% of MSM). It is possible that more cases in this time frame will have earlier diagnoses, based on lowered CD4 count or percentages under the 1993 case definition. With earlier diagnosis and the potential for early treatment to maintain health, the length of survival from diagnosis to death should be extended.

The distribution of years of survival for MSM and non-MSM cumulative AIDS cases is shown in Figure 4. Most cases have survival less than three years. Significantly fewer MSM than non-MSM cases have survival less than one year (p<0.001). There is less difference for those with survival of 1-2 years (p=0.050) and there is no statistical difference in the proportion of MSM and non-MSM cases (p=0.295) with survival for five or more years. When the distribution of cases with less than one year of survival is examined over time periods (see Figure 5) significant differences between MSM and non-MSM cases are seen in the 1985-1989 (p=0.031), 1995-1999 (p=0.005), and 2000-2004 (p=0.006) time periods. Most of the cases with survival less than one year were diagnosed before 1995, most 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 diag-

TABLE 6 Length of Survival (months) by 5-year Time Periods in MSM, MSM + IDU, and Non-MSM Deceased Male AIDS Cases in the County of San Diego.

Transmission risk	Months, from diagnosis to death	Time period of diagnosis			
		1985-1989	1990-1994	1995-1999	2000-2004*
MSM only	mean	22.3	25.5	26.9	8.2
	median	16.1	19.3	24.5	6.8
	range	0-199	0-165	0.2-122	0-49
	number deceased	1566	2667	503	158
	total cases in time period	1645	3640	2242	1409
	percent deceased	95.1%	73.3%	22.4%	11.2%
MSM + IDU	mean	27.4	35.7	34.2	16.0
	median	17.8	23.5	29.1	15.1
	range	0-177	0.1-154	0.3-104	0.6-48
	number deceased	183	325	127	40
	total cases in time period	194	447	369	189
	percent deceased	94.3%	72.7%	34.4%	21.2%
All MSM	mean	22.8	26.6	28.4	9.8
	median	16.3	23.5	16.1	4.3
	range	0-199	0-165	0.2-122	0-49
	number deceased	1749	2992	630	198
	total cases in time period	1839	4087	2311	1598
	percent deceased	95%	73.2%	24.1%	12.4%
Non-MSM	mean	16.9	24.8	20.0	10.2
	median	9.0	17.2	17.8	8.8
	range	0.1-118	0.1-153	0.2-89	0-52
	number deceased	117	294	110	45
	total cases in time period	130	381	303	304
	percent deceased	90.0%	77.2%	36.3%	14.8%

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

FIGURE 4 Years from AIDS Diagnosis to Death in Deceased MSM and non-MSM Male Cumulative AIDS Cases in the County of San Diego.

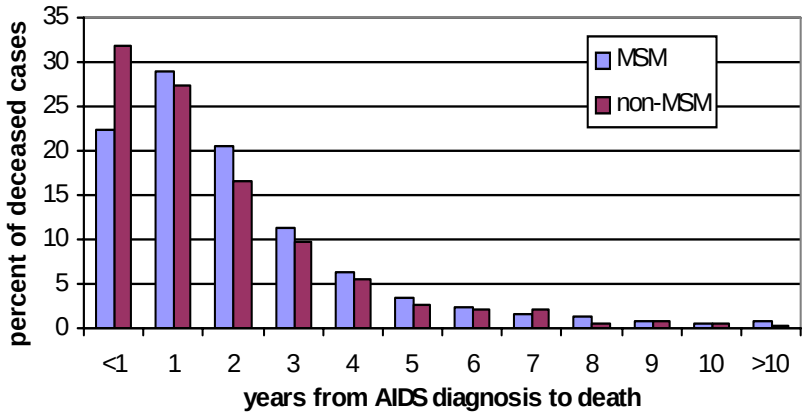
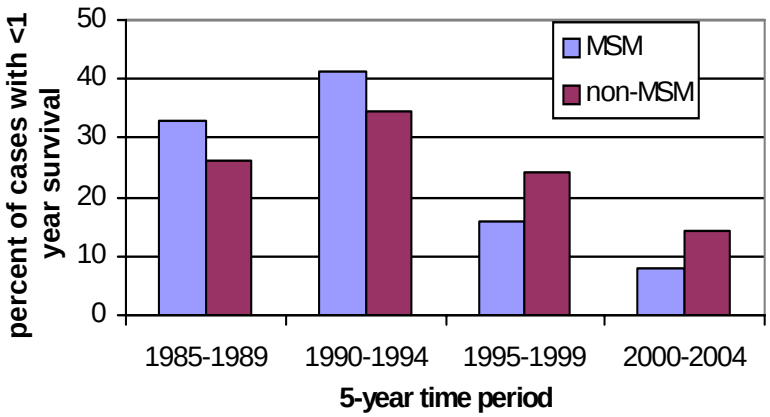


FIGURE 5 Distribution of Male AIDS Cases with Survival Less Than 1 Year by 5-Year Time Period, County of San Diego.



nosis than later cases after the 1993 case definition change.

While the MSM Group has longer survival times than non-MSM cases, the MSM+IDU cases have the longest survival times of those in the MSM Group . These increased survival times are significantly longer than that seen in MSM only cases (1995-1999 diagnosis time period, p=0.011) and in IDU who are not MSM (1995-1999 diagnosis time period, p<0.001). These significant differences remain even when controlling for age at diagnosis, year of diagnosis, and race/ethnicity .

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 (see Figure 6). Cumulatively, 53% of male AIDS cases in the County of San Diego had less than a year between HIV diagnosis and

FIGURE 6 Years from HIV Diagnosis to AIDS Diagnosis in Cumulative AIDS cases in Males in the County of San Diego.

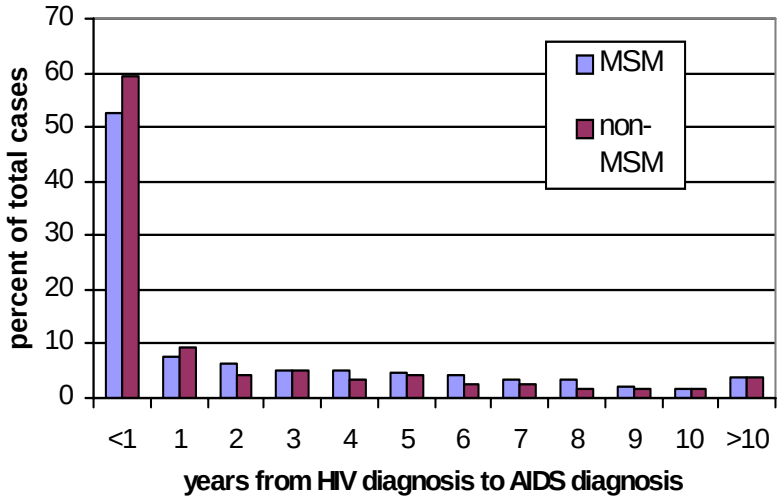
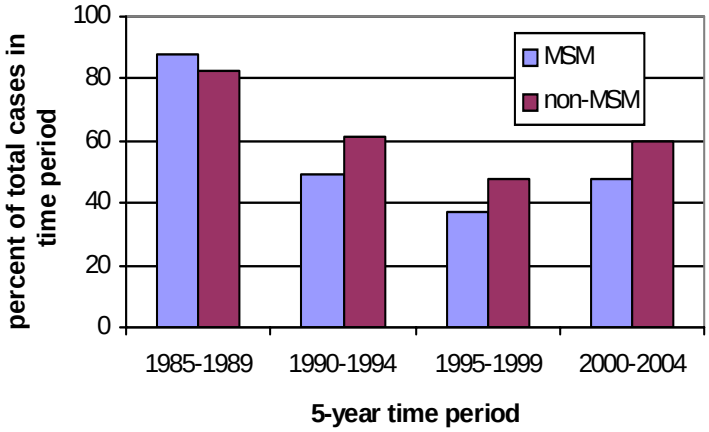


FIGURE 7 Distribution over Five-Year Time Periods of Male AIDS Cases with Less Than One Year Between HIV Diagnosis and AIDS Diagnosis, County of San Diego.



AIDS diagnosis. Four 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 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 would therefore lengthen. When cases with less than a year between HIV and AIDS diagnosis are looked at in five-year time periods of diagnosis, it is apparent that, although there is a decrease in cases with less than a year between HIV and AIDS diagnosis after the 1993 case definition change, there are still a significant number of cases with less than a year between HIV and AIDS diagnoses (see Figure 7). There is an overall trend towards fewer cases with less than one year from HIV diagnosis to AIDS diagnosis from a high of about 85% in 1985-1989 to a low of almost 40% in 1995-1999. There has been an increase in percent in the 2000-2004 time period. 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 healthcare 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, get tested when presenting with an AIDS defining condition. 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 pro-

TABLE 7 Country of Origin of Cumulative Male AIDS Cases, County of San Diego.

	All MSM	Non-MSM
USA	85.3%	77.2%
US Dependency	0.5%	1.9%
Other	14.2%	21.0%
Total in group	10205	1121

Note: Columns may not total 100% due to cases with unknown origin.

vider. 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 .

COUNTRY OF ORIGIN

The majority of AIDS cases diagnosed in the County of San Diego, regardless of mode of transmission, were born in the United States (see Table 7). A significantly ($p<0.001$) higher proportion of the MSM Group (85.3%) were born in the US than the non-MSM cases (77.2%). 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 non-MSM group are more likely to be Hispanic and Hispanics are less likely to born in the US. This significant difference, however, is maintained when controlling for race/ethnicity ($p=0.001$).

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 of AIDS cases in the County of San Diego 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 had more than 3% of non-MSM cases each. This reflects, in part, the racial differences between MSM Group and non-MSM cases. There are more Hispanics and blacks in non-MSM 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 were residing in the HHSA Central region at the time of diagnosis (see Table 8). 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. The pro-

Table 8 Male AIDS Cases by County of San Diego Health and Human Services Agency Regions Over Five-Year Time Periods.

	1985-1989		1990-1994		1995-1999		2000-2004	
Region	all MSM	non-MSM	all MSM	non-MSM	all MSM	non-MSM	all MSM	non-MSM
Central	65.0%	39.2%	62.5%	44.4%	61.1%	42.6%	57.2%	39.5%
East	6.1%	15.4%	6.2%	13.6%	6.0%	9.9%	7.3%	7.2%
South	5.2%	12.3%	5.8%	11.0%	10.5%	17.2%	16.1%	24.3%
North Coastal	5.3%	6.2%	7.1%	11.0%	7.0%	13.5%	6.9%	11.5%
North Inland	3.3%	7.7%	3.8%	8.7%	4.1%	7.3%	4.4%	6.3%
North Central	15.1%	19.2%	14.5%	11.3%	11.3%	9.6%	10.8%	11.2%
Total	1839	121	4087	368	2611	295	1598	302

portion 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. In the South region, the proportions of both MSM and non-MSM cases has 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.

Facility of Diagnosis

In both the MSM Group (44.5%) and non-MSM cases (59.5%), the largest proportion of male AIDS cases in the County of San Diego were diagnosed in the in-patient and out-patient hospital setting. Those in the MSM Group were significantly ($p<0.001$) less likely to be diagnosed in this setting than non-MSM cases even when controlling for race/ethnicity. Members of the MSM Group are also significantly less likely to be diagnosed in a correctional facility ($p<0.001$) but more likely to be diagnosed in a physician's office ($p<0.001$) than non-MSM cases even when controlling for race/ethnicity .

MSM and Injecting Drug Use

Almost 12% of those in the MSM Group 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 injecting 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 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 and it is expected that cases diagnosed in 2004 will be reported in 2005 and into 2006. 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_4 absolute count dropped below 200 or in whom the percent of CD_4 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 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 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 calcula-

tions.

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.

Summary

Men who have Sex with Men (MSM) is the most common mode of transmission reported and there have been 10,209 AIDS cases reported in MSM in the County of San Diego since 1981.

The proportion of MSM cases has declined over time while there has been an increase in the proportion of cases in Injecting Drug Users (IDU) and heterosexuals.

MSM cases are more likely to be white and less likely to be Hispanic or black than non-MSM cases. The proportion of whites in MSM has been decreasing over time, while the proportion of Hispanics and blacks has been increasing.

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

In 2004, the average age of both MSM and non-MSM living AIDS cases was about 44 years.

The average length of time from AIDS diagnosis to death is longer in MSM cases than non-MSM cases. The longest average survival time is seen in MSM who are also IDU.

Somewhat fewer MSM than non-MSM cases had less than a year between HIV diagnosis and AIDS diagnosis. Cumulatively, 53% of male AIDS cases had less than a year between HIV and AIDS diagnosis.

The majority of both MSM and non-MSM cases were born in the US. The MSM cases are more likely to be white, and less likely to be Hispanic or black, than non-MSM cases.

The majority of MSM and non-MSM cases resided in San Diego at the time of diagnosis and in the HHSA Central region. Somewhat more MSM cases resided in the Central region.

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

Data sources:

County of San Diego, HIV/AIDS Epidemiology Unit database and Annual Report, SANDAG population estimates,
HIV/AIDS Surveillance Report, 2003 (Vol. 15), Centers for Disease Control and Prevention
Profiles of General Demographic Characteristics, 2000, US Dept of Commerce