

AIDS IN INJECTING DRUG USERS COUNTY OF SAN DIEGO, 2005

County of San Diego

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



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The first AIDS case in an Injecting Drug User (IDU) in San Diego County was diagnosed in 1981 in a Man who has Sex with Men (MSM). Since then, IDU and MSM who are also IDU (MSM+IDU) have comprised 2,381 (18.9%) of the 12,603 AIDS cases diagnosed in the County as of 31 December, 2005. This is a significantly smaller ($p < 0.001$) proportion than the 33.2% reported by the Centers for Disease Control and Prevention (CDC) in cumulative cases in 2004. The proportion of IDU cases has increased significantly ($p < 0.001$) over time, although in the most recent time period (2001-2005) the proportion has decreased somewhat (see Table 1).

Unless otherwise stated, IDU in this report refers to both IDU-only and MSM+IDU cases. Data analyzed for this report includes all AIDS cases reported through December 31, 2005.

GENDER

More than 85% of cumulative IDU AIDS

cases in San Diego County are male (see Table 2); more than half, 52.7%, of IDU cases diagnosed in the county are also MSM. Although most IDU cases are male, the proportion of female IDU cases increased significantly ($p = 0.005$) from 1981 to 2000 (see Table 2); the proportion of females in non-IDU cases has also increased significantly but the proportions are lower over time than those seen in IDU. When all AIDS cases are considered, females are significantly ($p < 0.001$) more likely to be IDU than males.

RACE/ETHNICITY

The greatest proportion of IDU cases are in whites (see Table 3), but among cumulative IDU cases, blacks are significantly more likely to be IDU than other race/ethnicities ($p < 0.001$) (see Figure 1). Among IDU cases, blacks and Asians, Pacific Islanders, and Native Americans are more likely to be female ($P = 0.002$). When IDU

TABLE 1: IDU and Non-IDU AIDS Cases by Time Period of Diagnosis, San Diego County

	Time Period of Diagnosis					Cumulative	Total Cases
	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005		
IDU	9.3%	13.8%	19.0%	23.5%	20.2%	18.9%	2,381
Non-IDU	90.7%	86.2%	81.0%	76.5%	79.8%	81.1%	10,222
Total Cases	215	2,703	4,936	2,723	2,026	12,603	

TABLE 2: Male and Female IDU and Non-IDU AIDS Cases Over 5-Year Time Periods, San Diego County

Time Period of Diagnosis	IDU*		Non-IDU	
	Male	Female	Male	Female
before 1986	90.0%	10.0%	99.0%	1.0%
1986-1990	88.5%	11.5%	96.0%	4.0%
1991-1995	86.0%	14.0%	94.8%	5.2%
1996-2000	82.4%	17.6%	92.8%	7.2%
2001-2005	85.8%	14.2%	89.9%	10.1%
Total Cases	2034 (85.4%)	347 (14.6%)	9607 (94.0%)	615 (6.0%)

*Includes IDU-only and MSM+IDU cases.

TABLE 3: IDU and Non-IDU AIDS Cases by Race/Ethnicity, San Diego County

	Race/Ethnicity				Total
	White	Black	Hispanic	Other*	
IDU	55%	21%	23%	2%	2,381
non-IDU	64%	11%	22%	3%	10,222
Total	7,873	1,564	2,832	334	12,603

*Includes Asian, Pacific Islander, and Native American.

Note: percentages may not total 100 due to rounding.

cases are examined over 5-year time periods (see Table 4), there has been a significant increase in the proportion of Hispanics and a decrease in whites, while that of blacks has remained stable.

AGE AT DIAGNOSIS

The mean age at diagnosis of cumulative

IDU cases is 37.7 years which is not significantly different from that of non-IDU cases (37.8 years) (see Table 5). While mean age at diagnosis has increased over time, the mean age in recent cases does not differ significantly between IDU and non-IDU cases nor is there a difference between males and females in mean ages of IDUs and

FIGURE 1: IDU and Non-IDU Cases Among Race/Ethnicities, San Diego County

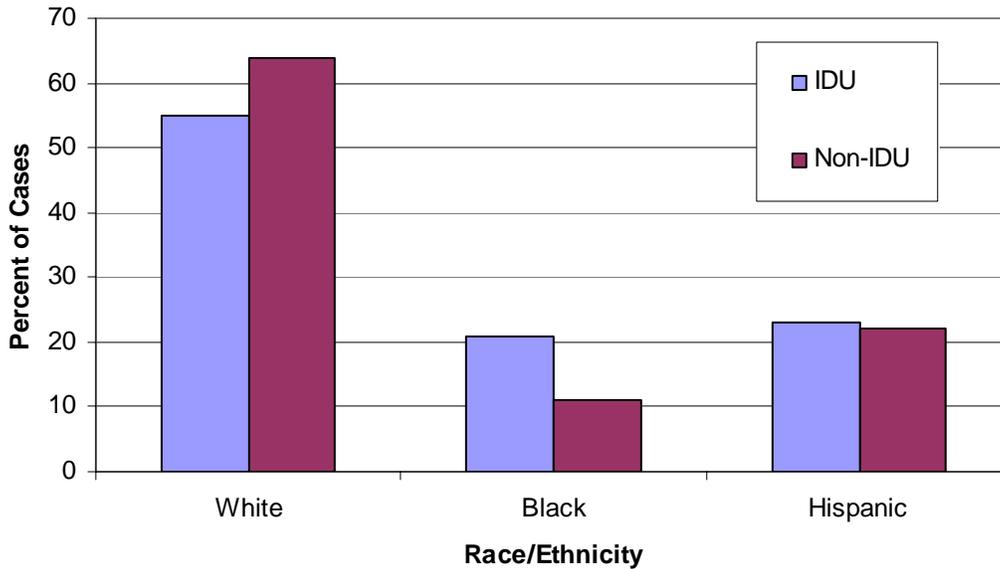


TABLE 4: Race/Ethnicity in IDU AIDS Cases Over 5-Year Time Periods, San Diego County

Time Period of Diagnosis	Race/Ethnicity				Total
	White	Black	Hispanic	Other*	
1986-1990	63.1%	21.1%	14.7%	1.1%	374
1991-1995	55.6%	20.7%	21.7%	2.0%	937
1996-2000	49.1%	21.5%	26.7%	2.7%	641
2001-2005	51.6%	19.8%	26.4%	2.2%	409
Total	1,283	492	537	49	2,361

*Includes Asian, Pacific Islander, and Native American.

TABLE 5: Mean, Median, and Range of Ages at Diagnosis in Cumulative and Recent IDU and Non-IDU AIDS Cases, and in 2005, San Diego County

	IDU			not IDU		
	at diagnosis (cumulative)	at diagnosis (recent*)	in 2005	at diagnosis (cumulative)	at diagnosis (recent*)	in 2005
mean age (years)	37.7	41.6	45.4	37.8	39.5	44.9
median age (years)	37	41	39	37	39	39
range (years)	17-71	20-71	21-76	<1-92	<1-84	4-86
total cases	2,381	409	54	10,222	1,617	269

*2001-2005

non-IDUs.

When mean age at diagnosis is examined by race/ethnicity, white IDUs are significantly ($p < 0.001$) younger than white non-IDUs (37.4 years vs 39.0 years) while black and Hispanic IDUs are significantly older than black (39.5 years vs 35.7 years; $p < 0.001$) and Hispanic (36.7 vs 35.7 years respectively; $p = 0.021$) non-IDUs. When race/ethnicity is examined by age group (see Table 6), black IDUs have a slightly greater proportion of IDU cases in the 40-49 year age group than whites or Hispanics.

CURRENT AGE (2005)

Of AIDS cases living in 2005, the mean age of IDUs, 45.4 years, does not differ significantly from the mean age of non-IDUs, 44.9 years (see Table 5).

AGE AT DEATH

Of AIDS cases who have died, the mean age at death in IDUs was 40.7 years and 40.2 years for non-IDUs. Although this difference is statistically significant, it is probably not clinically significant.

SURVIVAL

The median length of time from AIDS diagnosis to death was 1.9 years for non-IDU and 2.1 years for IDU in deceased AIDS cases. A significantly ($p = 0.002$) larger proportion of non-IDU (52.7%) had less than two years between AIDS diagnosis and death than IDU cases (47.9%) (see Figure 2). When controlling for race, these differences remain significant only in whites ($p < 0.001$); more white IDUs have survival greater than one year compared to white non-IDUs. When controlling for time of diagnosis,

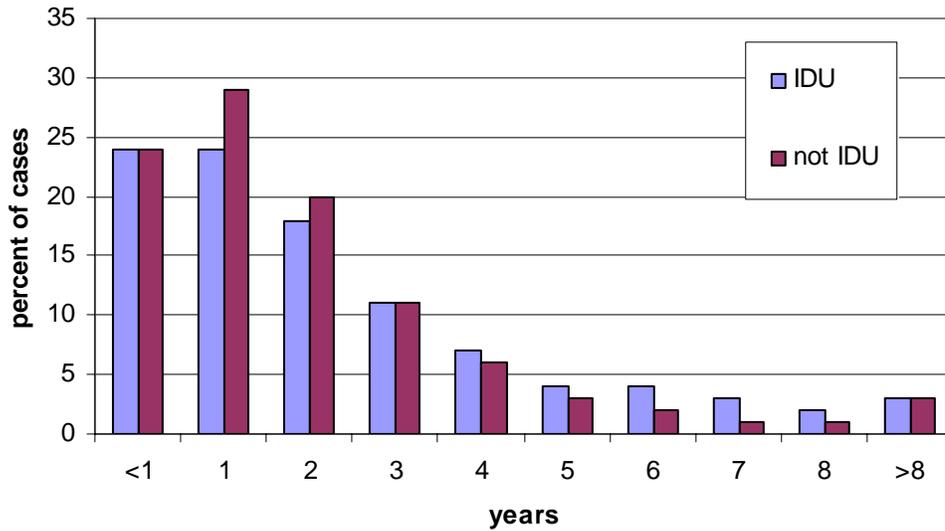
TABLE 6: Age Group at Diagnosis in Cumulative IDU and Non-IDU AIDS Cases by Race/Ethnicity, San Diego County

Age Group*	Race/Ethnicity							
	White		Black		Hispanic		Other	
	IDU	Non-IDU	IDU	Non-IDU	IDU	Non-IDU	IDU	Non-IDU
20-29	16.6%	13.2%	9.1%	21.1%	21.0%	23.8%	18.4%	23.8%
30-39	47.2%	44.8%	46.2%	49.2%	44.6%	46.1%	38.8%	47.3%
40-49	28.6%	29.0%	33.5%	21.6%	26.6%	21.2%	34.7%	20.6%
50+	7.7%	13.1%	11.2%	8.1%	7.8%	8.9%	8.2%	8.2%
Total	1,299	6,548	493	1,047	538	2,233	49	281

*Age group 13-19 not included because there are only 2 IDU in this age group.

**Includes Asian, Pacific Islander, Native American.

FIGURE 2: Years Between AIDS Diagnosis and Death Among Cumulative Deceased IDU and Non-IDU AIDS Cases, San Diego County



there is no difference in survival between IDU and non-IDU for those diagnosed before 1993. For those diagnosed in 1993 or later, a significantly ($p=0.001$) greater proportion of IDU (54.4%) have survival greater than one year compared to non-IDU (44.4%). It is probable that increased length of survival, among those who have died, is due primarily to the impact of anti-retroviral treatments available after 1993.

In all IDU cases, the proportion of cases surviving three or more years from AIDS diagnosis to death has increased over 5-year time periods (see Table 7). It is possible that IDU brings people to medical care earlier in the course of disease and are therefore under care resulting in extend-

ing their survival.

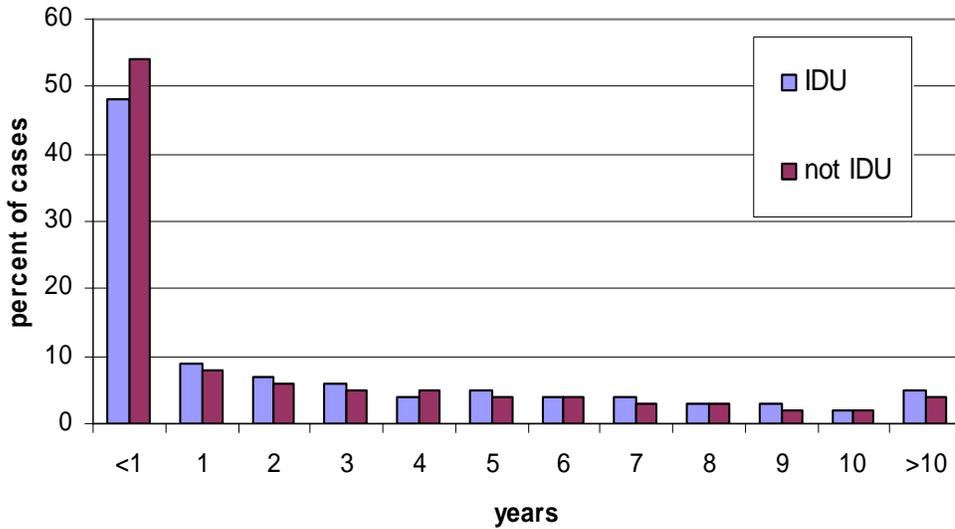
TIME FROM HIV TO AIDS

The time from HIV diagnosis to AIDS diagnosis is highly skewed; the median time from for both IDU and non-IDU cumulative cases is less than one year (see Figure 3). A significantly smaller proportion ($p<0.001$) of IDU (47.6%) than non-IDU (52.7%) had less than a year between HIV diagnosis and AIDS diagnosis. This difference is maintained when race was controlled for although this difference appears to be primarily due to the difference among whites. When time of diagnosis, before 1993 or 1993 and after, is taken into account the difference is not

TABLE 7: Survival (from diagnosis to death) in IDU AIDS Cases Over 5-Year Time Periods, San Diego County

Survival (diagnosis to death)	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	cumulative
2 years or less	85.0%	64.2%	41.8%	19.5%	14.7%	65.0%
3 years or more	15.0%	35.8%	58.2%	80.5%	85.3%	35.0%
Total cases	20	374	937	641	409	2,381

FIGURE 3: Years Between HIV Diagnosis and AIDS Diagnosis Among Cumulative IDU and Non-IDU AIDS Cases, San Diego County



maintained. It is possible that IDU brings people to medical care earlier in the course of disease so that they are diagnosed with HIV earlier, extending the time from HIV to AIDS. Also, a number of drug treatment programs request HIV testing at the time of entry, and this may increase the likelihood of early diagnosis in IDU.

COUNTRY OF ORIGIN

The majority of both IDU (82.6%) and non-IDU (86.2%) cases were born in the US (see Table 8). Injecting Drug Use cases were significantly less likely ($p < 0.001$) to be born outside of the US than non-IDU cases. Although IDU make up only about 19% of AIDS cases in San Diego County, they comprise almost 43% of

those born in a US dependency. Of IDU and non-IDU cases born outside of the US, most are from Mexico (78.6% and 73.5% respectively) or the Philippines (3.4% and 4.9% respectively). The IDU and non-IDU cases are similar in proportion of cases born in Asia, Africa, Europe, North and South America, and the Caribbean.

RESIDENCE AT DIAGNOSIS

The majority of all AIDS cases, both IDU and non-IDU, were living in the HHSA Central region at the time of their AIDS diagnosis (see Table 9). Over time there have been shifts in the proportion of IDU cases in the regions. The proportion of IDU cases in the Central region has declined significantly ($p < 0.001$) while it has in-

TABLE 8: Geographic Origin of Cumulative AIDS Cases, San Diego County

	IDU	Non-IDU
US	86.2%	82.6%
US Dependency	1.5%	0.5%
Other/Unknown	12.4%	16.9%
Total	2,381	10,218

creased significantly ($p < 0.001$) in the South region (see Table 10). This is similar to changes in proportion over regions seen in all AIDS cases in the county.

FACILITY OF DIAGNOSIS

The majority of both IDU and non-IDU AIDS cases were diagnosed in either an inpatient or outpatient hospital facility. IDU AIDS cases were significantly ($p < 0.001$) more likely to be diagnosed in this setting or in a correctional facility

($p < 0.001$) than non-IDU cases, while non-IDU cases were significantly more likely to be diagnosed by a private physician or in an HMO (see Table 11). IDU cases were no more likely than non-IDU cases to be diagnosed by the medical examiner at the time of death.

REPORTED AIDS INDICATOR DISEASES

Non-IDU and IDU AIDS cases do differ somewhat in their reported AIDS indicator diseases (see Table 12). The majority of these dis-

TABLE 9: IDU and Non-IDU Cumulative AIDS Cases by HHS Region of Residence at Diagnosis, San Diego County

	HHS Region						Total Cases
	Central	East	South	North Coastal	North Inland	North Central	
IDU	59%	8%	11%	8%	5%	9%	2,381
Non-IDU	58%	7%	10%	7%	5%	14%	10,222
Total cases	7,327	888	1,225	946	571	1,646	12,603

Note: percentages may not total 100 due to rounding.

TABLE 10: IDU AIDS Cases by HHS Region and 5-year Time Period, San Diego County

HHS Region	Time Period				Cumulative*
	1986-1990	1991-1995	1996-2000	2001-2005	
Central	65.0%	60.2%	59.6%	51.8%	59.2%
East	7.0%	8.1%	7.0%	10.8%	8.1%
South	8.0%	8.8%	11.2%	17.6%	10.8%
North Coastal	5.3%	8.9%	8.1%	8.8%	8.1%
North Inland	3.5%	6.1%	4.4%	3.4%	4.7%
North Central	11.2%	8.0%	9.7%	7.6%	8.9%
Total cases	374	937	641	409	2,381

*1981-2005

TABLE 11: Type of Facility of Diagnosis in Cumulative IDU and Non-IDU AIDS Cases Aged 13 Years and Older, San Diego County

	IDU Cases	Non-IDU Cases	All Cases
Private doctor/HMO	13.7%	26.3%	23.9%
Medical Examiner	0.4%	0.2%	0.3%
Correctional facility	3.7%	0.5%	1.2%
Hospital, inpatient or outpatient	55.4%	44.9%	47.0%
Adult HIV clinic	17.1%	15.1%	15.5%
Other*	9.7%	13.0%	12.1%
Total cases	2,163	8,935	11,098

*Includes Emergency Department, Pediatric HIV Clinic, TB Clinic.

eases are generally only reported by healthcare providers at the time of diagnosis and few cases are updated when additional indicator diseases occur. It is important to remember, when looking at the data presented, that this information pertains to reported conditions only, not to all occurrences of the indicator diseases. The most common AIDS indicator for both IDU (33.1%) and non-IDU (31.3%) cases is a CD4+ count of less than 200 cells/ μ L or less than 14%; there is no significant difference between these proportions.

MSM AND IDU

Of the 2,138 IDU AIDS cases reported in San Diego County, more than half, 1,254 (52.7%) are also MSM (MSM+IDU). Of the male IDU cases, MSM+IDU comprise 61.7%. The MSM+IDU group has a significantly larger proportion of whites ($p < 0.001$) and smaller proportions of blacks ($p < 0.001$) and Hispanics ($p < 0.001$) than IDU-only cases. The MSM+IDU cases (mean age 36.5 years) are younger than male IDU-only cases (mean age 38.9 years) and are

TABLE 12: Cumulative Reported AIDS Indicator Diseases in IDU and Non-IDU AIDS Cases, San Diego County

Reported Indicator Disease*	IDU Cases		Non-IDU Cases	
	Frequency	Percent**	Frequency	Percent**
CD4 count < 200/ μ L or < 14%	789	33.1%	3,195	31.3%
<i>Pneumocystis carinii</i> pneumonia	612	25.7%	2,872	28.1%
Wasting syndrome	418	17.6%	1,616	15.8%
Candidiasis, esophageal	229	9.7%	765	7.5%
<i>Mycobacterium avium</i> complex or <i>M. kansasii</i>	198	8.3%	890	8.7%
HIV encephalopathy	185	7.8%	625	6.1%
Kaposi's sarcoma	181	7.6%	1,376	13.5%
<i>M. tuberculosis</i> , pulmonary	128	5.3%	285	2.7%
Cytomegalovirus	101	4.2%	6.2	2.0%
Cytomegalovirus retinitis	85	3.6%	525	5.1%
<i>M. tuberculosis</i> , disseminated or extrapulmonary	80	3.4%	192	1.9%
Herpes simplex, invasive or chronic	70	2.9%	229	2.2%
Immunoblastic lymphoma	64	2.7%	364	3.6%
Cryptosporidiosis	63	2.6%	413	4.0%
Toxoplasmosis of the brain	49	2.1%	245	2.4%
Pneumonia, recurrent in 12-month period	45	1.9%	71	0.7%
Progressive multifocal leukoencephalopathy	33	1.4%	145	1.4%
Lymphoma, primary of the brain	24	1.0%	157	1.5%
Candidiasis, pulmonary	17	0.7%	64	0.6%
<i>Mycobacterium</i> , of other species	14	0.6%	50	0.5%
Coccidiomycosis	11	0.5%	47	0.5%
Histoplasmosis	7	0.3%	45	0.4%
Isosporiasis	5	0.2%	21	0.2%
Salmonella septicemia	5	0.2%	21	0.2%
Burkitt's lymphoma	4	0.2%	50	0.5%
Carcinoma, invasive cervical	2	0.1%	0	0.0%
Lymphoid interstitial pneumonia	0	0.0%	21	0.2%
Recurrent bacterial infections	0	0.0%	8	0.1%
Total Cases	2,381		10,222	

*May not be a complete list of all indicator diseases experienced by every case.

**Total percent will not total 100 because each case may experience more than one indicator disease.

significantly ($p < 0.001$) more likely to be in the 20-29-year (19.2% vs 12.5%) or 30-39 year (49.6% vs 42.4%) age groups than male IDU-only cases (see Figure 4).

The MSM+IDU cases have a significantly ($p = 0.002$) larger proportion of cases diagnosed by a private medical doctor or in an HMO setting than male IDU-only cases (15.9% vs 11.4%); male IDU-only cases have a significantly larger proportion of cases admitted in a hospital setting (58.8% vs 52.3%; $p = 0.028$) or correctional facility (4.8% vs 2.8%; $p = 0.015$) than MSM+IDU cases. These differences remain when controlling for race.

There is no significant difference in the proportion of cases alive in 2005 between male IDU-only and MSM+IDU cases. Among cases who have died there is a significantly ($p = 0.001$) greater proportion of male IDU-only cases (29.2%) with survival less than a year than of MSM+IDU (19.2%), although the majority of both groups had survival less than three years.

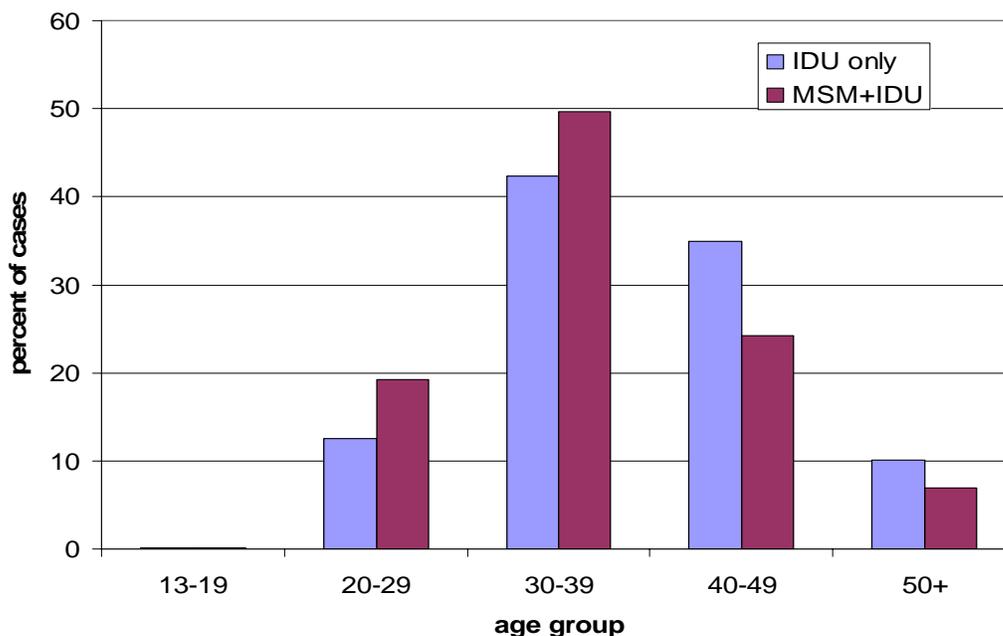
The male IDU-only cases have a shorter period of time between reported HIV diagnosis and AIDS diagnosis than MSM+IDU. There is also a significantly ($p < 0.001$) larger proportion of male IDU-only (51.9%) than MSM+IDU cases (43.5%) with less than one year between the time from reported HIV diagnosis to AIDS diagnosis.

The MSM+IDU cases (mean age 36.5 years) are, on average, statistically significantly ($p < 0.001$) if not clinically significantly, younger than MSM-only cases (mean age 37.9 years). This is in contrast to IDU overall who are, on average, older than MSM.

The MSM+IDU group has a significantly greater proportion of blacks (14.2% vs 9.3%; $p < 0.001$) but a smaller proportion of Hispanics (18.4% vs 21.1%; $p = 0.029$) than MSM-only cases. There is no significant difference between MSM and MSM+IDU in the proportion of whites (67.0% and 65.2% respectively) or Asians/Pacific Islanders (2.6% and 2.2% respectively).

Cases in MSM-only group have a signifi-

FIGURE 4: Frequency of Age-Group in Cumulative MSM and Non-MSM Male IDU AIDS Cases, San Diego County



cantly ($p < 0.001$) greater proportion diagnosed by a private medical doctor or and HMO setting than MSM+IDU (27.0% vs 15.9%), and a significantly smaller proportion diagnosed in a correctional facility (0.5% vs 2.8%; $p < 0.001$) or in a hospital setting (43.8% vs 52.3%; $p < 0.001$). These differences remain when controlling for race. The MSM+IDU cases also have significantly greater proportion of cases of US origin than MSM-only cases (88.5% vs 84.5%; $p < 0.001$), even when controlling for race.

The MSM-only cases have a significantly greater proportion of cases (53.3% vs 44.2%; $p < 0.001$) with less than one year from HIV diagnosis to AIDS diagnosis than MSM+IDU. This is consistent with findings in IDU and non-IDU cases. Of those who have died, MSM-only cases have a greater proportion with survival less than one year than the MSM+IDU cases (52.1% vs 42.6%; $p < 0.001$). These differences are seen when controlling for race. It is possible that IDU brings people to medical care earlier in the course of disease so that they are diagnosed with HIV earlier, extending the time from HIV to AIDS, and are under care extending their survival.

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 for 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 (2001-2005) because additional cases are likely to be reported over time; retrospective case finding will continue. 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 and/or the percent of CD4 cells fell below 14%. This increased the number of cases substantially and allowed for the identification of cases earlier in their disease progress. This has increased both the number of surviving cases and likely increased 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. However, it is possible that some cases may have died, but the death has not yet been reported to the Community Epidemiology Branch. 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, and the United States as a whole. These racial/ethnic demographic differences make comparisons of the County of San Diego to the nation as a whole, and to other 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.

DATA SOURCES:

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

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