Comparison of Baltimore's Utilization Rates Under Two Physician-Payment Systems

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THE METHOD of payment to private physicians supplying home and office care to welfare clients under the Baltimore City Medical Care Program was changed January 1, 1963, from a capitation system to payment of a fee for each service. For 2 years before the change and for a complete year since the change, monthly statistics have been kept on physician utilization rates and hospital-clinic utilization rates. Since the total care of each outpatient utilizes both the physician and the hospital clinic, the figures for both are somewhat interdependent, and any change in one may be reflected in a change in the other. Experience for a complete year under the new system of payment to physicians can now be compared with the experience of previous years under the old capitation system of payment.

The Baltimore City Medical Care Program, initiated in May 1947, became well established in 1948. The program began with two medical care clinics of the University and Johns Hopkins Hospitals, and the directors of these clinics "secured the services of practicing physicians in the neighborhood to render the necessary home and office care" (*1*). The total eligible population in 1948 was recorded as 14,000 public assistance clients (*1*). Today the program encompasses services (physician, clinic, drug, dental, and eyeglass) to more than 60,000 clients ranging in age from birth to 95 years. Seven hospital clinics and 600 physicians participate in their care.

In the early days of the program, a system of payment was established guaranteeing to both the clinics and the physicians a fixed annual sum for each person who had registered for their services, regardless of the number of visits. This capitation system of payment was originally $11 annually per person to each medical care clinic and $7 annually per person to each physician. The seven clinics are still paid by this system, but the annual rate of payment has been increased to an amount not to exceed $14 per person.

In 1961 and 1962 statistical studies indicated that the capitation system of payment to the participating physicians was not an equitable arrangement. Physician utilization rates, by age and category of assistance, showed that the rates were low for children in the Aid to Dependent Children category and high for older persons in the Old Age Assistance, General Public Assistance, and Aid to the Permanently and Totally Disabled categories. The physicians caring for a large number of older persons were not being adequately reimbursed for the number of visits they were obligated to make. The fee-for-service rates of payment to physicians also had been increased in 1962 in the State medical care program, and it seemed necessary to increase the capitation fee in Baltimore City to maintain an equal rate of pay for the city physicians.

Estimates indicated that an annual capitation fee of approximately $8 per registered client would be necessary to equal the increased payment scale in the State. However, such an increase would not have solved the aforemen-

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tioned problem—that physicians caring for older patients were being inadequately paid for the many visits they were making to this group. Thus such an increase in the capitation fee seemed to be neither a feasible nor an equitable solution.

On January 1, 1963, therefore, a change was made to the fee-for-service system of payment currently being used in the counties of Maryland. The same scale of payment was adopted: $2.50 for an office visit, $3.50 for a visit to the patient's home during the day (8 a.m. to 8 p.m.), and $4.50 for a home visit at night. For each visit the physician submits an individual bill on an IBM card, and after these bills are processed the physician is paid promptly. No change has been made as yet in the method of payment to the seven hospitals.

Physician Utilization Rates

Table 1 lists physician utilization rates since January 1961 by month of service. The rates before January 1963 were calculated from a physician sample and expanded to the total population. Beginning January 1963, the rates were calculated from total physician visits to all persons in the medical care population; that is, all persons who have registered with the program and carry a medical care identification card.

A comparison of utilization rates in the early months of 1963 with those in the same months of 1961 and 1962 shows little difference. In 1963 the peak figure was in January, while in 1961 and 1962 the peak occurred in February. The abrupt increase from December 1962 to January 1963 is striking and might be attributed to the change in method of payment. All rates in the summer and fall of 1962 were unusually low, not only for physician utilization but also for illness in the city, while those of January 1963 were extremely high.

Illness in Baltimore City is studied continuously by means of the Baltimore Health Survey, a survey of a random sample of 100 families each month, or 1,200 families a year. A basic questionnaire given to these families asks the illness record of family members for the previous 2 weeks. Graphs published in the quarterly statistical report of the Baltimore City Health Department show that only 7.5 percent of persons surveyed reported a respiratory illness in December 1962. With the onset of the influenza epidemic in January 1963, respiratory illness increased to 15 percent (*2,3*), The change in the physician utilization rate in table 1 is of approximately the same magnitude. It therefore seems safe to assume that the high rate of January 1963 was due principally to the epidemic rather than to the change in method of payment.

As 1963 progressed, the physician utilization rate decreased until July, then increased in September and October and leveled off in the last 2 months to 3.0 visits per person per year. The average for 1963 was 3.0 visits per person per year, a considerable increase over the average of 2.6 for 1962.

In evaluating the reasons for this increase, several factors can be considered: First, the influenza epidemic increased physician utilization in January 1963 to a rate of 3.96, the highest rate for any single month since the winter of

Table 1. Physician utilization rates, Baltimore City Medical Care Program

Month	Number of visits per registered person per year			
	1961 [1]	1962 [1]	1963 [2]	1964 [2]
Average for year	2.7	2.6	3.0	[3] 3.36
January	2.82	2.88	3.96	3.43
February	3.54	3.24	2.52	3.20
March	2.86	3.12	2.88	3.37
April	2.52	3.12	2.88	3.40
May	[4] 2.28	3.24	3.00	3.34
June	[4] 2.28	2.76	2.64	3.26
July	2.81	2.16	2.64	3.01
August	2.24	2.04	2.53	2.80
September	2.42	2.16	3.08	3.13
October	3.12	2.28	3.56	3.70
November	2.88	2.21	3.04	-------
December	2.52	1.86	3.02	-------

[1] Calculated from visits to physicians of integrated sample—a sample of approximately 50 percent of the total medical care population for whom all services (physician, clinic, drug, dental, and eyeglass) were followed for the year—and expanded to the total population.

[2] Calculated from total number of physician bills for total population.

[3] Average, January to October.

[4] Calculated from stratum 5 physicians only; that is, physicians with 1,000 or more clients.

1959. Second, the composition of the medical care population has shown a consistent increase in the proportion of children, where utilization is low. Thus the total rate is weighted more heavily each year by this low figure and, if everything else were equal, should show some slight decrease. If the utilization rates of 1962 and 1963 are adjusted for population changes, the increase in the yearly total rate from 1962 to 1963 is 0.5 visit per person per year, or slightly more than 20 percent. Third, the change in method of payment to physicians was expected to influence the physicians' pattern of supplying care to medical care clients.

While the effects of a low rate of illness in Baltimore City in 1962 and a high rate of illness in 1963 cannot be discounted, it seems safe to conclude that the consistently higher level of physician utilization in the last several months of 1963 and the higher average for the year strongly indicate that a higher rate of visits by the physicians was developing.

Hospital-Clinic Utilization Rates

Clinic services include (*a*) initial physical evaluation of the enrollees, (*b*) diagnostic and laboratory services, and (*c*) special treatment of ambulant patients who have diseases that cannot be treated adequately by a private physician in the home or office. No hospital inpatient service is supplied under this part of the program, although hospital care is financed under another State arrangement. The seven hospital clinics thus become an important adjunct to the care provided by the private physician, who may request outpatient examinations by specialists, X-rays, laboratory tests, and other special services. While the clinics are not paid for every outpatient visit, each hospital reports such visits to the medical care section of the health department, making it possible to keep accurate records of clinic utilization rates.

Table 2 lists quarterly clinic utilization rates from July 1961 through September 1964 for all hospital clinics and separately for each hospital

Table 2. Hospital clinic utilization rates,[1] [2] Baltimore City Medical Care Program

Hospital clinic	Number of visits per person per year					
	July–September 1961	October–December 1961	January–March 1962	April–June 1962	July–September 1962	October–December 1962
All clinics	2.0	1.9	1.9	1.9	1.8	1.7
University	2.4	2.2	2.0	2.2	2.0	2.0
Johns Hopkins	2.1	2.0	1.9	2.0	2.1	2.1
South Baltimore	1.0	.8	1.1	1.0	.8	.9
Sinai	2.7	2.4	2.6	2.4	2.5	1.6
Provident	1.3	1.2	1.0	1.2	1.1	.9
Mercy	2.4	2.4	2.4	2.4	1.9	1.8
Baltimore City	2.5	2.2	2.4	2.1	1.8	1.4

Hospital clinic	January–March 1963	April–June 1963	July–September 1963	October–December 1963	January–March 1964	April–June 1964	July–September 1964
All clinics	1.8	1.8	1.8	1.6	1.8	1.9	1.8
University	2.1	2.0	2.2	2.1	2.1	2.1	1.8
Johns Hopkins	2.3	2.3	2.1	1.8	2.0	2.3	2.1
South Baltimore	.9	1.0	1.2	1.1	.9	1.0	1.3
Sinai	1.7	1.8	2.2	2.0	2.4	2.2	2.2
Provident	1.0	1.1	1.1	1.2	1.2	1.2	1.2
Mercy	1.8	1.8	1.9	1.6	1.5	1.7	1.7
Baltimore City	1.4	1.5	1.6	1.5	1.7	1.7	2.2

[1] Calculated from visits to hospital clinics of integrated sample—a sample of approximately 50 percent of the total medical care population for whom all services (physician, clinic, drug, dental, and eyeglass) were followed for the year—and expanded to the total population.

[2] Average for 1962=1.83, 1963=1.75, 1964=1.83.

clinic in the program. In general, the rates trend slightly downward, although some variability occurs between individual institutions. If the rates are adjusted for the changing composition of the population, the actual decrease in the total hospital clinic utilization rate from 1962 to 1963 is 0.1, or 5 percent. Thus it seems that the epidemic of 1963 did not affect the pattern of clinic utilization.

Physician-Clinic Utilization Rates

Total physician-clinic medical care provides a third measure for evaluating the effect of the change in method of payment. While the physician utilization rate increased from 1962 to 1963 and the clinic utilization rate decreased, the sum of both adjusted rates shows a net increase of about 9 percent. The proportion of the total care supplied by the physicians increased from 58 to 63 percent (table 3). This increase has continued in 1964.

Discussion

The new system of payment to physicians required a number of administrative changes. It was necessary to design a bill form on which physicians could report their visits and to plan the processing of these forms in such a way that the physicians could be paid promptly. A specially designed IBM card was chosen for the bill form. The physicians submit one such card containing pertinent information for each separate visit. The information is punched directly into the cards, which are then used for making up the financial listings for payment to each physician. This system makes it possible to receive bills daily from all physicians and to pay them three times a month.

Table 3. Physician-clinic utilization rates, Baltimore City Medical Care Program

Months	Number of visits per person per year		
	1962	1963	1964
Average for year [1]	4.4	4.7	[2] 5.0
January–March	5.0	4.9	5.1
April–June	4.9	4.6	5.2
July–September	3.9	4.5	4.8
October–December	3.8	4.8	------

[1] 4.43 to 4.75 is actual increase not adjusted increase—an increase that is adjusted because of changing composition of the population.
[2] First 3 quarters.

It was anticipated that the administrative cost would be greater under the fee-for-service system. The actual annual cost for cards, key punching, and processing of some 200,000 bills has been approximately $15,000. However, under the new system of payment, more information is readily available on a total or simple random-sampling basis, and it has become extremely simple to provide information to the State and Federal Governments. As a result, part of the funds originally allocated for integrated sampling have been saved.

The cost in terms of payment to physicians has increased under the new system because of the substantial rise in the utilization rate. For 60,000 clients the annual payment to physicians under the capitation system would be $420,000. At an average cost of $2.65 a visit (office, home-day, and home-night) and a utilization rate of 3.0 visits per person per year, the cost for the same 60,000 clients under the fee-for-service system has been about $477,000. Since the number of persons registered in the program has recently grown to 70,000 and the utilization rate has also increased even further in 1964, the cost of paying physicians has risen considerably.

Whether or not the higher utilization rate and its attendant higher cost have improved the quality of care to patients is debatable. While many physicians who subscribed to the capitation system may now be seeing their patients more often, it is felt that because of the still rather low fees and the geographic location of the patients, relatively few new physicians are participating in the program to any extent. Perhaps the greatest advantage of the new system, for the welfare of the patient, is the fact that any person with a medical care card may now visit any physician he chooses. Thus he presumably has access to care whenever it is necessary.

Summary

Comparison of physician and hospital clinic utilization rates in Baltimore, Md., before and after instituting a fee-for-service system of pay-

ment to the physicians shows that in 1963 physician utilization increased about 20 percent, clinic utilization decreased 5 percent, and total utilization increased about 9 percent, with the physician providing a slightly higher proportion of all visits.

Since probably only a part of the increase in the physician utilization rate resulted from a change in the illness pattern in Baltimore City from 1962 to 1963, it appears that an actual increase of about 10 percent in visits by physicians occurred within the first year after the new system of payment was introduced in 1963. In addition, some patients transferred from hospital clinic to physician services. Preliminary data for 1964 indicate that the rise in physician utilization is becoming more marked in the second year.

REFERENCES

(*1*) Baltimore City Health Department: 134th annual report. Baltimore, Md., 1948.

(*2*) Baltimore City Health Department: Quarterly statistical report. Vol. 14, No. 4. Baltimore, Md., Mar. 29, 1963.

(*3*) Baltimore City Health Department: Quarterly statistical report. Vol. 15, Nos. 1 and 2. Baltimore, Md., Sept. 30, 1963.

Outpatient Branch Established

The growing importance of ambulatory care and preventive medicine has resulted in the establishment of an outpatient branch in the Division of Hospitals, Public Health Service.

Dr. William C. Larsen, chief of the branch, said the major aims are: to improve medical care and provide preventive services such as physical examinations, diagnostic tests, and immunizations; to offer more clinical experience and training to physicians; and to conduct research and studies in ambulatory health care.

The Division of Hospitals administers 27 outpatient clinics and 13 hospitals. Most are in coastal cities and in Great Lakes and river shipping ports where there are many persons eligible for medical care from the Public Health Service. The patients are principally American seamen and members of the U.S. Coast Guard and other uniformed services.