ANALYSIS OF THE AIDS CASELOAD

The 940 AIDS patients represent 23.7 percent of all cases reported to the State of California during the same period for the same geographic areas. The incidence of AIDS within the Kaiser Permanence Northern California Region (KPNCR) increased from roughly 1.6 cases per 100,000 members before 1984 to 19.7 cases per 100,000 by June 1987 (table 4-l). This represents a 59-percent average annual increase in the number of new cases between 1984 and 1986, the period of time for which complete annual data were available. This rate of increase is expected to decrease within the next 5 years. (A further discussion of future AIDS cases is presented later in this section).

By Facility

Nearly half of all AIDS patients (426/940) were diagnosed at the San Francisco facility; Oakland ranks second in AIDS caseload (table 4-2).

By Age and Sex

KPNCR AIDS patients are somewhat older than other AIDS patients from the same geographic area (table 4-3). Mean age at diagnosis for KPNCR cases was 40.0 years as compared to 38.1 years for cases reported to the State. Within KPNCR, 98.6 percent of AIDS patients were male, a proportion almost identical to that for AIDS patients in the local general population.

By Diagnosis

Pneumocyslis carinii pneumonia (PCP) was the presenting diagnosis in 63 percent of the AIDS patients (588/940), while 15 percent of the AIDS patients (143/940) were initially diagnosed with Kaposi's sarcoma (KS) (table 4-4). Other reports suggest that a higher percentage of AIDS patients in both the San Francisco area (13) and elsewhere (14) present initially with KS. This difference may be related to how the Kaiser AIDS patients were initially identified; many of the cases were found in the hospital discharge files. Because

Table 4-1--- Incidence of AIDS 1981-June 1987

	1981-1983	1984	1985	1986	Jan. - June 1987	Total
Mu'her of cases diagnosed	85	118	210	300	200	913[a]
Incidence (per 100, OOOtirs)	1.6	6.2	10.7	15.0	19.7	

[a]Twenty-seven of 940 cases were excluded due to unavai lable date of diagnosis.

SOURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

KS, by itself, is seldom a reason for hospitalization, some AIDS patients may have been identified by their first inpatient diagnosis despite an earlier outpatient diagnosis of KS.

Hospital Utilization

The cost of AIDS care is largely a function of total inpatient days. The 913 AIDS patients[5] (39 percent were still alive in June 1987) were hospitalized a total of 1,994 times and stayed 23,697 days in total. Mean length of stay per hospitalization was 11.9 days overall. The average number of hospitalizations was 2.2, and the average number of hospital days per patient was 26.0. For AIDS patients who were still alive, total lifetime hospitalizations will ultimately be higher. Among AIDS patients who had died, there were 2.6 hospitalizations and 33.4 hospital days per patient. However, AIDS patients who had already died are not representative

5 Twenty-seven of the 940 caaes were excluded becauee the date of diagnosia was not available.

Table 4-2--- Number of AIDS Patients by Facility of Diagnosis
1981-June 1987

Facility	Number	Percent of Total[a]
San Franciaco.	426	46.3%
Oakland	170	18.1
Santa Clara	81	8.6
San Jose.	39	4.1
Sacramento	37	3.9
Vallejo.....	33	3.5
Hayward	31	3.3
San Rafael	29	3.1
Redwood City.	26	2.8
Walnut Creek	2s	2.7
So. San Franciaco..	23	2.4
So. Sacramento	11	1.2
Martinez	5	05
Richmond	4	0.4
Total	940	100.0%

percentages may not total 100 due to rounding.

SOURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

Table 4-3--- Distribution of Age at Diagnosis: KPNCR and General Population[a]
1981-June 1987

Age at diagnosis	KPNCR Number	KPNCR Percent[b]	General Population Number	General Population Percent[b]
Leaa than 14 yeara.	1	0.1%	3	0.1%
16-29 yearn	129	14.1	582	14.5
30-39 yeara.	366	40.1	1,985	49.5
40-49 yearn	270	29.6	993	24.8
50-59 years	110	12.0	343	8.6
60 years and over.	37	4.1	102	2.5
Total	913[c]	100%	4,008	100%

[a] Data are for a geographic area comparable to KPNCR'O service area and include KPNCR cases.
[b] Percentage may not total 100 due to rounding.
[c] Twenty-seven of 940 cases are excluded because the date of diagnosis waa unavailable.

SOURCE: Kaiser Perrnanente (Northern California Region), unpublished data, Oakland, CA, 1988.

of all AIDS patients in that they over-represent those who die soon after diagnosis. Thus, these results are underestimates of total lifetime hospitalizations for the average AIDS case.

Lifetable methods were used to obtain unbiased estimates of total lifetime hospitalizations and hospital days for all 913 cases (see Methods section above). These methods draw upon information for all 913 AIDS patients, living and dead, to estimate the distributions of lifetime hospitalizations and hospital days. This approach yielded a lifetime mean of 3.5 hospitalizations (+ 0.15) and a lifetime mean of 39.3 (+ 1.27) hospital days per case (table 4-5). Corresponding medians were 3.0 and 32, respectively. Patients whose initial diagnosis was PCP were hospitalized for longer periods than were KS patients; the mean length of hospitalization was 12.0 v. 10.6 days.

Table 4-4---Initial Diagnosis for AIDS Patients[a]

	Number	Percent[b]
PCP	588	62 .6%
KS	143	15.2
Other AIDS- related infect ion.....	104	11.1
Other AIDS-related neoplasm	45	4.8
Other/unspecified AIDS-related diagnosis	60	6.4
Total	940	1 00%

[a]First diagnosis appearing in any KPNCR database.
[b]Percentages may not total 100 due to rounding.

SOURCE: Kaiser Permanence (Northern Cal ifornia Region), unpublished data, Oakland, CA, 1988.

Table 4-5---Estimated Lifetime Hospital Utilization by Initiai Diagnosis in 913 AIDS Patients[atb]

Diagnosis	N r	Median	25th-75th percentile	Mean	Standard error
Hospi ta 1 i zat i orw					
PAP	588	3	2-4	3.4	0.19
KS. n	143	3	1-4	3.1	0.26
Other	182	3	1“5	4.3	0.46
Total	913	3	1-4	3.5	0.15
Hospital days					
PCP	588	32	18-56	41.0	1.64
KS.	143	28	15-47	33.0	2.64
Other	182	32	17-60	38.4	2.73
Total	913	32	17-53	39.3	1.27

[a]Lifetable estimates are for the interval from diagnosis until death.
[b]luenty-seven of 940 cases uere excluded due to wavailable date of diagnosis.

SOURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

COST OF CARE

The preceding section presented hospital utilization data for 913 AIDS patients from their date of diagnosis through June 1987. The following cost analysis examines a sample of 30 of these patients. Their mean and median lifetime utilization and costs were estimated using survival methods.

Characteristics of the 30-Patient Sample

The sample of 30 AIDS patients was selected randomly from the 596 AIDS patients (63.4 percent) who had received care in the Kaiser Permanence San Francisco or Oakland hospitals (table 4-2).[6] Each patient's medical records were reviewed thoroughly and their total utilization of Kaiser services, beginning one year prior to AIDS diagnosis, was re - corded to derive costs for inpatient care, outpatient care, tests and procedures, and pharmacy prescriptions.

The 30 AIDS patients were representative of KPNCR'S population of 940 AIDS patients in the proportion still alive and in the health plan (43.3 percent v. 38.5 percent), and in total hospitalizations and hospital days (table 4-6). All 30 patients were men. Mean age at diagnosis was 37.6 years (range 24.7 to 54.6 years). Fourteen of these patients had an initial diagnosis of PCP (47 percent), eight had KS (27 percent) and another eight (27 percent) presented initially with other AIDS-related diagnoses.

A higher proportion of the sample was initially diagnosed with KS (27 percent) than the total group of 940 cases (15 percent). As mentioned above, many of the 940 patients were given the diagnosis associated with their first hospitalization. This practice probably misclassified some patients with the initial diagnosis of KS into other categories. The estimated mean survival time from diagnosis to death for the sample cases was 15.1

6 **The sample was also restricted to patients diagnosed since Jan. 1, 1984, in order to reflect more recent utilisation pattema while ah allowing enough time for the dinea8e to run its course.**

Table 4-6--- Estimated Lifetime Hospital Utilization by Initial Diagnosis for the Sample of 30 AIDS Patients[a]

Diagnosis	Number	Median	25th -7Sth percentile	Mean	Standard error
Hospitalizations					
PCP	14	3	1-5	3.1	0.6
KS	8	3	2.3	2.6	0.3
Other	8	4	2-6	4.2	0.9
Total	30	3	2-5	3.3	0.4
Hospital days					
PCP	14	37	20-67	41.4	8.6
KS	8	27	23-30	26.2	1.9
Other	8	30	23-47	33.0	6.2
Total	30	30	22-48	37.1	5.2

[a]Lifetable estimates are for the interval from diagnosis mti 1 death.

SOURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1968.

months. Patients with an initial diagnosis of KS had an estimated mean survival of 19.1 months compared to 9.8 months for those with any other initial diagnosis.

Table 4-7 provides selected outpatient and hospital statistics for the sample of 30 AIDS patients.

costs

Lifetime cost estimates for the sample of 30 AIDS patients are summarized in table 4-8.[7] Because the application of survival methods to cost data may be unfamiliar to the reader, the key terms in the calculation of lifetime means and medians are presented in detail. The first column presents the total cost for each case in order of ascending cost and the second column indicates whether the corresponding cost is a final lifetime cost for a case who has died, or whether it is a total as of June 30, 1987, for a case who was then still alive and in the health plan. The third column, assigns a rank (j) to the 17 cases whose total costs are final lifetime totals. For each of these ranked cost levels, the fourth column indicates the number of patients who attained higher cost levels divided by the number who reached that level. (This column estimates the conditional probability of surviving to cost more than the jth level, given attainment of that level.)

The fifth column results from multiplying the proportion in the fourth column by all the other proportions in the fourth column that are higher in the table. This product is an estimate of the proportion of all cases who would survive past cost level j and go on to attain higher cost levels, assuming they were all observed until death. The estimate of median lifetime cost is $29,929, the cost level corresponding to the highest proportion in column 5 that is less than or equal to 0.50.

A plot of the column 5 proportions against the corresponding column 1 cost levels is known as a "survival curve." The sixth and seventh columns estimate the mean lifetime cost of AIDS care by calculating the area beneath this survival curve. The $35,054 at the bottom of the last column is the area beneath the survival curve and an estimate of mean lifetime cost. The standard error for this mean is $4,245. The median cost was somewhat lower at $29,929, suggesting that the distribution of costs was skewed toward the higher amounts (i.e., that a few patients with very high costs increased the mean).

Estimates of median and mean lifetime costs by service category are presented in table 4-9. The use of inpatient services by AIDS patients was about three times as much

[7] All cost data were measured in actual dollars.

Table 4-7--- Estimated Lifetime Utilization by Service Category for the Sample of 30 AIDS Patients[a]

Service	Median	25th-75th percentile	Mean	Standard error
Outpatient				
Clinic visits	14	17-W	47.3	8.0
Prescript ions	29	10"54	29.4	4.2
Lab/procedures	69	24-121	69.1	8.6
HoSDi taL				
Hospital i zat ions	3	2-5	3.3	0.4
Hospital days.	30	22-48	37.1	5.2
Lab/procedures	102	82-210	149.7	24.1

[a] Li fetable estimates are for the interval from diagnosis mti 1 death.

SUJRCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

Table 4-8. --Calculation of Product-Limit Estimates of the Distribution of Lifetime Costs of Care for AIDS: Sample of 30 AIDS Patients

(1) cost	(2) Alive & in plan	(3) Rank j	(4) Cases surviving j/cases surviving to j	(5) Estimated past proportion of al 1 cases *o survive past j	(6) Cost at j minus cost at j-1	(7) Area under survival curve to j
0			30/30	1.00		
S 2,549	Yes	..	..	..	..	..
s 3,154	Yes	..	..	..	..	..
$5,036	Yes	.-	..	..	..	..
$6,649	Yes	.-	..	..	..	..
$8,281	Yes	..	..	..	..	..
S 8,5~	Yes	..	..	..	..	..
$12,208	Yes	..	..	.-	..	..
$14,424	Yes	..	..	..	..	
$15,877	No	1	21/22	0.95	%15 ,877	%15 , 8~
$16,016	Yes	..	..	..	..	..
$16,129	No	2	19/20	0.91	$ 252	$16,118
S16, 607	No	3	..	0.86	$ 477	S16, 551
$18,623	No	4	17/18	0.81	$ 2,016	$18,283
$19,564	Yes	..	..	..	..	..
$23,164	No	5	15/16	0.76	$4,541	$21,968
$23,419	Yes	..	..	.-	..	.-
S27, 097	Yes	..	..	..	..	..
S28, 660	No	6	12/13	0.70	s 5,495	S26, 148
$28,861	No	7	1 1/12	0.64	s 202	S26, 289
S29, 735	No	8	10/1 1	0.59	s 873	S26,851
$29,898	No	9	9/1 o	0.53	s 163	S26, 947
S29, 929	No	10	8/9	0.47	s 31	$26,964
S29, W3	No	11	7/8	0.41	$ 6 4	S26, W3
$33,343	No	12	6/7	0.35	s 3,349	S28, 365
$33,749	No	13	5/6	0.29	s 406	S28, 508
S34 ,338	No	14	4/5	0.23	s 588	S28, 680
S36, 475	No	15	3/4	0.18	S 2,138	S29, 180
S58 ,386	No	16	2/3	0.12	$21,911	S33 ,027
S60, 728	Yes	..	..	..	..	..
$75,711	No	17	0/1	0.00	S1 7,325	$35,054

SCURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

Table 4-9--- Estimated Lifetime Costs of AIDS for the Sample of 30 AIDS Patients[a]

Service	Median	25th-75th percentile	Mean	Standard error
Outpatient				
Clinic visits	S 3,311	S 1,722-S 5,557	S 4,025	S 780
Prescriptions	S 1,326	s 195-S12,919	S 5,218	S1,216
Lab/procedures	S 1,113	S 674-S 2,351	S 1,226	s 174
Hospital				
Hospitalizations	S14,430	S 9,881-S22,607	S719,223	S2,W1
Pharmacy	S 3,796	S 2,594-S 6,073	$ 4,635	s 669
Lab/procedures	S 3,547	s 2,279-s 4,640	% 3,432	$ 403
All services	S29,929	S28,660-S34,338	s 35,054	S4,245

[a]Lifetable estimates are for the interval from diagnosis until death.

SWRCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

as outpatient services. For outpatient pharmacy, the mean costs substantially exceeded the median because a few longer lived patients accumulated high costs from AZT use. (The wholesale cost of AZT was $9,825 per year. AZT patients also incur extensive laboratory work.) Laboratory tests were frequently performed, but along with less common procedures (e.g., bronchoscopy, lumbar puncture), were not a major cost factor.

Patients with a primary diagnosis of PCP had higher mean lifetime costs (table 4-10) than those with other presenting diagnoses, due largely to their greater hospital utilization (table 4-7). Outpatient costs were lower for PCP (mean = $4,589 + 740) than for KS (mean = $6,376 + 1,355) or other diagnoses (mean= $7,546t 1929). Given the small size of the three diagnostic subgroups, the differences between the subgroups are suggestive, but not statistically significant.

Annual costs per patient were calculated for three time periods--1984-85, 1986, and the first half of 1987--to look for trends in the costs of AIDS care. Total costs and hospital costs changed little from the first to the second period, but fell 20 percent and 36 percent respectively in 1987. The drop in hospital costs may be attributable to the establishment, in March 1986, of an outpatient unit (known as the Infusion Center) at Kaiser Permanence's San Francisco hospital.[8]

In contrast, annual outpatient pharmacy costs climbed markedly from $386 per person during 1984-85 to $2,423 in 1986 and $4,477 in 1987. This reflects the introduction of AZT as an outpatient treatment for AIDS during 1986. As noted earlier, the wholesale cost of AZT was $9,825 per year.

Total costs per AIDS patient for a single year of care averaged $25,119 from 1984 through June, 1987. The product of the annual costs per case ($25,119) and the number alive at mid 1987 (346) gives an estimate of the total cost of care for all AIDS patients in 1987 ($8,691,174). Furthermore, if the incidence of AIDS and survival time increased during this time, the use of the number of cases alive at the midpoint of the year underestimates the average number alive during the year. This could also lead to an underestimate of total costs.

8 **The Infusion Center provides intravenous (IV) medication to patients who would otherwise need to be hospitalized. Ninety-five percent of its users are AIDS patients. Two registered nureea are dedicated to operating the Infusion Center 5 days a week. An average of16 AIDS patients are treated in the Infusion Center daily. In its firet 18 months of operation this center saved an estimated 3,500 inpatient days.**

Table 4-10--- Estimated Lifetime Costs by Initial AIDS-Related Diagnosis for the Sample of30 AIDS Patients[a]

Diagnosis	Nuher	Median	25th-75th percentile	Mean	Standard error
PAP.	14	$33,343	$23,164-S58,386	S39,785	$7,166
KS..	8	$29,~5	$28,861-$29,W3	S27,348	$2,268
Other	8	S34,338	$29,929-S36,475	S30,186	S3,796
Total	30	S29,929	S28,660-S34,338	S35,054	S4,245

[a]Lifetable estimates are for the interval from diagnosis until death.

SCURCE: Kaiser Permanence (Northern California Region), unpublished data, OakLand, CA, 1988.

Because there is no systematic way to identify Kaiser members who have been diagnosed with AIDS-related complex (ARC) or are HIV seropositive, it is not possible to estimate their costs of care. ARC cases are frequently not documented as such in any of the computerized databases and the identity of members who are HIV seropositive are protected by State confidentiality requirements. California law also prohibits mandatory testing. Clearly, these patients also contribute to KPNCR AIDS-related costs.

Impact on 1988 Rates

Limitations in KPNCR'S cost accounting and data systems make it difficult to precisely measure the overall impact of AIDS-related care on the 1988 basic rate. The ratesetting forecast for 1988 includes 14,120 patient days related to AIDS or ARC. This represents 2.0 percent of the total adult and pediatric patient day forecast, or more than $8.6 million.[9] Given the relationship of AIDS inpatient costs to other services (e.g., outpatient visits and ancillary services) that were outlined above, the impact of AIDS/ARC on the basic rate is in excess of $0.55 per member per month, exclusive of the cost of AZT. $0.55 per member per month represents approximately 0.8 percent of KPNCR'S non-Medicare dues rate for 1988. Given the current emphasis by employers and the Federal government on health care cost containment, virtually all rate increases will have a significant impact on KPNCR'S ability to attract and retain members.

The impact on the outpatient pharmacy supplemental benefit rates was calculated based on estimates of the utilization of AZT with in the member population and across drug plans. AZT coverage in the outpatient pharmacy benefit added $0.17 per member per month to the loading for the pharmacy benefit. In addition, it was assumed that providing AZT to patients who are without supplemental drug plans and unable to make full payment would result in an approximately $500,000 to $700,000 revenue shortfall. This revenue shortfall was added to the basic rate.

It is theoretically possible to continue adding to the basic rate to cover increases in AIDS costs, but employers have expressed great reluctance to pay for AIDS-related care through their premiums and are demanding experience-based rates that reflect only the costs of their own employees. At present, HMO Federal qualification prohibits experience-rating.[10] Eighty-eight percent of the total membership is affiliated with employer groups.

Forecast of AIDS Cases and costs

Table 4-11 presents the numbers of incident AIDS cases within KPNCR for 1981-1986 and projects incidence for 1987 through

9 Note that the $8.6 million is the 1988 projected coat for inpatient services only and is a significant increase from the eatimated 1987 inpatient cost of $S.7 million. These costs are consistent with those estimated using survival anaylsis methods (see Methoda section above).

10 Federal legislation to modify this requirement is currently under consideration.

Table 4-11.--New Cases of AIDS From 1981-1990

Year	Nunber of neu cases	Percentage increase i n cases
1981 -1983	85	
1984	118	
1985	210	1.78
1986.	300	1.43
1987 (est.)....	429	1.39
1988 (est.)....	582	1.35
1989 (est.)....	757	1.30
1990 (est.)... .	960	1.27

SOURCE: Kaiser Permanence (Northern California Region), unpublished data, Oakland, CA, 1988.

1990. Estimates for 1987 through 1990 assume the annual percentage increase in cases projected for California by the Centers for Disease Control (CDC) using the model presented at the Coolfont Conference in June 1986 (see appendix C). A total of 2,501 new AIDS cases are forecast for July 1987 through 1990.

Assuming mean lifetime costs of $35,054, the costs for providing care to these patients will be $87.7 million. This estimate does not consider inflation, additional costs incurred as life-extending therapies are developed, costs of care for infected patients who do not yet fulfill the diagnostic criteria for AIDS (i.e., patients with ARC or HIV seropositivity), or changes in the cost of care resulting from new alternative health care arrangements.

Comparison With Other Cost Studies

The mean lifetime cost of $35,054 differs from other published estimates. In one study, lifetime inpatient charges were estimated to be $27,571 for 85 patients who died at San Francisco General Hospital in 1984 (15). Another report cited medical costs of $46,505 per year for 45 patients in Massachusetts studied in 1984-85 (14). Other estimates have suggested that individual costs may be as high as $147,000 based only on hospital charges (4). In comparing these disparate estimates, several factors deserve attention:

1) the number of hospital days per patient,
2) the per diem cost of a hospital day,
3) whether ambulatory services are included,
4) the calendar year during which care was delivered, and
5) the statistical methods used to derive estimates.

The number of hospital days for an AIDS patient is the largest single contributor to costs. The estimate of 37.1 mean lifetime hospital days in the sample of 30 AIDS patients (39.3 days among all KPNCR AIDS patients) is somewhat higher than that of Scitovsky et al., who reported a mean of 34.7 days per patient at San Francisco General Hospital. However, Scitovsky et al. studied only persons who had died. Using this approach, the Kaiser mean lifetime hospital days were 33.4 days per patient.

Seage et al. estimated a mean of 61,7 lifetime hospital days per patient in Massachusetts, 66 percent more than in this study. In general, data from the Northeast suggest significantly longer hospital stays per patient than San Francisco-based studies (2). This could be due to differences in the casem ix between regions. For example, a higher proportion of intravenous drug users are generally reported in the Northeast (2). Such patients are more likely to present with opportunistic infections other than with KS, a factor clearly related to increased hospital days in these data and those of others. Moreover, these patients may have less extensive personal support networks to provide alternatives to hospitalization. In New York City, about 15 percent of the AIDS patients hospitalized in municipal hospitals are homeless (3). The San Francisco Bay area may also provide more community support services than other areas (15).

The dollar value of an inpatient day also differs among these studies. Per diem, "fully loaded" medical-surgical costs in the two KPNCR hospitals studied were about $400 in 1986 dollars.[11] The San Francisco General Hospital's charges for a regular bed were $662 in 1984 dollars. Charges in the Massachusetts study were also approximately $650 per day in 1984. (See the discussion of unit cost calculation in the Methods section.)

11 **The $400 includea overhead costs such ae: capital related costs, employee benefits, administrative and general, maintenance and repairs, operation of plant, linen and laundry, housekeeping, dietary, cafeteria, nuraing administration, central aupply, medical records, social semice, health plan administration, and residents' salaries and benefits, Pharmacy costs, usually a part of the allocation process, are specifically excluded and treated aa a separate coat area.**

Ambulatory as well as inpatient utilization has been included in this study in contrast with the analyses of Scitovsky et al. and Hardy et al. Every effort was made to account for all provided services including psychiatric, hospice, and home health services, as well as "out-of-area" services furnished by non-Kaiser providers.

It is not surprising that costs may differ year to year. For example, the introduction of new medication (i. e., AZT and pentamidine) increased pharmacy costs dramatically. In contrast, hospital as well as total costs decreased in 1987, perhaps due to the opening of the Infusion Center at the San Francisco hospital in May of 1986. In its first 18 months of operation, the Infusion Center saved an estimated 3,500 inpatient days.

The use of survival analysis methods in this analysis contrasts with studies that estimate lifetime costs or utilization based only on persons who have expired. The lifetable method appropriately yielded higher cost estimates.

Finally, to be consistent with other analyses, the mean and median lifetime estimates of utilization and cost in this report extend from the date of diagnosis until death. From the date of the first AIDS symptom recorded in the medical chart (instead of diagnosis) until death, the estimated mean cost of care for AIDS patients is $37,897 and the estimated median cost is $31,796 compared to estimated mean costs of $35,054 and estimated median costs of $29,929 from time of diagnosis until death.