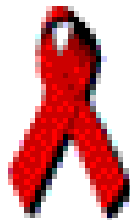


# ASD

## Adult and Adolescent Spectrum of HIV Disease (ASD) Semi-Annual Summary Report 1989-2000

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January 2002



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**Los Angeles**  
**Adult and Adolescent Spectrum of HIV Disease (ASD)**  
**Semi-Annual Summary Report**  
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## Introduction

The Adult/Adolescent Spectrum of Disease (ASD) study is a U.S. Centers for Disease Control and Prevention (CDC)–sponsored medical records-based project designed to evaluate trends in the clinical course, treatment and health care utilization of persons living with HIV infection in Los Angeles County (LAC). LAC is one of the 10 sites in the U.S. that was selected to participate in the study beginning in 1990. Data are collected from the medical records of HIV-infected patients who are 13 years of age or older and receiving medical care at two public and one private HIV clinic in LAC. The three clinics provide routine care to HIV-infected patients and are among the largest HIV clinics in the county, reporting 28% of all AIDS cases in 1999. These clinics were selected to be representative of the types of facilities providing HIV care in Los Angeles County and include the Rand Schrader HIV Clinic at the Los Angeles County-USC Medical Center, the HIV Clinic at the Harbor-UCLA Medical Center, and the Kaiser-Sunset HIV Clinic, a private health maintenance organization. A private medical practice, the Beer Medical Group, was also included in the project until January 2001. Originally, ASD enrolled all HIV-infected persons at each site. However early on it was recognized that gay and bisexual men and whites were more than adequately represented in ASD, and minorities, women and injection drug users (IDUs) were underrepresented. In January 1992, ASD added LAC-USC Medical Center as a site where only women are enrolled. In addition, beginning in February 1992, only women, minorities and IDUs were enrolled at Kaiser Sunset and the Beer Medical Group. All HIV-infected from the other public facility, Harbor-UCLA, continue to be enrolled.

Trained nurses and medical records technicians review medical records for basic demographic data; HIV risk information; AIDS-defining conditions; other infections and conditions; treatment and prophylaxis data; and laboratory data that includes CD4<sup>+</sup> lymphocyte counts and viral load measurements. The medical records of individual patients are abstracted every 6-months. The mean number of months of follow-up in ASD is 38 months. Although designed to be representative of persons receiving medical care for HIV infection in LAC, the study is not population-based and therefore may not be generalizable to all patients receiving HIV care in LAC.

This semi-annual report includes a description of the demographic characteristics of patients with clinical visits during the last 2 years; summaries of AIDS-defining and non-AIDS defining conditions; and trends in treatment, mortality and health care utilization. A list of publications on the national and Los Angeles ASD data is also included. If you have further questions regarding the ASD study, please contact the HIV Epidemiology Program at 213-351-8196.

**Table 1. Demographic Characteristics of ASD Patients with Visits in the Past 24 Months<sup>1</sup>**

Characteristics	Male		Female		All	
	n	%	n	%	n	%
<b>Age (at enrollment)</b>						
13-19	3	0%	20	5%	23	2%
20-29	148	17%	131	30%	279	21%
30-39	403	45%	155	36%	558	42%
40-49	251	28%	91	21%	342	26%
50+	83	9%	36	8%	119	9%
<b>Race/Ethnicity</b>						
White	202	23%	58	13%	260	20%
African-American	262	30%	127	29%	389	29%
Latino	366	41%	232	54%	598	45%
Asian	45	5%	6	1%	51	4%
AN/AI	6	1%	5	1%	11	1%
Other/Unknown	7	1%	5	1%	12	1%
<b>HIV Risk Category</b>						
MSM	594	67%	0	0%	594	45%
IDU	59	7%	76	18%	135	10%
MSM/IDU	53	6%	0	0%	53	4%
Heterosexual	32	4%	173	40%	205	16%
Others	21	2%	32	7%	53	4%
Unknown	129	15%	152	35%	281	21%
<b>Country of Birth</b>						
US	539	61%	203	47%	742	56%
US Dependency	10	1%	1	0%	11	1%
Foreign-born:	245	28%	211	49%	456	35%
(Mexico)	(134)	(55%)	(99)	(47%)	(233)	(51%)
(Central America)	(34)	(14%)	(77)	(36%)	(111)	(24%)
(Asian/PI)	(31)	(13%)	(4)	(2%)	(35)	(8%)
(Other/Unknown)	(46)	(19%)	(31)	(15%)	(77)	(17%)
Unknown	85	10%	18	4%	103	8%
<b>Site of Care</b>						
Harbor UCLA	559	63%	119	27%	678	51%
LAC/USC	0	0%	269	62%	269	20%
Kaiser Sunset	206	23%	24	6%	230	17%
BEER	123	14%	21	5%	144	11%
<b>Total</b>	<b>888</b>	<b>67%</b>	<b>433</b>	<b>33%</b>	<b>1,321</b>	<b>100%</b>
<b>Vital Status at Most Recent Interval<sup>2</sup></b>						
Alive and active	844	18%	436	35%	1,280	22%
Dead	1,890	41%	325	26%	2,215	38%
Relocated/Lost/Unkwn	1,865	41%	484	39%	2,349	40%
<b>Total</b>	<b>4,599</b>	<b>100%</b>	<b>1,245</b>	<b>100%</b>	<b>5,844</b>	<b>100%</b>

<sup>1</sup> Includes the time period 01/01/1999 to 12/31/2000.

<sup>2</sup> Totals include all ASD patients.

**Table 2. AIDS Indicator Conditions<sup>1</sup> for All ASD Patients, 1989-2000 (N=5,844)**

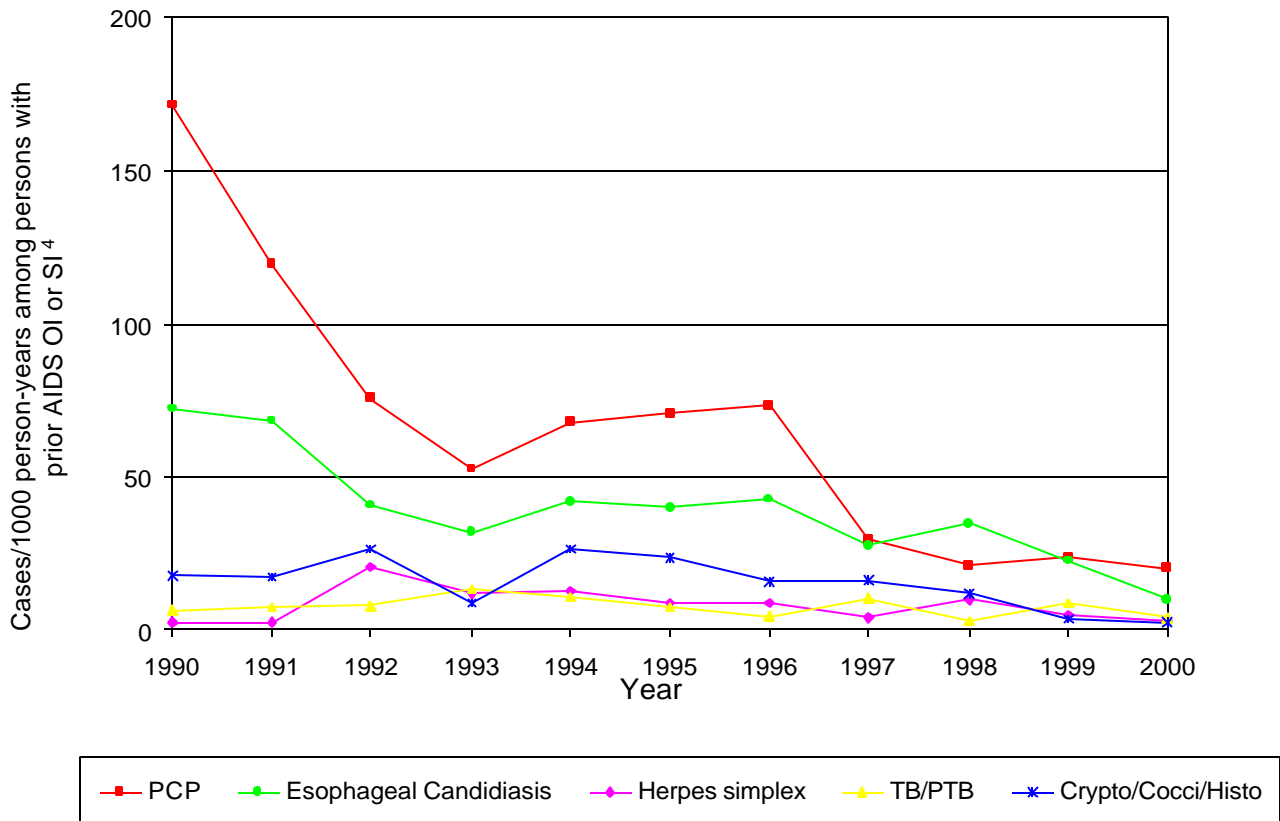
<b>Indicator Condition<sup>2</sup></b>	<b>N</b>	<b>%</b>
Candidiasis, bronchi, trachea, or lungs	12	0.2%
Candidiasis, esophageal	496	8.5%
Invasive cervical cancer	6	0.1%
Coccidioidomycosis, disseminated or extrapulmonary	22	0.4%
Cryptococcosis, extrapulmonary	293	5.0%
Cryptosporidiosis, chronic intestinal	174	3.0%
Cytomegalovirus disease other than retinitis	306	5.2%
Cytomegalovirus retinitis	416	7.1%
HIV encephalopathy	305	5.2%
Herpes simplex: chronic ulcers, pneumonitis or esophagitis	129	2.2%
Histoplasmosis, disseminated or extrapulmonary	45	0.8%
Isosporiasis, chronic intestinal	41	0.7%
Kaposi's sarcoma	606	10.4%
Lymphoma, Burkitt's	11	0.2%
Lymphoma, immunoblastic	88	1.5%
Lymphoma, primary in brain	49	0.8%
Mycobacterium avium or M. kansasii, disseminated	527	9.0%
M. tuberculosis, pulmonary	86	1.5%
M. tuberculosis, disseminated or extrapulmonary	175	3.0%
Mycobacterium, other or unidentified species	57	1.0%
Pneumocystis carinii pneumonia	1265	21.6%
Pneumonia, recurrent	23	0.4%
Progressive multifocal leukoencephalopathy	41	0.7%
Salmonella septicemia, recurrent	7	0.1%
Toxoplasmosis of the brain	189	3.2%
Wasting syndrome	828	14.2%
CD < 200 ul <sup>3</sup>	1250	21.4%

<sup>1</sup> Based on the 1993 AIDS case definition.

<sup>2</sup> Only the first occurrence of an indicator condition is counted.

<sup>3</sup> Includes only those without any other AIDS-defining condition.

**Figure 1. Trends in PCP<sup>1</sup>, Esophageal Candidiasis<sup>1</sup>, Herpes Simplex<sup>1</sup>, TB<sup>1,2</sup>/PTB<sup>1,3</sup> and Cryptococcosis/Coccidioidomycosis/Histoplasmosis<sup>1</sup>, 1990-2000**



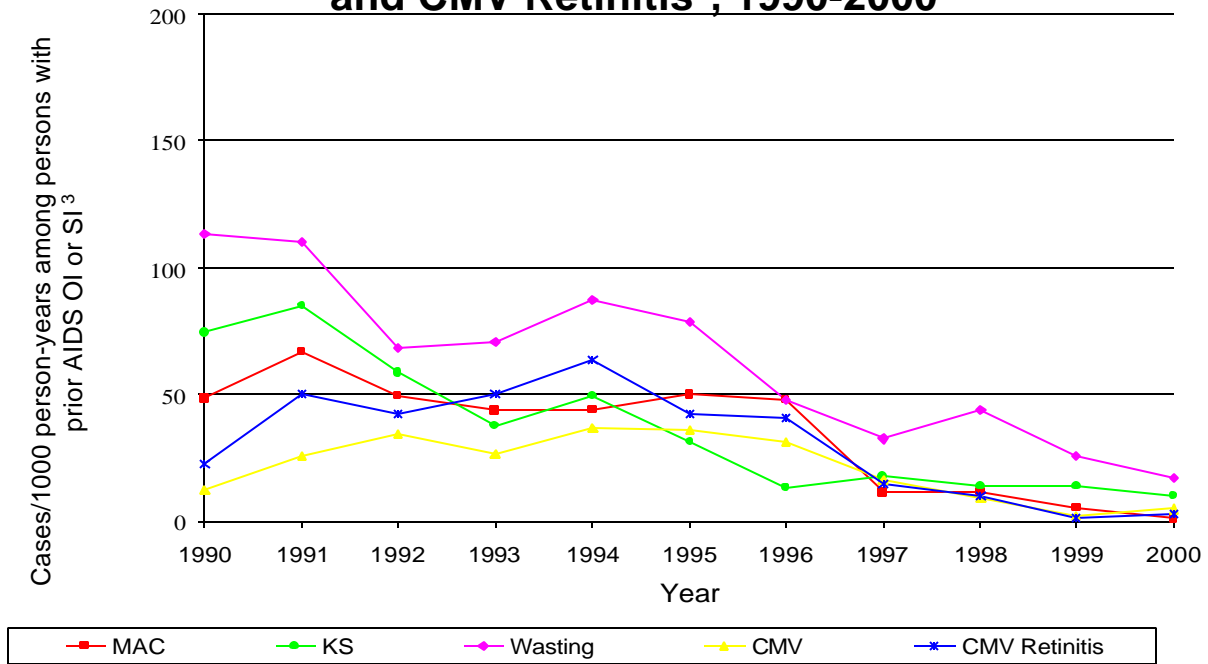
<sup>1</sup> OI present at entry into care are excluded. Multiple episodes of OIs are counted. This is a change in method from previous report.

<sup>2</sup> TB: Disseminated or Extrapulmonary TB.

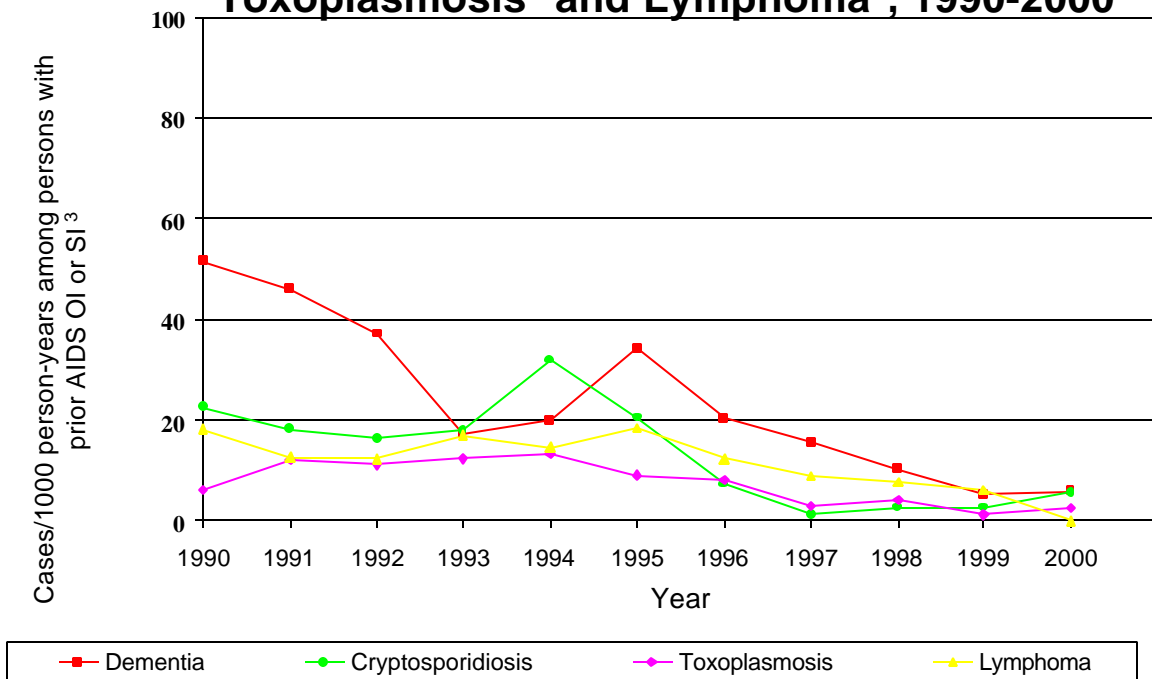
<sup>3</sup> PTB: Pulmonary TB.

<sup>4</sup> Severe Immunosuppression (SI) is defined as CD4+ < 200 cells/mm<sup>3</sup> or CD4+ percent < 14%.

**Figure 2. Trends in MAC<sup>1</sup>, KS<sup>1</sup>, Wasting Syndrome<sup>1</sup>, CMV<sup>1</sup> and CMV Retinitis<sup>1</sup>, 1990-2000**



**Figure 3. Trends in Dementia<sup>2</sup>, Cryptosporidiosis<sup>1</sup>, Toxoplasmosis<sup>1</sup> and Lymphoma<sup>2</sup>, 1990-2000**



<sup>1</sup> OI present at entry into care are excluded. Multiple episodes of OIs are counted. This is a change in method from previous report.

<sup>2</sup> Only first occurrence is counted for patients with more than one episode.

<sup>3</sup> Severe Immunosuppression (SI) is defined as CD4+ < 200 cells/mm<sup>3</sup> or CD4+ percent < 14%.



**Table 3. Other Infections<sup>1</sup> Present in >= 5% of Patients (N=1,321<sup>2</sup>), 1989-2000**

<b>Infection</b>	<b>N</b>	<b>%</b>
Thrush	478	36%
Skin infection (excludes genital infection, H zoster, syphilis)	466	35%
Genital/vaginal/cervical/penile infection or ulcer	408	31%
Bronchitis	363	27%
Tinea infection	330	25%
Upper respiratory infection	273	21%
Oral cavity/perioral (includes stomatitis, aphthous ulcer)	254	19%
Urinary tract infection (UTI)	233	18%
Herpes zoster/shingles	232	18%
Sinusitis/mastoiditis (infectious)	230	17%
Condyloma acuminatum	204	15%
Diarrhea (infectious)	198	15%
Hepatitis	186	14%
Gastrointestinal infection/gastritis	151	11%
Pharyngitis	150	11%
Pneumonia	146	11%
Rectal infection (includes abscess or ulcer)	138	10%
Syphilis	126	10%
Oral hairy leukoplakia	102	8%
Otitis	91	7%
Warts (excludes genital/condyloma)	91	7%
Eye infection	70	5%

<sup>1</sup> Includes conditions that are not part of the 1993 AIDS case definition.

<sup>2</sup> Includes only persons whose date of last contact was within the last 24 months. (01/01/1999-12/31/2000)

**Table 4. Other Non-Infectious Conditions<sup>1</sup> Present in  $\geq$  5% of Patients (N=1,321<sup>2</sup>), 1989-2000**

<b>Non-Infectious Condition</b>	<b>N</b>	<b>%</b>
Dermatitis	593	45%
Depression	464	35%
Drug-related conditions	376	28%
Fatigue	346	26%
Neuropathy,peripheral	334	25%
Diarrhea	274	21%
Headache	267	20%
Non-IV drug abuse	265	20%
Weight loss,unspecified	242	18%
Weight loss,>10 lbs or 10%	232	18%
Lymphadenopathy	213	16%
Hypertension	204	15%
Fever	200	15%
Alcohol abuse	173	13%
Sinusitis	168	13%
Nausea	156	12%
Night sweats	156	12%
Pregnancy	156	12%
Visual disturbances	145	11%
Anxiety	137	10%
Anergy	105	8%
Diabetes	99	7%
Abnormal liver function	93	7%
Vomiting	89	7%
Nephropathy/renal failure	87	7%
Psychosis(includes schizophrenia)	85	6%
Thrombocytopenia	69	5%

<sup>1</sup> Includes conditions that are not part of the 1993 AIDS case definition.

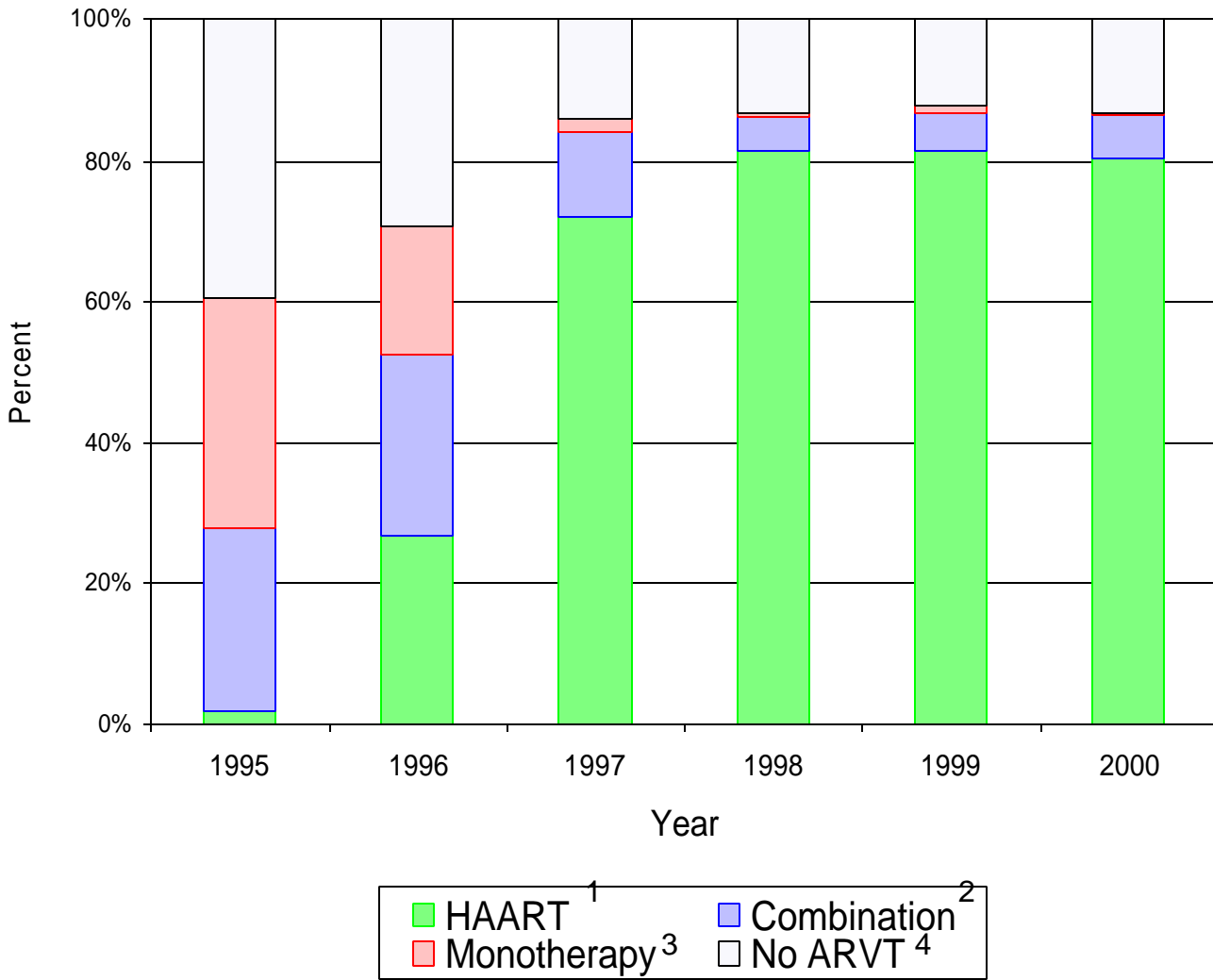
<sup>2</sup> Includes only persons whose date of last contact was within the last 24 months. (01/01/1999-12/31/2000)

**Table 5. Primary Malignant Neoplasms, All Patients, 1989-2000 (N=5,844)**

<b>Neoplasm Site</b>	<b>Total N</b>	<b>N with CD4 Data</b>	<b>Mean CD4 at Neo. Dx.</b>	<b>Mean Age at Neoplasm Dx.</b>
Anorectal	15	12	309	43
Brain	6	<5	68	41
Breast	5	<5	146	50
Bone	5	5	182	47
Endocrine	<5	<5	425	35
Esophagus				
Genitourinary, Female	31	27	243	34
Genitourinary, Male	8	7	236	52
Heart/mediastinum	0			
Intestine/colon	8	6	241	44
Leukemia	0			
Liver/gall bladder/pancreas	<5	<5	113	45
Lymphoma	30	22	90	38
Lung	25	20	172	45
Myeloma	<5	<5	*	44
Oral cavity/pharynx	11	10	135	41
Renal (kidney, bladder)	5	<5	482	54
Respiratory, upper	9	7	70	43
Respiratory, lower	<5	<5	246	55
Skin (other than KS)	58	53	246	45
Stomach	<5	<5	186	44
Other	5	<5	366	42

\* Less than two patients with CD4 data

**Figure 4. Antiretroviral Therapy Regimens Prescribed to ASD Patients, 1995-2000**



<sup>1</sup> HAART regimen is defined as

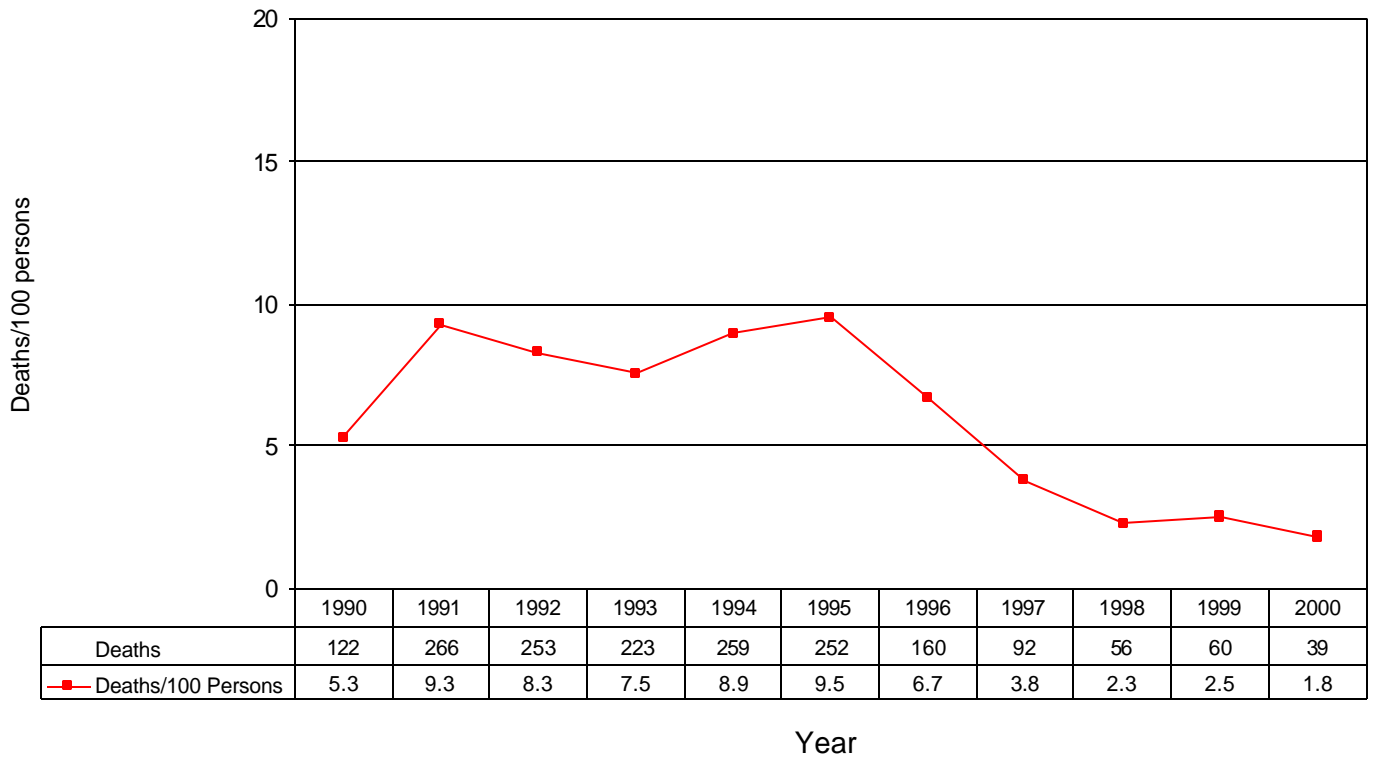
- a)  $\geq 3$  drugs including a protease inhibitor (PI)
- b)  $\geq 3$  drugs including a non-nucleoside reverse transcriptase inhibitor (NNRTI)
- c) 3 drugs including nucleoside reverse transcriptase inhibitor (NRTI) that includes abacavir

<sup>2</sup> Combination therapy includes other combinations which do not qualify as a HAART regimen.

<sup>3</sup> Monotherapy includes 1 drug.

<sup>4</sup> No antiretroviral therapy regimen prescribed.

**Figure 5. Mortality<sup>1</sup> among ASD Patients, 1990-2000**



<sup>1</sup> Number of deaths divided by number of patients with a visit during the year. Deaths occurring after a patient was lost or relocated were not included.

**Table 6. Rate of Outpatient and Emergency Room Visits (per Person per Year) by Range of Lowest CD4 in a Given Year**

**Rate of Outpatient Visits**

Year	CD4 = 0-200		CD4 = 201-499		CD4 = 500+		Total <sup>1</sup>	
	total	rate	total	rate	total	rate	total	rate
1990	9,399	19.3	4,192	12.0	877	9.8	16,408	13.9
1991	10,566	20.2	4,138	10.9	1,436	9.5	19,239	14.9
1992	13,142	20.4	4,573	11.7	1,354	9.8	21,659	16.0
1993	11,849	17.5	4,998	12.6	1,224	9.8	20,509	14.9
1994	12,191	18.6	5,074	13.0	1,451	11.1	21,593	15.6
1995	13,486	20.6	4,902	13.8	1,478	11.7	21,885	16.7
1996	10,973	18.9	4,991	14.0	1,259	11.4	18,545	15.7
1997	8,651	15.9	6,019	14.1	1,744	11.8	17,237	13.8
1998	7,772	15.3	6,132	12.2	2,126	10.7	16,764	12.5
1999	5,991	13.4	5,229	11.1	2,355	9.8	13,969	11.2
2000	5,108	14.7	5,255	11.4	2,291	10.0	13,054	11.7

**Rate of Emergency Room Visits**

Year	CD4 = 0-200		CD4 = 201-499		CD4 = 500+		Total <sup>1</sup>	
	total	rate	total	rate	total	rate	total	rate
1990	161	0.3	36	0.1	14	0.2	256	0.2
1991	211	0.4	50	0.1	48	0.3	370	0.3
1992	259	0.4	135	0.3	26	0.2	509	0.4
1993	267	0.4	68	0.2	18	0.1	414	0.3
1994	300	0.5	94	0.2	27	0.2	577	0.4
1995	334	0.5	80	0.2	21	0.2	523	0.4
1996	244	0.4	81	0.2	18	0.2	389	0.3
1997	219	0.4	92	0.2	33	0.2	380	0.3
1998	173	0.3	95	0.2	38	0.2	332	0.2
1999	177	0.4	83	0.2	30	0.1	304	0.2
2000	153	0.4	87	0.2	27	0.1	289	0.3

<sup>1</sup> Total includes patients without a CD4 count.

**Table 7. Rate of Hospitalizations and Hospital Days (per Person per Year) by Range of Lowest CD4 in a Given Year**

**Rate of Hospitalizations**

Year	CD4 = 0-200		CD4 = 201-499		CD4 = 500+		Total <sup>1</sup>	
	total	rate	total	rate	total	rate	total	rate
1990	586	1.2	58	0.2	10	0.1	823	0.7
1991	636	1.2	70	0.2	15	0.1	980	0.8
1992	800	1.2	80	0.2	18	0.1	1,158	0.9
1993	689	1.0	114	0.3	22	0.2	1,016	0.7
1994	770	1.2	111	0.3	31	0.2	1,191	0.9
1995	661	1.0	109	0.3	18	0.1	993	0.8
1996	499	0.9	96	0.3	31	0.3	765	0.6
1997	349	0.6	134	0.3	34	0.2	626	0.5
1998	397	0.8	140	0.3	27	0.1	644	0.5
1999	249	0.6	78	0.2	25	0.1	412	0.3
2000	127	0.4	50	0.1	36	0.2	251	0.2

**Rate of Hospital Days**

Year	CD4 = 0-200		CD4 = 201-499		CD4 = 500+		Total <sup>1</sup>	
	total	rate	total	rate	total	rate	total	rate
1990	3,247	6.7	339	1.0	63	0.7	5,090	4.3
1991	4,819	9.2	472	1.2	95	0.6	7,796	6.1
1992	6,182	9.6	495	1.3	102	0.7	8,694	6.4
1993	5,133	7.6	470	1.2	75	0.6	7,170	5.2
1994	4,925	7.5	473	1.2	91	0.7	7,396	5.3
1995	4,994	7.6	549	1.5	51	0.4	7,184	5.5
1996	3,299	5.7	433	1.2	181	1.6	4,743	4.0
1997	2,409	4.4	425	1.0	175	1.2	3,861	3.1
1998	2,742	5.4	461	0.9	176	0.9	3,896	2.9
1999	1,752	3.9	329	0.7	116	0.5	2,482	2.0
2000	821	2.4	115	0.2	97	0.4	1,307	1.2

<sup>1</sup> Total includes patients without a CD4 count.

# ASD Bibliography

(CDC-authored publications and abstracts are indicated by bold-faced type. Copies of these are available from the Surveillance Branch, Division of HIV/AIDS Prevention, Centers for Disease Control and Prevention, 1600 Clifton Rd., Mailstop E-47.)

## Peer-Reviewed Publications by Subject

### Adolescents

Fuller C, Clark R, Kissinger P, Abdalian S. Clinical manifestations of infection with human immunodeficiency virus among adolescents in Louisiana. *J Adolesc Health*. 1996;18:422-428.

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Diamond C, Buskin S. Continued risk behavior in HIV-infected youth. *Am J Epidemiol*. 1998;147:S61.

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### Cancer

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**Jones J, Hanson D, Dworkin M, Ward J, Jaffe H. Effect of antiretroviral therapy on recent trends in selected cancers among HIV-infected persons. *J Acquir Immune Defic Syndr*. 1999;21:S11-S17.**

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Rietmeijer C. The cost of acquired immunodeficiency syndrome and human immunodeficiency virus infection: the experience of a public hospital in the context of national forecasts. *Comprehensive Therapy*. 1993;19:174-176.

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Welch K, Morse A. Survival patterns among HIV+ individuals based on health care utilization. *J Natl Med Assoc.* 2001 June; 93:214-219.

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