What happens to aged welfare recipients who receive health care through prepayment group practice as compared with those who do not? The following report analyzes the experience of New York City welfare clients enrolled with seven HIP groups and of those receiving care from other sources. Changes in patterns of use and in mortality rates were noted. Other aspects are discussed including the relationship to the Medicaid program in New York.

PATTERNS OF MEDICAL USE BY THE INDIGENT AGED UNDER TWO SYSTEMS OF MEDICAL CARE

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THE HIP-Welfare Demonstration Project is one of a number of experiments the Department of Welfare has undertaken in recent years in an effort to improve the quality of medical care for the indigent and, in particular, to provide greater continuity of care.[1,2] At the time these experiments were begun, the welfare recipient went for his care to outpatient departments of local hospitals. Typically, he was seen by a physician who was contributing his services to the clinic or by a physician in training, and no one physician had continuing responsibility for the care of the patient. House calls were obtained from physicians on a panel maintained by welfare and as a rule these physicians were unfamiliar with the patient's clinic record. If the patient was hospitalized, a third set of physicians, the house staff at voluntary and municipal hospitals, became responsible. Welfare clients in nursing homes received medical care from panel physicians. It was common for a nursing home patient to be seen by several physicians, no one of whom could be considered the patient's regular doctor. Laboratory tests and x-rays were rarely made and medical charts were of the most rudimentary nature.

In September, 1962, the Department of Welfare enrolled about 13,000 recipients of public assistance in seven of the medical groups affiliated with HIP in the largest of its experimental efforts to bring welfare clients into the mainstream of medical care. Twelve thousand of the new enrollees were receiving Old Age Assistance (OAA) and living in their own homes. They represented about 38 per cent of the OAA caseload in the city at the time. The other new enrollees were patients in proprietary nursing homes, and made up about 30 per cent of the welfare clients in such homes.

Patients enrolled in HIP are entitled to care by family physicians and by specialists associated with the participating medical groups. They obtain service at the doctors' offices, which are usually in the group centers, in their own homes, in nursing homes and, in general, in hospitals. However, welfare regulations required that hospital admissions of welfare clients enrolled in HIP be made to general service ward ac-

commodations. (This was also the policy for clients not enrolled in HIP.) Accordingly, HIP physicians did not have responsibility for the welfare patient's care in the hospital.

In view of the nation-wide concern with the problem of delivering medical care to the aged, it was important to learn as much as possible from the demonstration program. A plan for city-wide research was accordingly developed jointly by representatives of HIP and of the New York City Department of Health and Department of Welfare.

This presentation examines the relationship between HIP's assumption of responsibility for out-of-hospital care and changes in patterns of use of medical care and mortality rates.[3] The year starting March 1, 1963, or six months after the demonstration project itself started, was selected for study because the early months of the project were a period of adjustment for everyone concerned.

Comparisons are based on the medical and hospital care experience of 30 per cent samples of the OAA's in HIP and of the OAA's not so enrolled; 50 per cent samples were used for nursing home patients. The experience among those who were on the rolls of the Department of Welfare on March 1, 1963, was followed for a year (March, 1963 through February, 1964). Welfare records on payments for medical services and goods and hospital care and HIP records on care provided are the sources of information for measures of use.

Ambulatory OAA Recipients

The first set of findings to be discussed concerns the OAA recipients who were not in nursing homes. For short hand, reference will be made to "HIP-OAA's" and to "non-HIP-OAA's." These two groups were very similar in all but one of the social characteristics examined. In both groups over two-thirds were women; the average age was 76 years; two-thirds of the men and nearly three-quarters of the women lived alone; about three-fifths had been continuously on welfare over five years. The two groups differed, however, in place of birth. About 40 per cent in both groups were born in the United States but among the HIP-OAA's a far greater proportion were from Puerto Rico or Latin America (22 per cent versus 8 per cent), and a smaller proportion from Eastern Europe (13 per cent versus 22 per cent) than among the non-HIP-OAA's.

In the year before the demonstration program, both groups of ambulatory OAA's had used physicians at about the same rate. A lower proportion of the HIP-OAA's had not seen a physician at all during the earlier year (37 per cent versus 45 per cent); another difference was that the HIP-OAA's had a somewhat lower hospital utilization rate.

In the year under study, physician visit rates were almost identical among the HIP and non-HIP-OAA's (5.3 per person per year in HIP versus 5.4 among the others); and hospital utilization rates were consistent with the difference found earlier (6.0 days of care per person per year in HIP versus 6.9 days among the others) (Figure 1). Here is where the similarity ends; the more important dissimilarities, several of which appear to be clearly related to the shift to HIP, are cited below.

1. The proportion of HIP-OAA's who received *no* ambulatory care during the study year went down from 37 per cent to 30 per cent; the corresponding proportion in the non-HIP group remained unchanged at 45 per cent.

2. There was a major change in where the patient saw the physician. In HIP, 81 per cent of the visits were to the doctor's office, usually in the medical group center; the other 19 per cent were home visits; outside of HIP a majority (58 per cent) of the doctor contacts were home visits. This change is

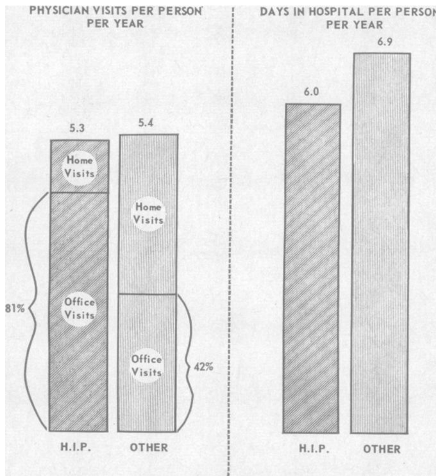


Figure 1—Rates of physician visits and hospital use, study year March, 1963-February, 1964, Old Age Assistance recipients

no accident. Special measures were taken by the participating medical groups in HIP to increase the understanding of the OAA's about the desirability of their obtaining medical care to a maximum extent at the group centers where laboratory tests, x-rays, and immunizations could be carried out. Medical groups arranged for car transportation to facilitate this process for persons with impaired mobility. Nevertheless, because of the advanced age of the OAA's, many home calls had to be made. In fact, 27 per cent of the HIP-OAA's had at least one home visit (33 per cent for non-HIP), and on the average there was one home visit per person per year as compared with about three home visits per non-HIP-OAA.

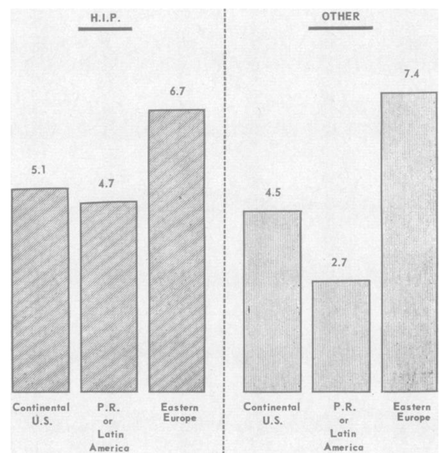
3. Patients who tended to get the least ambulatory medical care were likely to get more service when they were enrolled in HIP than they otherwise did. For instance, Puerto Ricans, who are relatively low utilizers, saw doctors more often if they were enrolled in HIP than if they were not (4.7 visits per person per year for HIP-OAA's versus 2.7 for non-HIP-OAA's) (Figure 2). Also, the frequency of doctor visits among those who were low utilizers in the predemonstration year was raised substantially among HIP-OAA's but remained very low among non-HIP-OAA's (Figure 3).

4. On the other hand, patients who in the predemonstration period used many physician services later continued to obtain large volumes of care but they averaged fewer doctor visits in HIP than under the traditional system.

5. Finally, HIP-OAA's were more likely than the non-HIP-OAA's to receive such ancillary services and supplies as podiatry, optical and dental supplies, medical and surgical appliances, and costs for transportation to and from a medical facility. Part of the reason for this is that a higher proportion of the HIP-OAA's saw a doctor during the year. Also, participating medical groups had specially trained personnel working with welfare recipients who helped them obtain these services.

What do the changes in the pattern of use of medical care mean for the health of the OAA's? This critical question cannot be answered definitively by the research just completed. But there may be a clue in the mortality rates for the

Figure 2—Rates of physician visits by country of birth, study year March, 1963-February, 1964, Old Age Assistance recipients



NOTE: Rates are physician visits per person per year.

OAA's. Given the advanced age among the OAA's, it would be unrealistic to expect a large differential in this type of measure. However, there was speculation before the demonstration program started that in time there would be a small but significant improvement in mortality associated with the shift of medical care to HIP. In fact, this is borne out by the data. During the study year, the death rates among the HIP-OAA's and the non-HIP-OAA's were about the same: 7.8 per 100 and 7.9 per 100 respectively (Figure 4). In the next year and a half the rates were 11.7 and 13.3 for HIP and non-HIP-OAA's —a 14 per cent differential. All of these rates take into account differences between the two groups in age, sex, and country of origin.

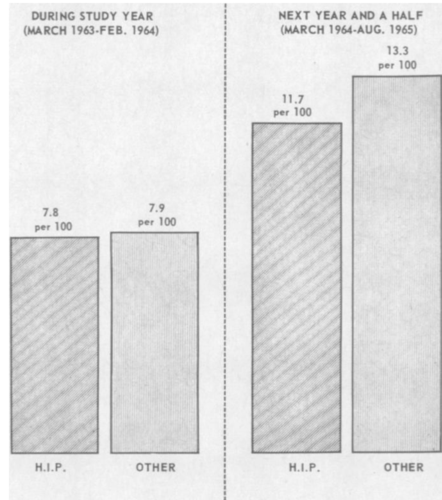
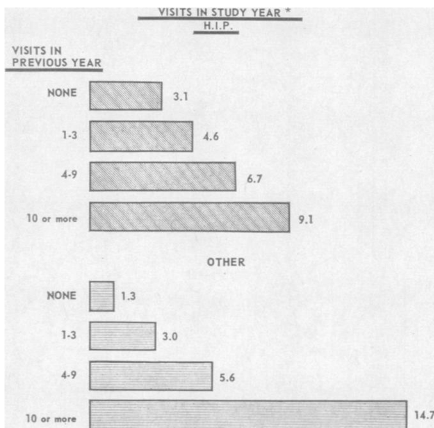


Figure 4—Mortality rates, Old Age Assistance recipients

Nursing Home Patients

With regard to the proprietary nursing home situation, both those enrolled in HIP and the others were an average age of 81 years; about two-thirds were women; and the ethnic composition of the two groups of nursing home patients was closer than was the case for ambulatory OAA's.

Figure 3—Rates of physician visits by experience in the year before the demonstration program started, Old Age Assistance recipients



* Physician visits per person per year.

The rate of physician visits to patients in nursing homes was very similar for the HIP and non-HIP patients, 16.8 and 17.7 per person per year respectively.* A high rate of physician use by nursing home patients is understandable but it should also be noted that the New York City code requires that these patients be seen at least once a month by a physician. It would also be expected that nursing home patients would frequently be in need of laboratory services. Data in HIP for all of its welfare nursing home patients confirm this expectation—each month almost one-fifth of the patients have laboratory tests and over the course of the year nursing home

* The physician visit rate for *all* HIP patients in nursing homes during the year March, 1963-February, 1964, was 20.3 per person as compared with 16.8 for persons in nursing homes on March 1, 1963, who were followed continuously over the same time period. The larger figure refers to the experience of patients only while they were in the nursing homes; the lower figure does not make allowance for the fact that during the study year some patients left nursing homes to enter hospitals or to return home.

patients average about 15 laboratory tests per person. Comparable information for non-HIP nursing home patients is not available but Welfare Department officials have indicated that laboratory tests among these patients are ordered very infrequently.

The hospital admission rate for HIP-nursing home patients was lower during the study year than for the non-HIP patients (30.9 and 38.9 per 100 persons per year respectively). The average duration of stay per hospitalized case was longer for HIP patients so that the average number of days of hospital care per nursing home patient was exactly the same for HIP and non-HIP: 12.1 hospital days per person per year.

While the rates of physician and hospital use are very similar for HIP and non-HIP nursing home patients, welfare officials visiting nursing homes have indicated that the shift to HIP resulted in substantial improvements in the quality of medical attention being given the patients. This is reflected in part by the use made of laboratory services. Welfare officials have also pointed out that a more rational use has been made of drugs. In the nursing homes under HIP care, the cost for drugs averaged $17.80 per patient in the study year; the corresponding figure for other nursing home patients was $23.18.

Mortality rates are available at this time for only the study year. These show a lower rate in HIP, 19.9 per 100 compared with 21.8 per 100 outside HIP. This is a small difference and could be due to chance. (It has not proved feasible to obtain reliable mortality data for a longer period of time than the one year covered by the study.)

Costs

Premium payments to HIP by the Department of Welfare are designed to meet the costs incurred by the medical groups to provide physician services, laboratory, x-ray, and a broad range of other ancillary medical care, as well as to meet costs of visiting nurse services, ambulance transportation, and administrative expenses at HIP. When the program started in September, 1962, the premium was set at $4 per month for an ambulatory OAA recipient and $6 per month for a nursing home patient. These were the estimated medical costs to the Department of Welfare for OAA and nursing home patients before the HIP demonstration program. It was decided to start with these figures even though it was recognized that OPD's were generally not charging for professional services rendered by the attending physicians. In the case of nursing home care, it was known that costs would be higher in part because of the laboratory tests.

During the first year of the demonstration program, sufficient information accumulated to calculate costs on the basis of actual experience. The assessment covered the amount of physician time required by the OAA's, their use of ancillary medical and visiting nurse services, and the increase in nonphysician personnel in medical groups. The result was a change in the premium for OAA's to $6 per month and to $8 per month for nursing home patients. The premiums are distributed as shown below:

Disbursement of Monthly Premium Payments for OAA and MAA Recipients Enrolled in HIP*

Item	OAA (ambulatory)	MAA (nursing home)
Total premium	$6.00	$8.00
Payment to medical groups (exclusive of Visiting Nurse Service and ambulance)	4.78	7.18
Visiting Nurse Service and ambulance	.52	.08
HIP costs (administration, health education, social workers, legal reserve)	.70	.74

* Payments cover out-of-hospital care.

There are no directly comparable cost figures for the non-HIP-OAA's. However, the United Hospital Fund of New York reports[4] that voluntary hospital outpatient clinics were being operated in 1964 at an average cost of $11.24 per visit. The average cost for 1965 was estimated at $12 per visit. These figures do not include costs for visiting nurse services or ambulances or, in most instances, costs for physician services other than those provided by interns and residents. They do include costs for prescribed drugs which are not part of the HIP premium. Some indication of what a clinic visit costs when attending physicians are on salary is found in data for two municipal hospitals, Elmhurst General Hospital, $16.73 per visit, and Coney Island Hospital, $15.45. As for nursing home patient costs, the Department of Welfare has negotiated a payment of $8 per month with hospitals assuming responsibility for those patients not under HIP care. This is, of course, exactly the same rate of payment made to HIP.

Summary

Enrollment in HIP of 12,000 recipients of Old Age Assistance (OAA) and about 1,500 welfare clients in proprietary nursing homes was accompanied by research to determine whether this enrollment resulted in changes in patterns of use of medical care and in mortality rates. Prior to enrollment, ambulatory OAA's received medical care from outpatient departments of local hospitals and home visits from physicians on a panel maintained by the Department of Welfare. Nursing home patients were under the care of panel physicians. If a patient was hospitalized, the house staff of a municipal or voluntary hospital became responsible for his care. In an effort to improve continuity and quality of care, indigent aged persons in various parts of the city were enrolled during September, 1962, in HIP; an important restriction on the scope of benefits was the welfare regulation that these patients continue to use general service ward accommodations for their hospital care.

The evaluation study consisted of a comparison between the experience among welfare enrollees in HIP and the experience among the OAA's and nursing home patients receiving welfare assistance who were not enrolled in HIP. The study started March, 1963, six months after the demonstration began, and ended February, 1964.

Changes in pattern of physician utilization were experienced by the ambulatory OAA's although over-all physician and hospital utilization rates did not appear to be influenced by enrollment in HIP. The proportion of HIP-OAA's who received no physician services went down somewhat, whereas the corresponding proportion in the non-HIP group remained unchanged. Also, there was a major change in where the HIP patient saw the physician, the shift being from high dependence on home visits to outpatient care in the medical group center. In addition, patients who tended to be low utilizers were likely to get more service when they were enrolled in HIP than they did otherwise; patients who in the predemonstration period used many physician services continued to obtain large volumes of care but averaged fewer doctor visits in HIP than under the traditional system. Nursing home patients showed no change in physician or hospital utilization rates. However, laboratory services were far more frequently used in HIP for these patients.

During the study year, the death rates among the indigent aged in HIP and those not in HIP were about the same. In the next year and a half, mortality among the ambulatory HIP-OAA's was lower than among the other OAA's. This provocative finding bears closer scrutiny

on the basis of additional experience. An opportunity for doing so is becoming available. Under the Medicaid program in New York, OAA recipients enrolled in HIP are to be covered for both out-of-hospital and in-hospital medical care from the plan's physicians. This will eliminate the critical break in continuity of care that existed in the demonstration program. Other OAA's are eligible to receive the full range of medical care from physicians in the community at large and future comparisons of utilization experience and mortality and disability rates would have a framework different from the study reported here. Indigent persons under 65 years of age also have the option of selecting HIP and, if the magnitude and nature of the selectivity that may occur can be determined, the inquiry might be extended to an age range in which differentials might reasonably be expected to be larger than those found among aged persons.

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4. United Hospital Fund of New York, Bull. No. 328 (Feb. 17), 1966.

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Second Alice Hamilton Lecture in Boston

The Kresge Center for Environmental Health of the Harvard University School of Public Health announces the second Alice Hamilton Lecture, to be given in Boston, May 25, 1967 by Dr. Norton Nelson, provost, University Heights Center, New York University. Dr. Nelson's subject will be "Environmental Factors in Carcinogenesis."

Further information is available from the Kresge Center for Environmental Health, 665 Huntington Avenue, Boston, Mass.