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## Research Grants Studies

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Sections 702 and 1110 of the Social Security Act authorize extramural research projects in the broad areas of social security. The Social Security Administration provides funding through grants to nonprofit organizations and through contracts with both nonprofit and profitmaking organizations. From time to time, as projects are completed, the *BULLETIN* publishes summaries of research findings. A summary of a completed project (Grant No. 57823) is presented below.

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### A Study of Medical Care Use Under Two Comprehensive Prepaid Plans

Two basic health plans are offered by Stanford University to its employees and their families. The Social Security Administration contracted with Anne A. Scitovsky of the Palo Alto Medical Research Foundation to study factors affecting the choice of one of the plans and use of physician, hospital, and ancillary services. Out-of-plan use of medical services also was to be studied. Working with Ms. Scitovsky, who is the chief of the Health Economics Division at the Foundation, were Nelda Snyder McCall (formerly senior research associate at the Foundation, now senior research economist, SRI International) and Lee Benham (associate professor, Department of Economics, Washington University, St. Louis).

#### Background

The two choices of a health plan for Stanford University employees were a Kaiser plan (offered since 1969) and the United Medical Clinics/Blue Cross plan (offered in various forms since the early 1950's). Under the later plan's provisions, all physician and outpatient ancillary services are provided by the Palo Alto Medical Clinic (a multispecialty, predominantly fee-for-service group practice of about 125 physicians) and hospital services are covered by a Blue Cross policy incorporated into the plan.

While the benefit provisions of the two plans are very similar—both offering comprehensive coverage of most medical services, including preventive care—the plans differ in their organizational structure and their financial provisions. The Kaiser system's central features are prepayment, closed-panel group practice and integrated facilities, including hospitals. Thus Kaiser physicians

have a financial interest in keeping costly care, especially hospital care, to a minimum. By contrast, Clinic physicians are not at risk for their prepaid patients' hospital costs and, because prepaid patients represent only a small fraction of their total patient population (revenues from all prepaid plans are only about 15 percent of the Clinic's total gross revenues), they are under little constraint to keep costs low.

Kaiser plan premiums were slightly lower than those of the Clinic plan at the time of the study. Of more significance are the copayment of only \$1.00 per physician office visit and \$3.50 per home visit under the Kaiser plan and the 25-percent coinsurance provision for all physician and outpatient ancillary services under the Clinic plan.

The Palo Alto Medical Clinic (PAMC) is located in central Palo Alto, about 3 miles from Stanford University. Three Kaiser facilities are in the greater Stanford University-Palo Alto area: a clinic connected with a hospital in both Redwood City and Santa Clara (about 8 and 13 miles, respectively, from the Stanford University-Palo Alto area) and a clinic in Sunnyvale (about 10 miles away) whose patients use the Santa Clara facility for hospital services. Stanford Kaiser plan members also have access to all other Kaiser facilities in northern California.

#### Study Population and Methodology

Members of the two plans who had been covered by them the full 12 months July 1973–June 1974 for whom data were available on both in-plan and out-of-plan use of medical services and who had answered a long household interview and three followup telephone interviews (these latter interviews had been given to get ongoing data on out-of-plan use of medical services) were chosen for the study population. This selection provided 926 Kaiser subscribers, or a total of 2,061 Kaiser members, and 890 Clinic subscribers, or a total of 2,139 Clinic members. For the study of the use of hospital services and of the use of ancillary services in ambulatory care, the population consists of all members of the two plans who were covered by them at any time between January 1972 and June 1974.

Data on in-plan use of medical services for all parts of the study were obtained from the members' medical records. For the larger of the two study populations, the only data obtained other than medical care use were age, sex, and family relationship of the members and occupation of the subscribers (obtained from their medical records and from Stanford University). For the smaller study population, in addition to this basic information, detailed data were obtained from a long household interview. Included were data on family income and education of the household head, other insurance coverage, length of plan membership, health attitudes and be-

havior, health status, reason for the choice of plan and against choosing the alternative plan, satisfaction with the plan, regular source of care, and out-of-plan use of medical services. For analysis of the data for all parts of the study, both cross tabulations and multivariate analysis (ordinary least squares) were used.

### Factors Affecting Choice

The two major factors affecting choice between the plans were income and distance from the plan member's home to the provider. A systematic relationship exists between family income and choice of plan, with the preference for the less expensive (both in terms of premium and of out-of-pocket expenses resulting from cost-sharing) Kaiser plan increasing as family income decreased.

The data also show that as distance between home and the PAMC increased and distance from the nearest Kaiser facility decreased, the preference for the Kaiser plan increased. Thus accessibility influenced the choice for both plan subscribers. It is apparent, however, that distance from the provider was a more important consideration for Clinic plan than for Kaiser plan subscribers: a substantial proportion of Kaiser plan families lived at least as close or closer to the PAMC than to the nearest Kaiser facility. In addition, in the household interviews, a substantially higher proportion of Clinic plan than of Kaiser plan subscribers gave proximity to the provider as an important reason for having chosen the plan.

Clinic plan subscribers also put more stress on other aspects of convenience (such as having all physician and medical records in one place) than did Kaiser plan subscribers. Time costs and general convenience thus appear to have been relatively more important for the higher-income-class Clinic plan subscribers, while dollar costs were of greater importance for the Kaiser plan subscribers.

The data also show that the longer availability of the Clinic plan had a long-term effect on enrollment. A substantial proportion of Clinic plan subscribers who had been employed at Stanford University before the Kaiser option became available and who, other things being equal, might have been expected to prefer the Kaiser plan stayed with the Clinic plan, probably because of established ties with their physician. Thus a new prepaid plan offered to a group already served for some time by another prepaid plan may have some difficulty attracting persons enrolled in the older plan, even when the new plan is financially more attractive.

It must be remembered, of course, that the group studied here to quite an extent consists of relatively well-to-do families who place a high value on convenience and personalized care and who, therefore, may be reluctant to spend time establishing ties with a new

group of physicians or to travel somewhat further to get care. This finding deserves further investigation and quantification.

### Use of Physician Services Under Two Prepaid Plans

The unadjusted physician utilization rates under the two plans were not significantly different: 3.59 physician visits per member per year for Kaiser members, 3.83 for Clinic members. When an adjustment was made for differences in all member characteristics except regular source of care (that is, differences in sex, age, marital status, length of plan membership, family income, presence of other insurance, health attitudes, satisfaction with the plans, and health status), the rates were not altered significantly. When an adjustment was also made for differences in regular source of care, however, the Kaiser rate became significantly higher (by .48 physician visits) than the Clinic rate. This is due to two factors:

1. Under both plans, members who used the plan but did not have a specific plan physician as regular source of care used significantly fewer physician services than members who had a personal plan physician. Kaiser members who did not have a specific plan physician used 1.39 fewer physician services per year than those with a personal physician, and Clinic members without a specific physician used 1.05 fewer services. Next to health status, the presence or absence of a personal physician had the greatest impact on the use of physician services.
2. A much smaller percentage of Kaiser members than Clinic members (42 percent, compared with 87 percent) reported that they had a specific plan physician as regular source of care.

The only other variables with a significant impact on the demand for physician services were health status and, to a considerably lesser extent, length of plan membership. Not surprisingly, the use of physician services increases as health status declines. For example, compared with Kaiser members who rated their health status as excellent, those rating it as good used .36 more visits, those rating it as fair used 4.11 more visits, and those rating it as poor had 17.32 more visits, when other factors were held constant. Length of plan membership was found to have a small but significant positive effect on the use of physician services when the data for the two plans were pooled but not when they were analyzed separately.

Most of the other variables had little or no impact on the use of physician services, either when the data for the two plans were pooled or when they were analyzed separately. Interestingly, for Clinic members no systematic relationship between family income and use of physician services was found. Considering the rather

substantial 25-percent coinsurance provision, it was expected that demand would decline as income declines.

The use of preventive services—routine physical examinations and gynecological examinations (pap smears)—was slightly higher under the Clinic plan than under the Kaiser plan. The data show that 37 percent of Clinic members and 26 percent of Kaiser members had one or more physical examinations in the 12-month period covered by this study, and that 47 percent of Clinic women and 34 percent of Kaiser plan women aged 17–64 had one or more gynecological examinations. As for all physician visits, the absence of a specific plan physician as regular source of care appeared to be an important determinant of these preventive services as well. When data for the two plans were pooled, for example, it was found that plan members using the plan but not having a specific physician as regular source of care had a 6-percent lower probability of having received a routine physical examination than those with a regular physician.

From previous studies of the Clinic plan it is known that the introduction of a 25-percent across-the-board coinsurance provision in 1967, applying to all physician services in and out of the hospital, led to a substantial reduction in the volume of physician visits. In 1968, the first full calendar year after the introduction of coinsurance, the mean number of physician visits per plan member was 24 percent below the 1966 pre-coinsurance rate. Moreover, a subsequent study showed that this decline was not a temporary effect that wore off with the passage of time: in 1972, Clinic members' physician utilization rate was the same as in 1968.

The study reported here suggests that in the case of the Kaiser plan, the use of physician services may have been held down (though to a somewhat lesser extent) by the relative lack of a close patient-physician relationship. Thus both plans appear to provide some restraints on the demand for physician services—the Clinic plan as a matter of deliberate policy through the coinsurance mechanism, the Kaiser plan indirectly in ways that cannot be fully explained but that may be the result of various member and/or plan characteristics not measured in the data.

## Future Research

The areas that remain to be addressed by the project are:

1. Use of hospital services under the two plans. Medical and surgical admission rates, average length of stay, and case mix will be compared for approximately 7,000 person years of coverage under each of the two plans.
2. Use of ancillary services in ambulatory care under the two plans. The study population for this part will

be the same as that for the hospital utilization comparison.

3. Out-of-plan use of medical services, by type of service, for a subgroup of about 2,000 members of each plan covered the full 12 months of July 1973–June 1974.

The major hypotheses to be tested are discussed below.

**Hospital utilization.** Because Kaiser physicians are more directly at risk for plan members' hospital expenses than are Clinic physicians, it can be hypothesized that Kaiser members will have lower medical and surgical admission rates. The number of hospital days per 1,000 person years of coverage may also be lower for Kaiser than Clinic members, although the difference may be less pronounced than that in admission rates if Kaiser members are hospitalized for more serious complaints only, requiring longer hospital stays.

**Outpatient ancillary services.** If Kaiser hospitalization rates are lower than Clinic rates, one possibility is that outpatient care is substituted for inpatient care and that more outpatient ancillary services are used under the Kaiser plan than under the Clinic plan. It is also possible, however, that the Kaiser system provides an incentive to curb not only costly hospital care but also costly care in general, including outpatient ancillary services, and that therefore the Kaiser rates may be lower than the Clinic rates.

The use of outpatient ancillary services will be studied in some detail. In addition to comparing the overall rates of use of such services, the relationship between physician characteristics and the use of these services will be explored to determine to what extent possible differences between the two plans are due to differences in physician characteristics (and possibly patient characteristics) on the one hand and to differences that may be attributed to the practice settings on the other. The data on physician characteristics include age and sex of the physician, medical school attended, field of specialty, and board certification.

**Out-of-plan use of medical services.** One possible hypothesis is that out-of-plan use of services is greater under the Clinic than under the Kaiser plan since the marginal cost of any given out-of-plan service used is lower for Clinic members (because of their 25-percent cost-sharing for covered services) than for Kaiser members. On the other hand, since Kaiser members have first-dollar coverage for most medical services, they may be able to afford regular out-of-plan use for some care and thus use more out-of-plan services than Clinic members. The study will distinguish between out-of-plan use of covered and noncovered services and

analyze the reasons given by plan members in the household interviews for having gone outside the plan for some of their medical care.

**Copies of the final report of this completed research project are in the Social Security Administration Library, 571 Altmeyer Building, 6401 Security Blvd., Baltimore, Md. 21235, and in the Library of the Office of Research and Statistics, Room 320-0, Universal North Building, 1875 Connecticut Ave., NW., Washington, D.C. 20009. Copies of the report may be obtained through interlibrary loan. (Also in these libraries are copies of more than 50 other project reports that have been completed since 1963. Most of these reports were listed in the May 1974 BULLETIN.)**

### **Program Operations**

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thirds of the overall reduction. Eight States together added 7,580 recipients to their rolls, but these increases were offset by the declines in the other States.

Total payments in July amounted to \$895.1 million—\$15.7 million above the June total. The average payment per recipient was about \$2 higher than it had been in June.

Since July 1977 the number of AFDC recipients dropped by 526,270 and 81,900 fewer families were being helped. In the unemployed-father program, the number of persons aided was down 107,800. Nevertheless, total payments were \$5.7 million higher and the average payment was up \$4.62.

Most States operate on a July 1–June 30 fiscal year cycle, and cost-of-living increases in monthly payments generally become effective as the fiscal year starts. In July 1978, both higher AFDC payment standards and higher maximums payable to family units went into effect in 23 States; higher family maximums were also effective in two other States. Not all States that raised these items raised the *need* standard. (That standard is the amount determined by the State as needed to cover minimum necessities—usually the amount against which income is measured in fixing payment levels.) For those 25 States, the higher maximums affected the average family payment in July. The increase amounted to \$4–10 in 5 States, \$10–20 in 11, \$20–30 in six, \$36 in one, and \$58 in one. South Carolina's \$7 increase was paid retroactively in August 1978.

**Emergency assistance.** The number of families receiving aid under the emergency assistance programs—which provide temporary assistance for critical needs to AFDC families and other needy families with children—declined 41 percent from the June total, which had included about 19,400 more families. The June figure was unusually high because of

the 11,000 retroactive New York City cases. Without these cases the decline would have been only 23 percent. Ten of the States that furnish such assistance reported increases in the number of families helped and eight reported declines. Connecticut suspended its program in July, reducing the number of States with these programs to 22.

July payments totaled \$5.4 million—\$6.5 million or 55 percent less than the total in the preceding month. June's payments had reflected the New York City costs of \$3.8 million for July 1977–May 1978 claims.

**General assistance.** The State and locally financed general assistance programs aided 774,300 persons in July—19,100 or 2 percent fewer than the number assisted in June. Eleven of the 42 States reporting showed rises in the number of recipients that together totaled 4,100. These increases were more than offset by the substantial declines in three other States. West Virginia's drop of 7,270 reflected June's addition of 7,200 recipients to the rolls. Nationwide, payments totaled \$98.9 million. The June total had been \$2.0 million higher. The average payment per recipient was up 55 cents to \$127.68.

### **Medicare Benefits**

Withdrawals from the hospital insurance (HI) trust fund for payments to hospitals, skilled-nursing facilities, and home health agencies providing services to beneficiaries totaled \$1.4 billion in September 1978. Supplementary medical insurance (SMI) benefits amounted to \$610 million. Cumulative withdrawals from the hospital and medical insurance trust funds for fiscal year 1978 were \$17.4 billion and \$6.9 billion, respectively.

As of September 30, 1978, Social Security Administration records indicate that 6.0 million bills were approved and \$8.3 billion were reimbursed under HI from January through June 1978. Approximately 89 percent of the total amount reimbursed during this 6-month period was for the population aged 65 and over, and 11 percent was for the disabled.

The average amount reimbursed for all ages was \$1,613 per inpatient hospital bill (all hospitals), \$166 per home health bill, and \$572 per skilled-nursing facility bill. These amounts reflect increases of 8.6 percent per inpatient hospital bill, 3.8 percent per home health bill, and 6.7 percent per skilled-nursing facility bill, from the average amounts reimbursed during calendar year 1977.

Short-stay hospital bills account for 81 percent of all bills approved and 95 percent of total reimbursements. Hospital charges were \$215 per day for the aged and \$232 per day for disabled beneficiaries. Covered days of

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