

1. SUMMARY

The Kaiser Permanence Northern California Region (KPNCR) serves a total membership of more than 2 million people, 25 percent of the area's population, and is second only to the county health system as a provider of care to AIDS patients in San Francisco.

From 1981 through June 1987, a total of 940 KPNCR patients were diagnosed with AIDS. *Pneumocystis carinii* pneumonia (PCP) was the presenting diagnosis in 63 percent of the AIDS patients, while 15 percent were initially diagnosed with Kaposi's sarcoma (KS). These 940 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 KPNCR increased from roughly 1.6 cases per 100,000 members before 1984 to 19.7 cases per 100,000 by June 1987. 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, but not significantly, within the next 5 years.

Information on the cost of AIDS care was available for 913 of the 940 patients. Twenty-seven of the 940 cases were excluded because the date of diagnosis was not available. The 913 AIDS patients (39 percent were still alive in June 1987) were hospitalized a total of 1,994 times and stayed 23,697 days in total.

Lifetable methods were used to obtain unbiased estimates of total lifetime hospitalizations and hospital days for all 913 cases. This approach yielded a lifetime mean of 3.5 hospitalizations (+ O. 15) and a lifetime mean of 39.3 (+ 1.27) hospital days per case. Corresponding medians were 3.0 and 32, respec-

tively. Patients whose initial diagnosis was PCP were hospitalized for longer periods than were KS patients; the mean length of hospitalization was 12.0 versus 10.6 days.

A sample of 30 AIDS patients was selected randomly from the 596 AIDS patients who had received care in the Kaiser Permanence San Francisco or Oakland hospitals. Each patient's total utilization of Kaiser services was reviewed, beginning one year prior to AIDS diagnosis, to derive costs for inpatient care, outpatient care, tests and procedures, and pharmacy prescriptions.

The estimated mean cost from date of diagnosis to death was \$35,054 in actual dollars (standard error + \$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).

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) to provide intravenous (IV) medication to AIDS patients at Kaiser Permanence's San Francisco hospital. In its first 18 months of operation this center saved an estimated 3,500 inpatient days.

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 the

drug AZT as an outpatient treatment for AIDS during 1986.

Total costs per AIDS patient for one 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). 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.

Limitations in KPNC'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 AIDS-related complex (ARC). This represents 2.0 percent of the total adult and pediatric patient day forecast,

or more than \$8.6 million --a significant increase from the estimated 1987 inpatient cost of \$5.7 million.

Given the relationship of AIDS inpatient costs to other services (e.g., outpatient visits and ancillary services), 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.

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 human immunodeficiency virus seropositivity), or changes in the cost of care resulting from new alternative health care arrangements.