

## Prepaid Capitation Versus Fee-For-Service Reimbursement in a Medicaid Population

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### **Abstract**

Utilization of health resources by 37,644 Medicaid recipients enrolled in a capitated health maintenance organization was compared with that of 227,242 Medicaid recipients enrolled in a traditional fee-for-service system over a 1-year period (1983-1984) in the state of Kentucky. Primary care providers in the capitated program had financial incentives to reduce downstream costs like specialist referral, emergency room use, and hospitalizations. The average number of physician visits was similar for both groups (4.47/year in the capitated program; 5.09/year in the fee-for-service system). However, the average number of prescriptions (1.9 versus 4.9 per year), average number of hospital admissions per recipient (0.11 versus 0.22 per year), and average number of hospital days per 1,000 recipients (461 versus 909 per year) were 50% to 60% lower in the capitated group than in the fee-for-service group. The Citicare capitated program resulted in a dramatic reduction in health-care resource utilization compared with the concurrent fee-for-service system for statewide Medicaid recipients.

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Since the creation of the Medicaid program in 1965, its enrollment has increased from 18 million in 1972 to 22 million in 1985 to nearly 34 million in 1994. Federal mandates regarding program eligibility, reimbursement, services, and enrollment increases have resulted in Medicaid being the second largest expenditure item in state budgets, accounting for nearly 20% of state general revenue spending.<sup>1</sup>

Escalating costs have forced states to seek less expensive ways to provide healthcare for Medicaid

recipients.<sup>2</sup> The passage of the Omnibus Budget Reconciliation Act of 1981, which encourages states to experiment with their Medicaid programs to find ways to save money, resulted in a significant expansion of the number of Medicaid managed care initiatives. In December 1982, Kentucky became one of nine states to receive a federal waiver to experiment with alternative delivery models to control costs of the healthcare needs of its Medicaid population. From July 1983 through June 1984, a Medicaid managed care program named Citicare was in place. It required mandatory enrollment of all Aid to Families with Dependent Children (AFDC) and AFDC-related recipients in Jefferson County (Louisville), Kentucky, in a capitated primary care gatekeeper model.

Since 1986, Medicaid managed care in Kentucky has been provided under the Kentucky Patient Access and Care Program (KenPAC). KenPAC is a statewide primary care case management/fee-for-service program for about 300,000 recipients of AFDC cash grants and related groups; case managers receive \$3 per month for each beneficiary under their case management.<sup>3</sup> The state of Kentucky is considering replacing the KenPAC program beginning in 1997 with a program similar to Citicare that uses capitated primary care providers.

Although the Citicare data are over a decade old, review of the Citicare program's effect on utilization of healthcare services seems in order. The Citicare data are unique because few published articles have directly compared use of clinical services by Medicaid patients cared for in a program with capitated primary care providers with use of clinical services in a case management/fee-for-service program.<sup>4-6</sup> Most published data on Medicaid managed care provide limited or no information on utilization of services, instead focusing on programs using primary care case management,<sup>7,8</sup> capitation programs that allow voluntary health maintenance organization (HMO) enrollment, and programs that do not capitate the primary care providers.<sup>9-12</sup>

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We compared the utilization of healthcare resources by Citicare participants with the utilization of healthcare resources by the entire population of AFDC recipients enrolled in a traditional fee-for-service system throughout the remainder of the state of Kentucky in 1983–1984. These data remain relevant even today as enrollment of AFDC recipients in managed care programs continues to increase. Medicaid managed care programs are now in place in 49 states,<sup>13</sup> and between 1990 and 1995 Medicaid managed care enrollment more than quadrupled, with more than 32% of all Medicaid beneficiaries now receiving managed care.<sup>14</sup> Most of the growth in Medicaid managed care programs has been in the fee-for-service primary care case management/gatekeeper model and the at-risk primary care gatekeeper model, as opposed to enrollment in prepaid health plans like the Citicare program.<sup>15</sup>

... METHODS ...

**Citicare Population**

Citicare served a monthly average of 37,644 recipients in 15,000 families. Participants in the Citicare program included all Medicaid recipients receiving AFDC (medical assistance and cash payments) and AFDC-related (medical assistance only) support in Jefferson County (Louisville), Kentucky. Citicare participants were locked into their chosen (61%) or assigned (39%) primary care gatekeeper physician from among the 300 practicing primary care physicians in Jefferson County contracting with Citicare, Inc.

**Statewide Medicaid Recipients**

The comparison group, the statewide Medicaid program, covered a monthly average of 227,242 recipients receiving AFDC and AFDC-related support in the remainder of the state of Kentucky (other than Jefferson County). Their financial eligibility requirements were identical to those of the participants in the Citicare program. The statewide Medicaid recipients were free to obtain healthcare from any provider site accepting Medicaid reimbursement.

**Population Demographics**

To address the concern that differences in age or racial distribution in the two populations contributed to the observed differences in utilization of healthcare services, we attempted to obtain these demographic data to compare the two groups. At the time of preparation of this manuscript in 1996, the age distribution and racial demographic data for the 1983–1984 time period were no longer available. As a surrogate, 1985 demographic data were used to compare the Jefferson County and statewide AFDC populations (Table 1). We felt that the 1985 demographic data, although not optimal, were a reasonable reflection of the age and racial distribution of Citicare and statewide Medicaid populations in Kentucky in 1983–1984. These two populations were comparable in age distribution. However, there was a higher percentage of whites in the statewide group than in the Jefferson County group. In addition, many of the statewide Medicaid recipients were cared for in rural settings, whereas the Citicare participants were managed in an urban setting.

**Reimbursement Mechanisms**

The Kentucky Cabinet of Human Resources contracted with a commercial management firm (Citicare, Inc.) to design and manage the pilot program. This federally qualified health insurance organization contracted for physicians' services, home healthcare, emergency care, hospitalization, medications, and ancillary services provided to recipients. Funds flowed from the state treasury to Citicare, Inc., to primary care physicians and the suppliers of healthcare services as authorized by the primary care physicians. Citicare, Inc., was paid a \$46.55 premium (1983 dollars) per member per month. This represented an amount equal to 5% less than the Commonwealth of Kentucky anticipated spending for healthcare for the Citicare program participants for 1 year. Each month primary care physicians in the Citicare program were paid 50% of their monthly capitation fee. The remaining 50% was set aside for specialist and emergency care

**Table 1.** Population Demographics of AFDC and AFDC-Related Recipients in Kentucky, 1985

Characteristic	Jefferson County (n = 41,402)	Statewide (n = 226,086)
	No. (%)	No. (%)
Age (yr)		
<1	1,927 (4.6)	9,821 (4.3)
1–6	11,812 (28.5)	56,734 (25.1)
7–18	13,852 (33.4)	77,427 (34.2)
>18	13,811 (33.3)	81,390 (36.0)
Caucasian	18,053 (43.6)	180,331 (79.7)

AFDC = Aid to Families with Dependent Children.

approved by the gatekeeper physician (30%) and for hospitalization costs above budget (20%).

The capitation fee per member per month for the primary care physician was \$25 for children under 2 years of age and \$11 for those over 2 years of age. Hospitalized neonates were not included in this program. Hospital bed utilization was budgeted to be 650 bed days per 1,000 participants with no adjustment for age of the Medicaid recipient. The primary care physician was granted the authority to deny emergency department access for nonemergent or nonurgent conditions. Incentives for effectively monitoring and controlling access to health services were primarily financial. Unexpended funds (set aside for specialist and emergency care) were returned to the primary care physician at the end of the year. If hospitalization expenses remained below allocated levels, this surplus was also shared by participating physicians in the form of an annual bonus. Specialist physicians were reimbursed by a fee-for-service mechanism, and hospitals were paid a per diem rate for hospitalized patients.

Reimbursement for healthcare services for the statewide Medicaid recipients was performed in a traditional fee-for-service system with no gatekeeper model and no financial incentives for reducing clinical utilization.

#### Utilization Monitoring

Resource utilization monitoring was limited. No preadmission certification was required for hospitalization of Citicare participants, but hospitalized patients underwent concurrent case review regarding duration of hospitalization. The number of physician visits, prescriptions filled, hospital admissions, and hospital days were monitored for both the Citicare participants and the statewide Medicaid recipients.

The Citicare participants' healthcare resource utilization was measured for the 12-month duration of the program from July 1, 1983, through June 30, 1984. These data were obtained from Citicare, Inc., and the Cabinet for Human Resources, Department of Social Insurance, Frankfurt, Kentucky, by using Medicaid claims data. Statewide Medicaid recipients' healthcare resource utilization was measured for the fiscal year November 1, 1983, through

October 31, 1984. Physicians participating in Citicare received quarterly reports documenting the utilization of services by the Citicare patients in their respective practices.

#### Statistical Analysis

Because we have data on the entire population of each group, no testing of statistical significance of these differences was necessary.

### ... RESULTS ...

#### Clinical Utilization

Participants in the capitated Citicare program used fewer medical resources than their statewide AFDC counterparts in a traditional fee-for-service system. Table 2 compares the utilization of healthcare services as measured by the average number of physician visits, prescriptions filled, hospital admissions per recipient, and hospital days per 1,000 recipients and the average length of stay for the Citicare versus the statewide Medicaid recipients.

The numbers of physician visits and prescription medications were tracked as a measure of outpatient utilization in the two groups. Our data demonstrate that the average number of physician visits per recipient, a recipient-controlled decision, was similar for both the Citicare and statewide Medicaid recipients:

**Table 2.** Healthcare Resource Utilization by Citicare and Statewide Medicaid Recipients Over a 12-Month Period (1983-1984)

Factor	Citicare Program	Statewide Medicaid
	Capitation	Fee-for-Service
Reimbursement Mechanism		
Enrollment, monthly average	37,644	227,242
Average number of physician visits per recipient	4.47	5.09
Average number of prescriptions per recipient	1.90	4.94
Average cost per prescription	\$3.95	\$6.61
Average number of hospital admissions per recipient	0.11	0.22
Hospital days/1,000 recipients	461	909
Average length of stay (d)	4.15	4.08

4.47 and 5.09 visits, respectively. Information about how many visits were to primary care physicians and how many were to specialists was not available. The average number of medication prescriptions and their average cost for the Citicare program participants were 60% less than the number and cost of prescriptions supplied to the statewide Medicaid recipients.

Inpatient resource utilization was measured by the number of hospital admissions per recipient and the number of hospital days per 1,000 recipients. Both the number of hospital admissions per recipient and the number of hospital days per 1,000 recipients were 50% lower among the Citicare participants. Such differences are clinically important and are not likely due to chance given the large number of patients studied and the availability of utilization data from the entire population.

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... DISCUSSION ...

Medicaid claims data for all AFDC and AFDC-related recipients in the state of Kentucky during the Citicare program in 1983–1984 document lower health-care resource utilization among participants in a managed care program with capitated primary care providers than among those cared for in the statewide fee-for-service system. The results of this study have significant implications:

- Financial incentives for the primary care providers to reduce utilization result in dramatic reductions in hospital and prescription drug utilization.
- Mandatory participation in this capitated plan eliminates the selection bias that can be seen in programs in which voluntary enrollment of Medicaid recipients in an HMO may attract healthier enrollees, resulting in lower resource utilization.
- Enrollment of only AFDC recipients, a population composed primarily of mothers and their children, prevents the application of these findings to other Medicaid populations such as aged, blind, or disabled persons, who historically account for the majority of Medicaid spending.<sup>16</sup>

Medicaid managed care programs have proliferated since 1981. However, few data document the effect on healthcare resource utilization of capitated primary care providers versus a traditional fee-for-service system. One other study demonstrated a large reduction in cost with a provider-capitated Medicaid managed care program in 1992. This program used partial capitation of the primary care physician (for outpatient services only) and demonstrated a 38% reduction in cost compared with a traditional fee-for-service Medicaid program.<sup>6</sup> An analysis of the first 9 years (1983–1991) of operation of the Arizona Healthcare Cost Containment

System, which uses capitated payments to healthcare plans, projected savings of \$100 million over estimates of what a traditional Medicaid program would have cost in Arizona for AFDC- and Supplemental Security Income-eligible patients. However, no direct comparison with costs or utilization of services in a fee-for-service Medicaid population was made.<sup>17</sup> A randomized controlled trial to evaluate utilization of services by 7,000 Medicaid recipients at the Florida site of the Program for Prepaid Managed Care compared a staff model HMO with a fee-for-service program. The study detected no differences in the cost or use of inpatient services. In this model, primary care providers were paid a salary, and the plan did not use financial incentives to control use of services.<sup>4</sup> A comparison of augmented fee for service with capitation and traditional Medicaid reimbursement for children demonstrated that capitation did not reduce access to primary care. No data were provided on cost savings, gatekeepers had no financial stake in reducing utilization, and voluntary enrollment may have introduced selection bias.<sup>9</sup> An academic medical center's mandatory managed care program for Medicaid recipients compared capitation with a traditional fee-for-service program in Philadelphia.<sup>11</sup> This managed care program had high turnover rates between the two programs because recipients were not locked into their primary care provider, and the primary care providers were not in control of 75% of the billed services. No utilization data were provided; therefore, it could not be determined whether the capitated program reduced utilization. These studies document the limited data that directly compare utilization of services by Medicaid recipients in a provider-capitated versus a fee-for-service managed care program; as a result, our data become more valuable.

Some limitations of our study must be addressed, however. The first limitation is that we have little information about clinical service utilization by the Citicare and statewide AFDC recipients before the initiation of the Citicare program. Pre-Citicare data documenting medical resource utilization by Jefferson County AFDC recipients comes from two sources: (1) a study that compared utilization just prior to and at the end of the Citicare program,<sup>18</sup> and (2) a study that compared pediatric emergency department utilization before, during, and after the Citicare program.<sup>19</sup> The first study, based on household surveys of 300 Medicaid case heads in the month before and again in the final month of the Citicare program, suggested no change in the rate of hospital inpatient stays, number of ambulatory care visits, or number of prescriptions filled; however, the study did suggest a 40% reduction in the use

of hospital emergency rooms for medical care among Citicare participants. Whether this sample reflected the true level of utilization in the population of AFDC recipients in Jefferson County can be questioned because surveyed members and healthcare events were clustered within cases and may not represent a simple random sample of that population. Our data contradict the findings of this study. The second study was done at Kosair Children's Hospital, the primary site for emergency care of children in Jefferson County. This study documented a 46% reduction in pediatric emergency room visits by Citicare participants during the 12-month duration of the Citicare program compared with the previous 12-month time period. Since 66% of the Citicare population was under 18 years of age, these data suggest a higher level of emergency room utilization by this population before the Citicare program was initiated. This reduction in emergency department utilization further demonstrates the dramatic effect of the Citicare program on healthcare resource utilization.

Because of the lack of data about utilization of medical services in the statewide Medicaid group before the initiation of Citicare, we cannot be certain whether the differences in utilization noted in 1983-1984 between the fee-for-service and the capitated groups were preexisting. We would not expect to find significant differences in healthcare resource utilization between these two AFDC populations for three reasons: (1) the AFDC financial eligibility criteria were the same for both groups; (2) the age distribution of both groups was similar, based on 1985 demographic data; and (3) the potential for limited access to medical care in rural areas could have resulted in lower utilization of healthcare resources in rural areas, but just the opposite was found.

Additional factors could have contributed to the lower utilization by the Citicare population. The short duration of the program could have resulted in decreased utilization among Citicare participants as a result of confusion about where to go for care. In addition, the absence of quality assurance standards to guard against underservice of the Citicare participants, coupled with strong financial incentives for physicians to limit care, could also have decreased medical resource utilization. Both of these factors could have resulted in limited access to physicians.

Our data suggest that access to physicians was not impeded by the Citicare program. Others also reported that capitation of Medicaid recipients does not reduce access to primary care.<sup>9</sup> The gatekeeper physicians in Citicare were successful, however, in limiting physician-controlled downstream costs. This is most con-

vincingly demonstrated by the 50% reduction in the number of hospital bed days per 1,000 recipients. This difference in inpatient utilization is most likely due to actions of the gatekeepers and not due to intrinsic preexisting differences in hospital utilization in the populations compared. The absence of outcomes assessment and quality indicators and the short duration of the Citicare program make it impossible to determine whether Citicare participants were denied necessary care, however.

Although these data were collected over a decade ago, the findings remain relevant today. Most states are still struggling to define the best system for controlling costs while ensuring that appropriate care is delivered to the Medicaid population.

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