AIDS in Older Persons

County of San Diego 2011

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Health and Human Services Agency

Epidemiology & Immunization Services

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Contact us for more information at:

Epidemiology & Immunization Services
HIV/AIDS Epidemiology
3851 Rosecrans St, MS P577
San Diego, CA 92110

(619) 692-8545
(619) 692-8427

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Nick Macchione, M.S.,M.P.H, F.A.C.H.E., Director
Wilma Wooten, M.D., M.P.H.,
Public Health Officer
Karen Waters-Montijo, M.P.H
Chief, Epidemiology & Immunization Services
Michele Ginsberg, M.D.,
Medical Director,
Epidemiology & Immunization Services

Michael Bursaw, M.P.H., (619) 692-8414
Ernie Awa, (619) 692-8413
Lorri Freitas, M.P.H, (619) 692-8433
Minda Johnson, (619) 692-8463
Francisco McGann, (619) 692-8476
Sonia Hunter, (619) 692-8540
Samantha Tweeten, Ph.D., (619) 692-8505

Older persons, defined in this paper as those aged 50 years and older at the time of diagnosis, have not been a focus in HIV/AIDS prevention and testing programs. The first AIDS case in an older person in San Diego County was diagnosed in 1981 and since then there have been 1,678 diagnoses including 464 in persons aged 60 and older. Of cumulative adolescent/adult (aged 13 years or older) cases diagnosed in the county, 11.6% were 50 years of age or older, more than the 4.1% that are youth (aged 13-24 years) who have been a target of prevention efforts. In recent years (2006-2010), the percent of those aged 50 years and older at diagnosis has risen to 17.4%.

Older persons with AIDS may face different challenges than younger cases, requiring different services and prevention programs. Also, in living individuals diagnosed when less than 50 years of age, 30.3% are now 50 years of age or older (4.0% are 60 years of age and older). Like those diagnosed at older ages, older persons living with AIDS may require different services to manage the disease in addition to services that focus on issues of aging.

Gender

The majority of older persons with AIDS are male. Of those 50 years and older with an AIDS diagnosis, the percentage of males has declined from 100% in 1981-1985, to 87% in recent cases (see Table 1).

Overall, the proportion of males and females in the older case group is similar to that seen in the younger cases. In the most recent time period there is an increase in the percentage of females in the older group compared to the younger group. There is an overall trend for HIV and AIDS diagnoses at later ages. It should be noted that the number of older female cases in each time period is small and trends should be interpreted carefully.

Table 1:
Percent of AIDS cases over 5-year time periods by age group. and gender, San Diego County

	Male		Female	
	<50 years	50+ years	<50 years	50+ years
1981-1985	98.4%	100.0%	1.6%	0.0%
1986-1990	95.8%	90.6%	4.2%	9.4%
1991-1995	93.4%	92.5%	6.6%	7.5%
1996-2000	90.5%	91.8%	9.9%	8.2%
2001-2005	89.6%	86.6%	10.4%	13.4%
2006-2010	90.3%	87.0%	9.7%	13.0%
Cumulative	92.8%	90.1%	7.5%	9.9%
Total Cases	11,820	1,512	962	166

Race/Ethnicity

The proportion of whites in older AIDS cases has been consistently higher than in younger AIDS cases (see Table 2). Correspondingly, the proportion has been lower in other race/ethnicities than younger cases. In cumulative cases (1981-2010), those who are older are significantly more likely to be white ($p<0.001$), and less likely to be black ($p=0.006$) or Hispanic ($p<0.001$). In more recent cases (2006-2010), the significant differences remain between the proportion who are white ($p<0.001$) or Hispanic ($p<0.001$), but differences in proportion in blacks is no longer significant.

There are differences across race/ethnicities by gender (see Table 3). Older male cases are more likely to be white than younger cases, both cumulatively ($p<0.001$) and recently ($p<0.001$). Also, both older male cumulative ($p<0.001$) and recent ($p=0.002$) cases are less likely to be Hispanic than younger cases, but only cumulative older cases are less likely to be black than younger cases ($p=0.017$). Unlike male cases, older female cases differ from younger female cumulative ($p=0.008$) and recent ($p=0.019$) cases only in being less likely to be black. No differences are seen between older and younger female cases in proportion who are white or Hispanic.

Mode of Transmission

Male and female cases have different risk factors for transmission across all age groups (see Table 4). In all male cases, the most often reported risk is Men who have Sex with Men (MSM). Cumulative older male cases are less likely to be MSM than younger cases ($p=0.001$). In recent years, there is no statistical difference in the proportion of older and younger cases reporting MSM ($p=0.078$). Older cases are more likely to have reported heterosexual risk, cumulatively ($p<0.001$) and recently ($p=0.009$). There is no difference in cumulative or recent male cases in terms of proportion reporting Injecting Drug Use

Table 2

Percent of cumulative (1981-2010) and recent (2006-2010) diagnosed AIDS cases, by age group and race/ethnicity, San Diego County

Race/	Cumulative (1981-2010)		Recent (2006-2010)	
Ethnicity	<50 years	50+ years	<50 years	50+ years
White	58.8%	66.7%	39.5%	53.3%
Black	12.9%	10.5%	13.9%	13.7%
Hispanic	25.2%	20.4%	41.7%	30.0%
Other*	3.1%	2.3%	4.9%	3.0%
Total Cases	12,782	1,678	1,421	300

*Includes Asian, Pacific Islander, and Native American.

Table 3
Race/ethnicity in cumulative (1981-2010) and recent (2006-2010) diagnosed AIDS cases, by age group and gender, San Diego County

	Cumulative (1981-2010)		Recent (2006-2010)	
	<50 years	50+ years	<50 years	50+ years
Male Cases				
White	60.6%	69.3%	41.0%	56.7%
Black	11.8%	9.8%	12.5%	11.5%
Hispanic	24.7%	19.1%	41.5%	29.1%
Other*	3.0%	1.8%	5.0%	2.7%
Total cases	11,820	1,512	1,283	261
Female Cases				
White	36.4%	42.8%	25.4%	30.8%
Black	26.9%	17.5%	27.5%	28.2%
Hispanic	31.7%	32.5%	42.8%	35.9%
Other*	5.0%	7.2%	4.3%	5.1%
Total cases	962	166	138	39

*Includes Asian, Pacific Islander, and Native American.

Table 4:
Mode of transmission in cumulative (1981-2010) and recent (2006-2010) diagnosed AIDS cases, by age group and gender, San Diego County

	Cumulative (1981-2010)		Recent (2006-2010)	
	<50 years	50+ years	<50 years	50+ years
Male Cases				
MSM	79.2%	75.6%	76.8%	71.6%
IDU	6.5%	7.1%	6.4%	6.9%
MSM+IDU	11.6%	8.2%	9.7%	10.3%
Heterosexual	1.7%	4.6%	5.6%	10.0%
Blood/blood products	0.7%	3.7%	0.2%	0.0%
Other*	0.3%	0.8%	1.3%	1.2%
Total Cases	11,820	1,512	1,283	261
Female Cases				
IDU	37.2%	18.7%	19.6%	20.5%
Heterosexual	55.8%	66.9%	73.2%	76.9%
Blood/blood products	3.8%	11.4%	0.0%	0.0%
Other*	3.2%	3.0%	7.2%	2.6%
Total Cases	962	166	138	29

*Includes maternal and risk not specified.

(IDU) as mode of transmission. Cumulative older cases are more likely ($p<0.001$) to have had blood products (whole blood, packed red cells, clotting factor for hemophilia, etc.) than younger cases, but this difference is not seen in recent cases. Younger cumulative cases are more likely to report both MSM and IDU (MSM+IDU) than older cases ($p<0.001$), but significant differences are not seen in recent cases. In younger cases the "other" category is more likely due to maternal acquisition or to have no specified risk.

Cumulative female older cases are more likely than younger cases to list heterosexual contact ($p=0.008$) or transfusion or tissue transplant ($p<0.001$) as mode of transmission, and less likely to list IDU ($p<0.001$). It appears that the difference between older and younger cases in proportion of "other" category in recent cases is significant, but 4.3% of younger cases are due to maternal transmission, which could not occur in the older cases. Once this is accounted for the proportion is very similar; younger cases have 1% with no identified risk compared to older cases with 0.7% having no identified risk. There were no significant differences in reported mode of transmission between older and younger female cases in recent years when the maternal transmission is accounted for.

Residence at Diagnosis

Most cumulative AIDS cases diagnosed in the county resided in the Central HHSA Region at the time of diagnosis. Those aged 50 years and over, however, were less likely than those under 50 years of age to live in the Central Region (see Table 5). In cumulative cases, a smaller proportion of older persons lived in the Central Region at time of diagnosis ($p<0.001$) than younger cases, but a greater proportion lived in the East ($p=0.005$), South ($p=0.014$), North Coastal ($p<0.001$), North Inland ($p<=.006$), or North Central ($p<0.001$) regions. Significant differences remain when controlling for race/ethnicity. In recent cases, there are no significant differences in proportions across the HHSA regions.

Most AIDS cases were living in the City of San Diego at the time of their diagnosis (see Table 6). Almost 74% of cases under age 50 years were living in San Diego, a significantly greater proportion than the 64% of those aged 50 years and older ($p<0.001$). Of areas with more than 1.2% of the diagnoses, only Spring Valley had a similar proportion of cases aged 50 and older than those under 50. Chula Vista, Oceanside, El Cajon, Escondido, Vista, La Mesa, National City, and San Ysidro each had a greater proportion of the cases 50 years and older, compared to cases less than 50 years of age. With the exception of Escondido, the areas in Table 6 occur not just in the order of proportion of cases, but in population size.

Country of Origin

There is no significant difference in the

Table 5
Region of residence at time of diagnosis for cumulative (1981-2010) and recent (2006-2010) AIDS cases, by age group, San Diego County

	Cumulative (1981-2010)		Recent (2006-2010)	
HHSA Region	<50 years	50+ years	<50 years	50+ years
Central	58.3%	46.3%	48.8%	48.7%
East	7.0%	8.9%	8.5%	8.3%
South	10.6%	12.6%	18.7%	20.0%
North Coastal	7.2%	9.8%	7.9%	8.7%
North Inland	4.4%	5.9%	4.8%	4.3%
North Central	12.4%	16.1%	11.2%	9.0%
Total Cases	12,773*	1,678	1,419	300

*Region not available for 2 cases. **Region not available for 9 cases.

Table 6
City of residence at time of diagnosis for cumulative (1981-2010) AIDS cases, by age group, San Diego County

City of Residence at Diagnosis	Age		
	<50 years	50+ years	All Cases
San Diego	73.8%	64.3%	72.7%
Chula Vista	3.6%	4.8%	3.8%
Oceanside	2.8%	3.6%	2.9%
El Cajon	2.0%	2.8%	2.1%
Escondido	1.9%	2.8%	2.0%
Vista	1.6%	1.8%	1.7%
La Mesa	1.4%	1.8%	1.5%
National City	1.4%	1.7%	1.4%
San Ysidro	1.5%	2.1%	1.4%
Spring Valley	1.5%	1.5%	1.4%
Total Cases	12,782	1,678	14,460

Each of the following has less than 1.2% of the remaining cases: Alpine, Bonita, Bonsall, Borrego Springs, Boulevard, Camp Pendleton, Campo, Cardiff-by-the-Sea, Carlsbad, Coronado, Del Mar, Descanso, Encinitas, Guatay, Imperial Beach, Jamul, Julian, Lakeside, Lemon Grove, Leucadia, Mount Laguna, Pauma Valley, Pine Valeey, Poway, Ramona, Ranchita, Rancho Santa Fe, San Luis Rey, San Marcos, Santa Ysabel, Santee, Solana Beach, and Valley Center.

proportions of cumulative or recent older AIDS cases born in the United States (US) compared to younger cases (see Table 7). There has, however, been a significant decline in the proportion of both older ($p<0.001$) and younger ($p<0.001$) AIDS cases born in the US over time. When the proportion of cases born in the US is examined by race/ethnicity, no differences (either recently or cumulatively) are seen in whites or blacks, but both older ($p<0.001$) and younger ($p<0.001$) Hispanic AIDS cases are more likely to have been born outside the US ($p<0.001$).

Facility of Diagnosis

The greatest proportion of cumulative AIDS cases were diagnosed in the hospital setting, either as an inpatient or an outpatient in both older and younger cases (see Table 8). Compared to cumulative cases, in recent years there has been an increase in the proportion of both younger and older cases diagnosed in the hospital setting. Recent ($p=0.638$) and cumulative ($p=0.515$) older cases, however, are no more likely to have been diagnosed in the hospital setting than younger cases. There have also been significant increases in the number of cases diagnosed in correctional facilities between recent and cumulative cases in those who are younger at diagnosis ($p=0.034$), but not in older cases ($p=0.117$). There are no significant differences between older and younger cases in proportion diagnoses in correctional facilities within cumulative ($p=0.242$) and recent ($p=0.287$) cases. There are no statistically significant differences in the proportion of younger and older cases diagnosed in other settings.

Time From HIV to AIDS

Early in the epidemic, the vast majority of cases progressed from HIV infection to AIDS in less than one year (see Figure 1). There was a substantial drop in the proportion of cases with less than a year between HIV and AIDS diagnoses after the 1986-1990 time period, but the proportion was still more than 40%. In the 1991-1995

Table 7
Place of birth of cumulative (1981-2010) and recent (2006-2010) AIDS cases, by age group, San Diego County

	Cumulative (1981-2010)		Recent (2006-2010)	
Place of Birth	<50 yrs	50+ yrs	<50 yrs	50+ yrs
USA*	81.5%	81.1%	71.4%	71.0%
Mexico	13.4%	12.6%	22.9%	21.3%
Other	5.1%	6.3%	5.7%	7.7%
Total cases	12,782	1,678	1664	322

*Includes US dependencies.

Table 8

Facility type where diagnosed for cumulative (1981-2010) and recent (2006-2010) AIDS cases, by age group, San Diego County

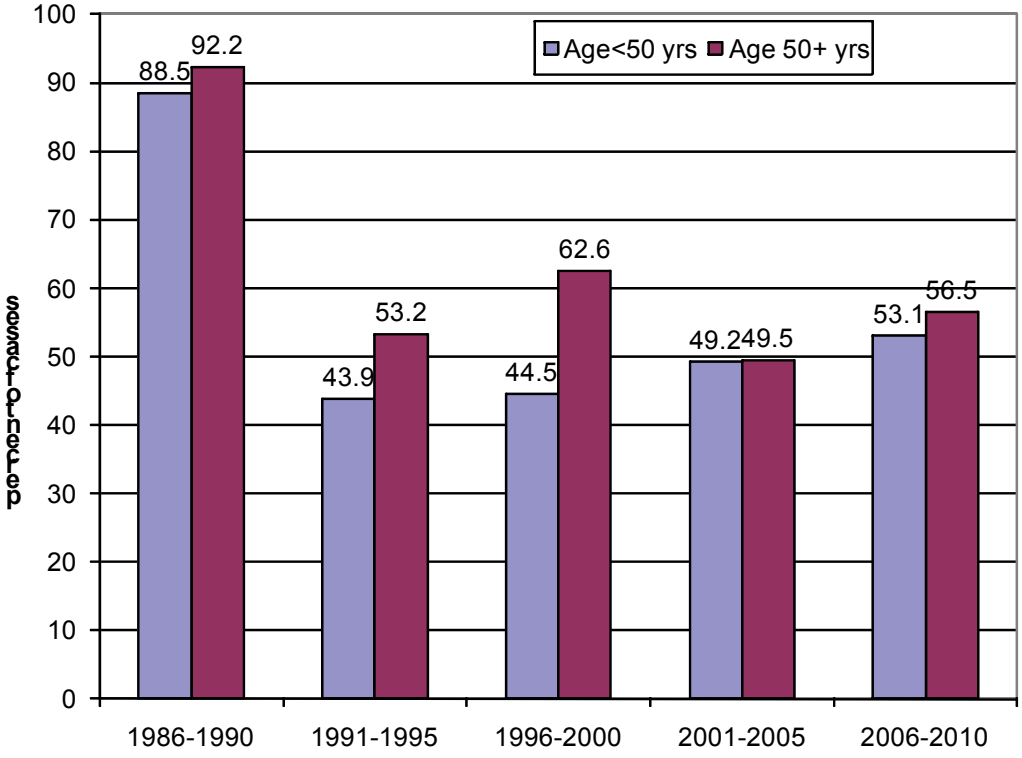
	Cumulative (1981-2010)		Recent (2006-2010)	
Facility Type	<50 yrs	50+ yrs	<50 yrs	50+ yrs
Private provider, HMO	18.6%	19.1%	19.8%	19.3%
Hospital, in-, outpatient	36.0%	36.6%	45.4%	43.4%
Correctional facility	0.9%	1.2%	1.5%	2.3%
Adult HIV clinic	11.4%	11.1%	16.2%	13.3%
Coroner	0.2%	0.1%	0.2%	0.3%
Missing	22.8%	24.0%	16.6%	21.3%
Other*	10.1%	7.9%	0.3%	0.1%
Total**	12,782	1,678	1,421	300

*Includes pediatric HIV clinic, emergency room, TB clinic, and other HIV clinic types.

**Information not available on all cumulative cases.

Figure 1

Percent of AIDS cases progressing from HIV diagnosis to AIDS diagnosis in less than 1 year over 5-year time periods, by age group, San Diego County



(p=0.005) and 1996-2000 (p<0.001), time periods, older cases have significantly greater proportion with less than a year between diagnoses. In more recent time periods, 2001-2005 (p=0.906) and 2006-2010 (p=0.283), no significant differences are seen.

Survival

All cases diagnosed in 2001-2005 were analyzed to determine the proportion surviving less than 12, 24, and 36 months (see Table 9). The Centers for Disease Control and Prevention (CDC) provides national proportions surviving for those diagnosed in the same time period. When comparing county and national data by age group, those in the 30-39 and 40-49 age groups had significant differences in proportions surviving at <24 and <36 months (maximum p-value 0.02); those in the 40-49 age group differed in survival <12 months (p=0.033). In each case, San Diego County had greater survival than national levels. In looking at cases 50 years and older, no differences are seen in comparison to national survivals.

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 patient privacy or other reasons. Each of these situations, and others, result in data that may not be accurate and these inaccuracies may impact analyses.

Table 9

Proportion of AIDS cases diagnosed in 2001-2005 surviving greater than 12, 24, and 36 months, by age group, San Diego County (CoSD) compared to US (CDC) data

	Proportion Surviving					
	>12 months		>24 months		>36 months	
Age Group (yrs)	CoSD	US	CoSD	US	CoSD	US
30-39	0.94	0.92	0.92#	0.89	0.91#	0.86
40-49	0.9#	0.88	0.88#	0.85	0.85#	0.82
50-59	0.75*	0.82	0.72*	0.78	0.68*	0.74
60+	0.78*	0.71	0.75*	0.65	0.71*	0.61
<50	0.93	0.91	0.91	0.87	0.89	0.85
≥50	0.81	0.79	0.76	0.75	0.74	0.70

*Very small number of cases in age group.

#Significant difference at p<0.05.

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 and into 2012. 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 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. However, it is possible that some cases may have died, but the death was not reported to the County 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 and must be taken into account when discussing the impact of the AIDS epidemic on the San Diego County.

Data sources:

County of San Diego, HIV/AIDS Epidemiology Unit database and Annual Report.
SANDAG population estimates.
Centers for Disease Control and Prevention. *HIV Surveillance Report, 2009;* vol. 21.

Epidemiology & Immunization Services Branch
HIV/AIDS Epidemiology Unit
3851 Rosecrans St, MS P577
San Diego CA 92110