

# Patterns of Medicaid utilization and expenditures in selected States: 1980-84

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*Data from the Medicaid Tape-to-Tape project are presented for 5 years, 1980-84, and for five States—California, Georgia, Michigan, New York, and Tennessee. These States represent a range of generous to restrictive Medicaid program characteristics. Utilization and expenditure measures are presented for most Medicaid services: hospital services, long-term*

*care, physician services, and prescription drugs. Data are further disaggregated by major eligibility group: children and adults covered by Aid to Families with Dependent Children; aged and disabled covered by Supplemental Security Income. Previous findings of a high degree of Medicaid diversity among States are confirmed here.*

## Introduction

Medicaid legislation was enacted in 1965 to provide health care coverage to particular groups of poor people and other people with high health care expenses. Evolving from already existing welfare programs, Medicaid has been described by many policymakers involved in the development of the legislation as almost an afterthought to the Medicare program (Cohen, 1985). In recent years, its growing expenditures have increased its importance in the Nation's health policy debate.

From the beginning, Medicaid has been a joint Federal-State program, with the States assuming primary administrative responsibility. The result has been widely varying administrative systems, including a diversity of data collection and processing approaches. Throughout the 1970's, little information on Medicaid existed at the Federal level. However, as Medicaid expenditures grew, Federal administrators increasingly saw the need for more detailed, reliable Medicaid data.

As interest in Medicaid has grown, there has been an associated growth in the number of research studies in which various aspects of the Medicaid program are investigated. One area of interest is differences among State programs and the resulting differences in the number and types of people covered by Medicaid and in State expenditures for Medicaid. States have wide discretion in the income levels used for eligibility determination; in the specific groups covered; in the amount, duration, and scope of services; and in reimbursement approaches.

Holahan and Cohen (1986) have used aggregate statistical reports on State Medicaid expenditures to investigate this issue. (Aggregate data are reported to the Health Care Financing Administration by States on Form HCFA-2082, Statistical Report on Medical Care: Recipients, Payments, and Services.) They found that, in 1979, Medicaid expenditures per person living below the poverty level varied from \$1,769 in Massachusetts to \$262 in New Mexico. The different State expenditure levels could not be explained by the rate of poverty in the State, State wealth, or the

Federal matching rate for expenditures. In a further investigation of this issue, Cromwell, Hurdle, and Schurman (1987) found that the major determinant of differences in State Medicaid spending per poor person is eligibility policy. States have many options in the categories of people who are covered and wide discretion in the income limits that are set for eligibility. In a recent policy study by the U.S. General Accounting Office (1987a), it was concluded that increased matching rates are not a sufficient incentive to encourage restrictive States to broaden their Medicaid programs. Political philosophies regarding health care for the poor may have more influence on the scope of Medicaid programs than matching rates have.

Changes in the Medicaid program over time have also been of interest to researchers. Burwell and Rymer (1987), who studied eligibility trends from 1975 through 1985, found a decline in the percent of poor people covered by Medicaid. The major reason for this decline in Medicaid coverage of the poor has been a sharp decline in constant-dollar income levels for the Aid to Families with Dependent Children (AFDC) program. These income cutoffs do not keep pace with inflation but are the basis for determining Medicaid eligibility. After adjusting for inflation, the median decline in the income level from 1975 to 1985 was 30 percent. This means that a poor person who had the maximum qualifying income for categorical eligibility under AFDC in 1975 needed to have 30 percent less income in real dollars in order to be eligible for Medicaid in 1985.

Burwell and Rymer (1987) point to several key factors explaining Medicaid expenditure growth from 1975 through 1985. The major factor is the growth of expenditures for the Supplemental Security Income (SSI) population, both aged and disabled enrollees. Much of this growth has resulted from the increasing cost of care in nursing homes and intermediate care facilities for the mentally retarded. Equally important has been the growth in noninstitutional expenditures for the aged and disabled during the period.

Using Health Care Financing Administration data on annual Medicaid expenditures and adjusting for medical care cost inflation, the U.S. General Accounting Office (1987b) showed that, although Medicaid expenditures increased by 44 percent in

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constant dollars in the period 1973-85, all of the expenditure growth occurred during the 1970's. After adjusting for inflation, essentially no growth has occurred in Medicaid expenditures during the 1980's. Holahan and Cohen (1986), in their analysis of expenditures by type of service, showed that the slowdown in expenditure growth was greatest for hospital services. During the period 1981-84, Medicaid expenditures for hospital services actually declined slightly because of declines in the number of persons receiving services and expenditures per recipient. At the same time, the number of long-term care recipients and expenditures per recipient increased slightly, resulting in an increase in the proportion of Medicaid expenditures for the SSI populations, who are the primary users of long-term care services.

The leveling off in expenditure growth from 1980 to 1984 is related to a number of major Medicaid program changes that have been implemented since 1980. Of major importance are the reductions in qualifying income levels for AFDC eligibility after adjusting for inflation. Also, the Omnibus Budget Reconciliation Act of 1981 (OBRA) significantly increased States' flexibility in deciding how to run their Medicaid programs.

A main thrust of OBRA involved limiting AFDC eligibility for families with earned income and limiting the types of income that can be disregarded in determining eligibility. OBRA gave States more freedom in targeting services to certain enrollees. Also, home and community-based care was authorized through section 2176 as a cost-saving alternative to institutionalization. OBRA ended Federal requirements that forced States with medically needy programs to cover all medically needy beneficiaries, thus giving States greater flexibility in covering selected medically needy enrollee groups. OBRA also introduced reimbursement and administrative changes to the Medicaid program, such as allowing the use of alternative hospital reimbursement systems. Most States no longer use retrospective cost-based hospital reimbursement.

The Tax Equity and Fiscal Responsibility Act of 1982, although less sweeping than OBRA, nonetheless contained several important changes regarding the Medicaid program. For example, it expanded the range of services for which nominal copayments could be imposed. The Deficit Reduction Act passed in 1984 widened Medicaid eligibility in a number of areas; in particular, it required coverage of first-time pregnant women and children under 6 years of age in two-parent (intact) families if those individuals met State income guidelines for AFDC eligibility.

In summary, the early 1980's can be characterized as a period of change in Medicaid program policy. Changes resulted both from the desire at Federal and State levels for greater flexibility in program management and from State budget crises, which required States to reduce expenditure growth. Initial analyses have suggested that these legislative and policy changes reduced the growth in expenditures during the period.

The purpose of this article is to present trends in Medicaid enrollment, service utilization, and expenditures for the years 1980-84 in California, Georgia, Michigan, New York, and Tennessee. We compare the experience of these States for selected Medicaid populations and types of service. To the extent possible, observed patterns are analyzed in terms of the legislative, policy, and administrative changes implemented by the States during these years. In the next section, we describe the Medicaid Tape-to-Tape project, the source of the data for this study.

## Medicaid Tape-to-Tape project

In this article, we provide longitudinal and cross-sectional data to analyze the effects of program changes on utilization and expenditures in the early 1980's for selected States. The Medicaid Tape-to-Tape project is one of several Medicaid data initiatives adopted by the Office of Research of the Health Care Financing Administration. In this project, some States are asked to voluntarily submit copies of data tapes that they accumulate as byproducts of their claims payment systems. These systems (known as Medicaid Management Information Systems) differ among States; however, the existence of a set of Federal guidelines assures some comparability of file contents and data definitions. By 1980, most States had a functioning Medicaid Management Information System (MMIS) that provided person-level data on each Medicaid enrollee and on each Medicaid-covered health care event.

Five States have participated in the Tape-to-Tape project: California, Georgia, Michigan, New York, and Tennessee. The States were chosen because of the diversity of their Medicaid programs, the ability of their MMIS programs to provide data, and their willingness to participate. They have provided complete MMIS eligibility, claims, and provider files for selected years. These have been edited and recoded into uniform file formats to facilitate cross-sectional and longitudinal analyses.

The data in this article are for all five States for 5 years (1980-84) with two exceptions. Tennessee did not provide data for 1982 because of a change in data processing in that year. New York did not participate in the project during 1983 and 1984.

In order to eliminate potential biases that may be introduced by the claims payment process, the data presented in this article are aggregated by the dates on which services were provided. In addition, data are presented by calendar year to facilitate comparison with other health services data. Much of the analysis is focused on 1981, the most recent year for which complete data are available for all five States.

Data from these five States allow the study of variations in Medicaid program structure. Some key characteristics of the five State Medicaid programs in 1981 are shown in Table 1. Three of the States—California, New York, and Michigan—operate among

**Table 1**  
**Selected Medicaid program characteristics: Selected States, 1981**

| Characteristic   | California | Georgia | Michigan | New York | Tennessee |
|--|------------|---------|----------|----------|-----------|
| National rank in number of Medicaid recipients <sup>1</sup>                        | 1          | 13      | 6        | 2        | 17        |
| National rank in Medicaid expenditures <sup>1</sup>                                | 2          | 12      | 4        | 1        | 18        |
| Ratio of Medicaid recipients to people living below the poverty level <sup>2</sup> | 0.83       | 0.31    | 0.72     | 0.60     | 0.28      |
| AFDC monthly income level for family of 4 <sup>3</sup>                             | \$601      | \$216   | \$508    | \$515    | \$148     |
| SSI monthly income level for individuals <sup>4</sup>                              | \$439      | \$284   | \$289    | \$328    | \$284     |
| Number of optional Medicaid services <sup>1</sup>                                  | 30         | 13      | 24       | 28       | 17        |
| Medically needy program <sup>1</sup>   | Yes        | No      | Yes      | Yes      | Yes       |

<sup>1</sup>(Ruther et al., 1986).

<sup>2</sup>Clinkscale, R. M., McCue, S., Weinberger, E., et al.: *Analysis of State Medicaid Program Characteristics, 1982*. Contract No. HCFA-500-81-0400. Prepared for Health Care Financing Administration, Rockville, Md. La Jolla Management Corporation, 1982.

<sup>3</sup>Social Security Administration: *Characteristics of State Plans for Aid to Families With Dependent Children*. SSA Pub. No. 80-21235. Office of Family Assistance, Washington, D.C. 1982.

<sup>4</sup>Rigby, D. E., and Ponce, E.: *The Supplemental Security Income Program for the Aged, Blind, and Disabled: Selected Characteristics of State Supplemental Programs as of January, 1982*. SSA Pub. No. 13-11975. Office of Research and Statistics, Social Security Administration, Washington, D.C. Mar. 1985.

NOTE: AFDC is Aid to Families with Dependent Children. SSI is Supplemental Security Income.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

the largest Medicaid programs in the country and also have generous programs in terms of eligibility and benefits. The programs of the two smaller States, Tennessee and Georgia, resemble each other and differ from the other State programs in size and restrictiveness as well as geographic location. Both restrict AFDC enrollment through relatively low income eligibility levels. Also, these States cover fewer optional services and groups than the other three States do. Of the five States, only Georgia did not have a medically needy program during the study period.

## Methods and limitations

The data reported here have been collected on an ongoing basis as part of program administration and are derived from two basic types of files:

- Enrollment files containing individual enrollee demographic characteristics, basis of eligibility, and monthly enrollment status.
- Claims files containing data on actual health encounters for all types of services that resulted in the filing of a claim for Medicaid reimbursement.

Because several States have participated in the Tape-to-Tape project, it was necessary to define a uniform set of variables and to recode data from individual States into uniform files. Once the uniform files were complete, a person-level file containing one record per enrollee for each year was constructed. Each person-level file includes data on demographic characteristics and on health care utilization and expenditures. The data presented in this article were developed from these person-level files.

The following three variables are used to count Medicaid populations.

- *Enrollees*—These individuals were enrolled in Medicaid for some portion of the study year.
- *Recipients*—These enrollees received at least one Medicaid-covered service during the year.
- *Users*—These recipients used a particular service during the year (e.g., they were users of hospital

services). A recipient was counted more than once if he or she used more than one type of service in the year.

When counting enrollees, two different methods were used. The first method was to count the total number of unique persons who were enrolled at any time during a particular calendar year. This approach, the ever-enrolled method, yields an unduplicated count of individual enrollees, recipients, or users, each unique person being one unit in the count.

In the second method of counting enrollees, the person-year method, adjustment is made for the variation in enrollment time by counting enrollees fractionally according to the portion of the year in which they were actually enrolled. Thus, a person who was enrolled in Medicaid for 6 months contributed .5 person-year to the pool of enrollment experience. The person-year method is preferred when calculating rates of use or expenditures because adjustment is made for exposure time on Medicaid. In this article, Tables 2-8 contain data for persons who were ever enrolled and Tables 2 and 9-15 contain data on person-years of enrollment.

The Medicaid program covers several distinct groups of enrollees, based on a person's relationship to the SSI and AFDC cash assistance programs. Therefore, in many tables, information is arrayed according to the following eligibility groups:

- SSI aged.
- SSI disabled (including blind enrollees).
- AFDC children.
- AFDC adults.
- Other (primarily children in intact poor families).

Another important variable is maintenance assistance status, which indicates whether or not the person received cash assistance. The categories used in this article include the following.

*Categorically needy receiving cash payments*—These individuals receive cash assistance from the AFDC or SSI program.

*Categorically needy not receiving cash payments*—States are mandated to extend Medicaid eligibility to

certain groups of individuals and families, treating them as if they were AFDC or SSI cash assistance recipients even though they do not receive cash benefits. These groups include AFDC-related families denied AFDC cash assistance because they would receive less than \$10 in monthly benefits, AFDC-related families who lost AFDC because of employment, individuals who would be eligible for AFDC or SSI if social security increases had not occurred, certain groups of pregnant women, and other smaller groups. Some optional coverage groups also fall under this status, including those who would be eligible for cash assistance if they applied and institutionalized individuals qualifying under a special income eligibility level.

*Medically needy*—These individuals have incomes that are too high to receive cash payments but are below the medically needy income level if medical expenses are considered.

Both utilization and expenditure measures were analyzed by type of service. Three summary classes of service are used in the article:

- Hospital care (including acute care hospitals but excluding psychiatric and chronic care hospitals).
- Long-term care (including psychiatric hospitals, chronic disease hospitals, skilled nursing facilities, and intermediate care facilities).
- All other care.

In some tables, the category of all other care is disaggregated to show services by specific types of providers, such as physicians and pharmacies.

Two Medicaid subpopulations are excluded from the analyses presented in this article. First, persons who were enrolled in State-funded programs for which there was no Federal financial participation are excluded for consistency reasons because major differences exist in coverage of these populations among the States. Second, persons who were enrolled in health maintenance organizations (HMO's) are excluded. Although States typically maintain enrollment and monthly premium payment data for HMO enrollees, HMO's are not generally required to submit detailed data on the services provided to program enrollees. Therefore, the Medicaid data systems frequently contain incomplete data for HMO enrollees.

For aged and disabled persons covered by Medicare (crossovers), Medicare is the first payer and Medicaid pays only for residual coinsurance and deductibles. Thus, it was difficult to obtain accurate utilization measures for crossovers. For example, the number of covered days for both inpatient and skilled nursing facility care and the number of physician visits were underreported for crossovers. Because most aged and many disabled Medicaid enrollees were crossovers, inpatient hospital days and physician visits are not reported here for the aged and disabled. Medicaid expenditure data reflect total Medicaid reimbursements for crossover enrollees. However, to the extent that significant Medicare expenditures were made, the data presented here are underreports of

total Federal outlays for this population.

Mothers and newborns were sometimes grouped together on claims. In those instances, only one hospitalization was tabulated. When the mother and infant had separate claims for the delivery hospitalization, two discharges were tabulated, one assigned to the AFDC child eligibility group and one to the AFDC adult eligibility group. Because these situations occurred in all States to varying degrees, bias may exist in hospital utilization rates for this population.

In some States, claims for initial screening of children in the early and periodic screening, diagnosis, and treatment (EPSDT) program were included in the claims data. In other States, they were not available. For consistency in cross-State analyses, EPSDT claims are excluded. However, referrals and treatments following EPSDT visits are included in the analyses.

Data on physician visits presented here include physician visits to hospital and nursing home patients because these visits cannot be easily separated from other types of visits.

Fiscal year data are presented for New York for 1982; all other data are reported based on calendar year. New York data were incomplete for 1980 and 1981 because of the phase-in of its MMIS. In 1981, the year focused on in much of this article, approximately 72 percent of New York Medicaid enrollee experience was covered by the MMIS data base. Similarly, Michigan data for 1980 were incomplete because claims for long-term care facilities were not reported through its MMIS in that year. Because of this limitation, trends in expenditures were examined only for the 1981-84 time period. It was necessary to exclude some Georgia enrollees whose enrollment and claims information could not be matched because of changes in recipient identification numbers. A preliminary analysis of claims for those individuals showed that they did not differ from other Medicaid enrollees in any significant way. Basic counts of Georgia enrollees and expenditures (Tables 2 and 9) include all enrollees. Tables containing percent distributions and rates include only persons for whom enrollment and claims data were matched (about 90 percent of 1981 Georgia enrollees).

## Findings

### Composition of State Medicaid populations

In Table 2 are shown the number of persons ever enrolled in Medicaid in the five Tape-to-Tape States during the years 1980-84. The States are ranked by enrollment size as follows: California, New York, Michigan, Georgia, and Tennessee. In 1981, California had about 3½ million persons enrolled; New York, more than 2 million; and Michigan, more than 1 million. The smaller States, Georgia and Tennessee, each had about ½ million persons. From 1980 to 1984, the number of persons enrolled declined slightly in California, grew by 3.9 percent in Georgia, increased by 3.3 percent in Michigan, and declined by

**Table 2**  
**Number of persons ever enrolled in Medicaid during the year and person-years of enrollment, by State and year: Selected States, 1980-84**

| Item and year                 | California | Georgia <sup>1</sup> | Michigan                   | New York <sup>2</sup> | Tennessee |
|-------------------------------|------------|----------------------|----------------------------|-----------------------|-----------|
| <b>Persons ever enrolled:</b> |            |                      | <b>Number in thousands</b> |                       |           |
| 1980                          | 3,573      | 533                  | 1,113                      | 1,616                 | 447       |
| 1981                          | 3,585      | 516                  | 1,236                      | 2,048                 | 440       |
| 1982                          | 3,612      | 505                  | 1,186                      | 2,345                 | NA        |
| 1983                          | 3,473      | 540                  | 1,208                      | NA                    | 441       |
| 1984                          | 3,444      | 554                  | 1,150                      | NA                    | 423       |
|                               |            |                      | <b>Percent change</b>      |                       |           |
| 1980-84                       | -3.6       | +3.9                 | +3.3                       | NA                    | -5.4      |
| <b>Person-years:</b>          |            |                      | <b>Number in thousands</b> |                       |           |
| 1980                          | 2,569      | NA                   | 852                        | 1,266                 | 355       |
| 1981                          | 2,632      | NA                   | 951                        | 1,494                 | 362       |
| 1982                          | 2,648      | 421                  | 920                        | 1,742                 | NA        |
| 1983                          | 2,568      | 440                  | 947                        | NA                    | 331       |
| 1984                          | 2,568      | 452                  | 897                        | NA                    | 336       |
|                               |            |                      | <b>Percent change</b>      |                       |           |
| 1980-84                       | 0.0        | NA                   | +5.3                       | NA                    | -5.4      |

<sup>1</sup>Complete data on person-years of enrollment were not available for 1980 and 1981.

<sup>2</sup>Only selected counties are represented for 1980 and 1981 because of phase in of Medicaid Management Information System. Data shown here represent about 72 percent of total New York Medicaid enrollee experience for 1981.

NOTE: NA is not available.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

5.4 percent in Tennessee. The trend in New York cannot be derived from these data because of the partial counts in 1980 and 1981 and the lack of data for 1983 and 1984. Although enrollee counts are not available nationally, it is clear from aggregate Medicaid statistical reports that the number of Medicaid recipients nationally was stable during the same 5-year period.

The ratio of persons ever enrolled in Medicaid during 1980 to persons below the poverty level is shown by State and age in Table 3. U.S. Bureau of the Census data were used to estimate the poor population. For New York, which was phasing in its MMIS during this period, the 1982 Medicaid counts were used as a more accurate representation of the size of the State's Medicaid population.

Dramatic differences can be seen in the ratio of Medicaid enrollees to people below the poverty level

**Table 3**  
**Ratio of persons ever enrolled in Medicaid during the year to persons living below poverty level, by age and State: Selected States, 1980**

| State                 | Age      |                |             |                  |
|-----------------------|----------|----------------|-------------|------------------|
|                       | All ages | Under 21 years | 21-64 years | 65 years or over |
|                       | Ratio    |                |             |                  |
| California            | 1.36     | 1.45           | .92         | 3.09             |
| Georgia <sup>1</sup>  | .57      | .58            | .44         | .90              |
| Michigan              | 1.17     | 1.39           | .94         | 1.02             |
| New York <sup>1</sup> | 1.01     | 1.11           | .75         | 1.64             |
| Tennessee             | .60      | .62            | .46         | .89              |

<sup>1</sup>Medicaid data are for 1982.

SOURCES: Data on Medicaid persons ever enrolled: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data on people below poverty level: U.S. Bureau of the Census: *Statistical Abstract of the United States, 1985*. 105th ed. Washington, U.S. Government Printing Office, 1984; (U.S. Bureau of the Census, 1985).

across States and age groups. For Georgia, the ratio overall was 0.57; this means that there were about one-half as many Medicaid enrollees as people living in poverty. In contrast, California had a ratio of 1.36, indicating that 36 percent more people were enrolled in Medicaid in that State than were defined as poor.

Several factors should be weighed when interpreting these variations. Medicaid serves only selected poor and near-poor groups, so many poor people are not eligible for coverage. Also, the ratio shown should not be interpreted as the proportion of the poor population covered by Medicaid because people whose incomes are above the poverty level may be enrolled in Medicaid through medically needy provisions. In addition, cost of living varies considerably across the United States, but the official poverty level does not vary by State. Therefore, people below the poverty level in a low-cost State such as Georgia have lower average living expenses than those below the poverty level in a high-cost State such as California. Finally, the U.S. Bureau of the Census counts people who are below the poverty level at one point in time, but our count represents people enrolled in Medicaid at any time during the year.

Previously reported ratios of Medicaid recipients to persons living below the poverty level have been substantially lower than those reported here. For example, a fiscal year 1983 ratio of 0.31 was reported for Georgia by the Health Care Financing Administration (Ruther et al., 1986). The ratios reported here are higher because they are based on Medicaid enrollees, not recipients. The use of recipient counts in such a ratio understates the total Medicaid population because a substantial proportion of enrollees do not use services in a given year.

The ratios presented in Table 3 for the population 65 years of age or over range from 0.89 to 3.09. This

means that a large proportion of the elderly poor and many of the elderly who were near poor received Medicaid coverage in these States. This more extensive coverage undoubtedly results from the fact that program eligibility is specifically extended to the aged and that SSI income levels (applied to the aged) are relatively high compared with AFDC levels. The ratio of elderly enrollees to elderly poor was close to 1 in all States except California, where it was much higher (3.09). California provides substantial State supplements to SSI and, therefore, has much higher income levels for Medicaid eligibility for the elderly. In 1982, the California SSI income level for an aged couple was \$9,780, but the U.S. poverty level for an aged couple was \$5,836 (Ruther et al., 1986; U.S. Bureau of the Census, 1985).

In contrast, there was a great deal more variability across these States in the ratio of Medicaid enrollees to the poor for children (under 21 years of age) and for persons 21-64 years of age. For example, California and Michigan had high rates of coverage for children (ratios of 1.45 and 1.39, respectively), but Georgia (0.58) and Tennessee (0.62) did not. There was similar variation in coverage for adults. In 1980, both California and Michigan covered low-income children in families with unemployed parents (an AFDC option), but Georgia and Tennessee did not. California, Michigan, and Tennessee covered first-time pregnant women, but Georgia did not. Also, income levels for eligibility determination were considerably higher in California, Michigan, and New York (Table 1) than in Georgia and Tennessee. Recent and proposed changes in eligibility for low-income women and children may reduce the variation in coverage across States. For example, coverage of poor pregnant women and children in intact families is now required. However, income levels for AFDC eligibility will continue to vary across States, and this is the

most important determinant of the proportion of persons living in poverty who are covered by Medicaid.

In addition to these differences in the size of the five State Medicaid populations and in the proportion of the States' poor covered by Medicaid, differences can be seen in the composition of the covered populations. The distribution of enrollees in 1981 is shown in Table 4 by Medicaid eligibility group and State.

A large majority of enrollees in all States—ranging from 74 percent in California to 100 percent in Georgia—were categorically needy; that is, they were eligible for Medicaid because they met the categorical and income requirements for cash assistance. The remainder of enrollees were medically needy. Georgia had no medically needy program in 1981.

The largest difference among the States was in the proportion of total enrollees who became eligible through SSI provisions. This proportion was highest in Tennessee (22 percent disabled and 20 percent aged) and Georgia (21 percent disabled and 20 percent aged). Only 17 percent of Michigan's Medicaid population were SSI enrollees, compared with 42 percent of Tennessee's Medicaid population.

The distributions of the five State Medicaid populations in 1981 are shown by sex of enrollee in Table 5. The sex distributions were similar, ranging from 64.7 percent female in Georgia to 58.8 percent female in California. Age distributions (Table 6) differed across the States, as would be expected from observed eligibility group differences. Georgia and Tennessee had a higher proportion of enrollees 65 years of age or over (about 24 percent) than the other three States had. Michigan had the highest proportion of children (56.8 percent). These observed differences among the States in the distribution of enrollees by sex and age are explained primarily by differences in

**Table 4**  
**Percent distribution of persons ever enrolled in Medicaid during the year, by State, maintenance assistance status, and eligibility group: Selected States, 1981**

| Maintenance assistance status and eligibility group | California           | Georgia | Michigan | New York | Tennessee |
|---|----------------------|---------|----------|----------|-----------|
|   | Percent distribution |         |          |          |           |
| Total   | 100                  | 100     | 100      | 100      | 100       |
| AFDC adult  | 22                   | 17      | 29       | 21       | 15        |
| AFDC child  | 44                   | 42      | 54       | 45       | 42        |
| SSI blind and disabled                              | 14                   | 21      | 10       | 13       | 22        |
| SSI aged  | 13                   | 20      | 7        | 15       | 20        |
| Other   | 7                    | —       | 1        | 5        | 1         |
| Categorically needy                                 | 74                   | 100     | 91       | 81       | 89        |
| AFDC adult  | 17                   | 17      | 28       | 18       | 14        |
| AFDC child  | 36                   | 42      | 53       | 40       | 40        |
| SSI blind and disabled                              | 12                   | 21      | 7        | 11       | 20        |
| SSI aged  | 9                    | 20      | 3        | 8        | 15        |
| Other   | —                    | —       | —        | 3        | —         |
| Medically needy                                     | 26                   | —       | 9        | 19       | 11        |
| AFDC adult  | 5                    | —       | 1        | 3        | 1         |
| AFDC child  | 8                    | —       | 1        | 5        | 2         |
| SSI blind and disabled                              | 2                    | —       | 3        | 2        | 2         |
| SSI aged  | 4                    | —       | 4        | 7        | 5         |
| Other   | 7                    | —       | 1        | 2        | 1         |

NOTE: AFDC is Aid to Families with Dependent Children. SSI is Supplemental Security Income.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

**Table 5**  
**Number and percent distribution of persons ever enrolled in Medicaid during the year, by sex and State: Selected States, 1981**

| State      | Total <sup>1</sup>  |         | Male                |         | Female              |         |
|------------|---------------------|---------|---------------------|---------|---------------------|---------|
|            | Number in thousands | Percent | Number in thousands | Percent | Number in thousands | Percent |
| California | 3,585               | 100.0   | 1,422               | 39.7    | 2,108               | 58.8    |
| Georgia    | 473                 | 100.0   | 166                 | 35.1    | 306                 | 64.7    |
| Michigan   | 1,236               | 100.0   | 495                 | 40.0    | 741                 | 60.0    |
| New York   | 2,048               | 100.0   | 782                 | 37.2    | 1,266               | 61.8    |
| Tennessee  | 440                 | 100.0   | 159                 | 36.1    | 278                 | 63.2    |

<sup>1</sup>Includes a small percentage of unknowns; therefore, percents may not add to 100.0.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

**Table 6**  
**Number and percent distribution of persons ever enrolled in Medicaid during the year, by age and State: Selected States, 1981**

| State                   | Age                 |         |                     |         |                     |         |                     |         |
|-------------------------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|
|                         | All ages            |         | Under 21 years      |         | 21-64 years         |         | 65 years or over    |         |
|                         | Number in thousands | Percent |
| California <sup>1</sup> | 3,585               | 100.0   | 1,842               | 51.4    | 1,126               | 31.4    | 579                 | 16.2    |
| Georgia                 | 473                 | 100.0   | 222                 | 46.9    | 137                 | 29.0    | 114                 | 24.1    |
| Michigan                | 1,236               | 100.0   | 702                 | 56.8    | 425                 | 34.4    | 109                 | 8.8     |
| New York                | 2,048               | 100.0   | 1,067               | 52.1    | 630                 | 30.8    | 351                 | 17.1    |
| Tennessee               | 440                 | 100.0   | 200                 | 45.5    | 134                 | 30.5    | 106                 | 23.9    |

<sup>1</sup>Includes a small percentage of unknowns; therefore, percents do not add to 100.0.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

**Table 7**  
**Percent of persons ever enrolled in Medicaid during the year receiving Medicaid-covered services, by State, maintenance assistance status, and eligibility group: Selected States, 1981**

| Maintenance assistance status and eligibility group | California | Georgia | Michigan | New York | Tennessee |
|---|------------|---------|----------|----------|-----------|
|   | Percent    |         |          |          |           |
| Total   | 79         | 80      | 80       | 79       | 75        |
| AFDC adult  | 80         | 82      | 81       | 80       | 75        |
| AFDC child  | 76         | 72      | 77       | 79       | 68        |
| SSI blind and disabled                              | 89         | 88      | 90       | 80       | 79        |
| SSI aged  | 88         | 89      | 90       | 81       | 85        |
| Other   | 64         | —       | 76       | 58       | 74        |
| Categorically needy                                 | 82         | 80      | 80       | 81       | 74        |
| AFDC adult  | 83         | 82      | 82       | 84       | 76        |
| AFDC child  | 78         | 72      | 77       | 81       | 69        |
| SSI blind and disabled                              | 90         | 88      | 89       | 80       | 79        |
| SSI aged  | 89         | 89      | 86       | 78       | 82        |
| Other   | —          | —       | —        | 52       | —         |
| Medically needy                                     | 70         | —       | 86       | 72       | 80        |
| AFDC adult  | 70         | —       | 69       | 61       | 62        |
| AFDC child  | 65         | —       | 64       | 59       | 57        |
| SSI blind and disabled                              | 82         | —       | 92       | 79       | 82        |
| SSI aged  | 86         | —       | 92       | 85       | 96        |
| Other   | 64         | —       | 76       | 66       | 74        |

NOTE: AFDC is Aid to Families with Dependent Children. SSI is Supplemental Security Income.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

the distribution of enrollees by basis of eligibility.

It is reasonable to expect that some enrollees will not receive covered services in a calendar year. As shown in Table 7, there was a close correspondence among the States in the proportion of total enrollees receiving services during the year, 75-80 percent. Rates of use varied by eligibility group and State. Rates were higher for SSI enrollees than for AFDC enrollees, ranging from 79 percent in Tennessee to 90 percent in Michigan for disabled enrollees and from

68 percent in Tennessee to 79 percent in New York for AFDC children. (Because data on EPSDT screening visits were unavailable, the rates reported here for children may be artificially low.)

The proportion of total enrollees who received services was lower for medically needy than for categorically needy AFDC groups. This apparent anomaly deserves further study and may result from one of two factors. All members of an economic unit (known as a case) become eligible as a result of the

**Table 8**  
**Percent of persons ever enrolled in Medicaid during the year through Supplemental Security Income provisions who were institutionalized, by eligibility group, institutional status, and State: Selected States, 1981**

| State      | Aged  |                                   |           | Blind and disabled |                                   |           |
|------------|-------|-----------------------------------|-----------|--------------------|-----------------------------------|-----------|
|            | Total | Institutional status <sup>1</sup> |           | Total              | Institutional status <sup>1</sup> |           |
|            |       | Part year                         | Full year |                    | Part year                         | Full year |
|            |       |                                   |           | Percent            |                                   |           |
| California | 18.5  | 10.3                              | 8.2       | 14.2               | 8.5                               | 5.7       |
| Georgia    | 24.4  | 8.7                               | 15.7      | 13.8               | 4.1                               | 9.7       |
| Michigan   | 39.8  | 19.9                              | 19.9      | 18.4               | 9.4                               | 9.0       |
| New York   | 26.6  | 10.7                              | 15.9      | 7.4                | 3.9                               | 3.5       |
| Tennessee  | 25.4  | 10.3                              | 15.1      | 9.0                | 3.8                               | 5.2       |

<sup>1</sup>Institutional status is defined as follows: *Part year*—Care in a long-term care facility for part but not all of an enrollee's Medicaid-eligible days in 1981. *Full year*—Care in a long-term care facility for all of an enrollee's Medicaid-eligible days in 1981.

NOTE: Fewer than 1 percent of AFDC enrollees were institutionalized.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

medical needs of one member of the case. There may be lower use of services by medically needy case members than in the average Medicaid household. Alternatively, some of the service use of medically needy cases may be omitted from Medicaid claim files.

An important factor that distinguishes the Medicaid population from other health insurance groups is the relatively high proportion of aged and disabled Medicaid enrollees who reside in long-term care institutions for part or all of a year. In Table 8, enrollees who were in long-term care institutions for part of the year and for the full year are shown separately. The highest proportion of institutionalization (39.8 percent) was for Michigan's aged population; of these, about one-half were institutionalized for part of the year and the other half for the full year. The percent of the aged population who were institutionalized in the other States ranged from 18.5 percent in California to 26.6 percent in New York. A smaller proportion of disabled Medicaid enrollees were institutionalized, the largest being 18.4 percent in Michigan. The rates of institutionalization for the AFDC population (not shown in the table) were less than 1 percent in all States.

In contrast to the Medicaid experience in the Tape-to-Tape States, 1.1 percent of the general U.S. population and 5.3 percent of the total elderly population were institutionalized in 1980 (U.S. Bureau of the Census, 1985). Thus, aged Medicaid enrollees in the Tape-to-Tape States had much higher rates of institutionalization than all elderly persons in the United States, with Michigan's rate being almost eight times as high. Most of this difference results from the high cost of nursing home care and Medicaid provisions that allow persons above the categorically needy standard to qualify because of the high charges they incurred for nursing home care. (Tennessee and Georgia used an alternative approach by which States cover institutionalized persons whose incomes are up to 300 percent of the SSI income standard.) The difference between Michigan and other States in the rate of institutionalization for the elderly is not easily

explained by differences in State programs and may reflect a regional difference in medical care use patterns.

### Trends in Medicaid expenditures

Trends in total expenditures and expenditures per enrollee person-year from 1980 to 1984 are shown in Table 9. Expenditure growth varied dramatically by State for the four States that provided data in both 1981 and 1984. In the larger States, which traditionally have more generous programs, expenditures grew slowly from 1981 to 1984, by only 1.8 percent (California) and 8.3 percent (Michigan). In contrast, the medical care component of the Consumer Price Index increased 29 percent during that period (U.S. Bureau of the Census, 1985) and national Medicaid expenditures increased 26 percent (Gornick et al., 1985). In the smaller and traditionally more restrictive States, expenditure increases were higher, 20.4 percent in Georgia and 38.0 percent in Tennessee. When growth in expenditures per person is examined, Georgia's growth is seen to be much more moderate (12.4 percent). In contrast, the Tennessee growth in expenditures per person was high (44.5 percent), suggesting growth in both utilization and expenditure levels during the period. Enrollment actually declined in Tennessee during this time period (Table 2).

In California, the largest and traditionally one of the most generous of the States, expenditures per person grew from \$1,300 to \$1,356, or only 4.3 percent in the 4-year period 1981-84. This modest increase actually reflects a substantial decrease in real-dollar terms. California implemented selective contracting for hospital care during the period and also adopted reimbursement restrictions for other Medicaid services.

Program changes appear to have had a more moderate impact on total program expenditures in Michigan than in California and have actually resulted in growth in expenditures in Georgia and Tennessee. Some of the more important program changes made in these States during the period include the following. Michigan made various changes in

**Table 9**  
**Total Medicaid expenditures and expenditures per enrollee person-year, by State and year:**  
**Selected States, 1980-84**

| Item and year                        | California | Georgia | Michigan                  | New York | Tennessee |
|--------------------------------------|------------|---------|---------------------------|----------|-----------|
| <b>Total expenditures:</b>           |            |         | <b>Amount in millions</b> |          |           |
| 1980                                 | \$3,328    | \$483   | NA                        | NA       | \$359     |
| 1981                                 | 3,420      | 549     | \$1,216                   | NA       | 392       |
| 1982                                 | 3,456      | 537     | 1,195                     | NA       | NA        |
| 1983                                 | 3,416      | 621     | 1,325                     | NA       | 472       |
| 1984                                 | 3,482      | 661     | 1,317                     | NA       | 541       |
|                                      |            |         | <b>Percent change</b>     |          |           |
| 1981-84                              | +1.8       | +20.4   | +8.3                      | NA       | +38.0     |
| <b>Expenditures per person year:</b> |            |         | <b>Amount</b>             |          |           |
| 1980                                 | \$1,296    | \$1,149 | NA                        | \$1,709  | \$1,011   |
| 1981                                 | 1,300      | 1,302   | \$1,282                   | 1,887    | 1,114     |
| 1982                                 | 1,305      | 1,276   | 1,300                     | 2,256    | NA        |
| 1983                                 | 1,330      | 1,414   | 1,400                     | NA       | 1,425     |
| 1984                                 | 1,356      | 1,463   | 1,467                     | NA       | 1,610     |
|                                      |            |         | <b>Percent change</b>     |          |           |
| 1981-84                              | +4.3       | +12.4   | +14.4                     | NA       | +44.5     |

NOTE: NA is not available.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

ambulatory care reimbursement, including the implementation of a case management program in Wayne County.<sup>1</sup> Tennessee reduced the maximum number of covered inpatient days per year for adults from 20 to 14 in 1981 but maintained the limit of 20 days for children. Georgia added coverage of first-time pregnant women in 1983. All States either moved to prospective reimbursement for hospitals or began planning such initiatives during the period. For example, Georgia phased in per-case reimbursement during 1983. Michigan and Tennessee began planning initiatives that took effect in 1985 and 1984, respectively.

### Variation in State Medicaid expenditures

One way of examining Medicaid expenditures in aggregate terms is according to broad eligibility groups: AFDC children, AFDC adults, SSI disabled, and SSI aged. The 1981 distribution by eligibility group is shown for the Tape-to-Tape States in Figure 1. AFDC enrollees accounted for less than 25 percent of total expenditures in Georgia, New York, and Tennessee. The proportions of total expenditures for AFDC enrollees were higher in Michigan (40.8 percent) and California (34.0 percent). Expenditures for the SSI-related groups dominated in all States. Of the States, Georgia had the highest percentage of Medicaid expenditures allocated to the disabled (44.3 percent) and New York had the highest proportion allocated to the aged (48.0 percent).

Medicaid expenditures have been classified according to three major service types: hospital care, long-term care, and other services. The proportional allocation of expenditures across these three broad categories in 1981 in the five Tape-to-Tape States is illustrated in Figure 2. Although expenditures in California were divided roughly equally among the

three categories, expenditures for long-term care services predominated in the other States. For example, Tennessee spent 51.6 percent of its Medicaid dollars for long-term care services. Nationally, the percentage for long-term care services was 42.4 percent in fiscal year 1981 (Ruther et al., 1986).

Expenditures per enrollee in 1981 ranged from \$1,114 in Tennessee to \$1,887 in New York. This 69-percent difference, although substantial, masks even larger differences between the States in expenditures per enrollee for selected Medicaid services and populations. In Table 10 are shown detailed expenditures per person for each type of service within eligibility groups by State for 1981. Within a given eligibility group and type of service, States vary widely in their expenditure patterns.

One advantage of the Tape-to-Tape data base over previously available Medicaid data sources is that it provides the detail that is necessary to examine the source of these expenditure variations. Within a particular eligibility group, expenditures per enrollee for a given service are determined by several factors:

- Expenditures per unit of service.
- Number of units of service per user.
- Proportion of enrollees who used the service.

The following equation relates these quantities:

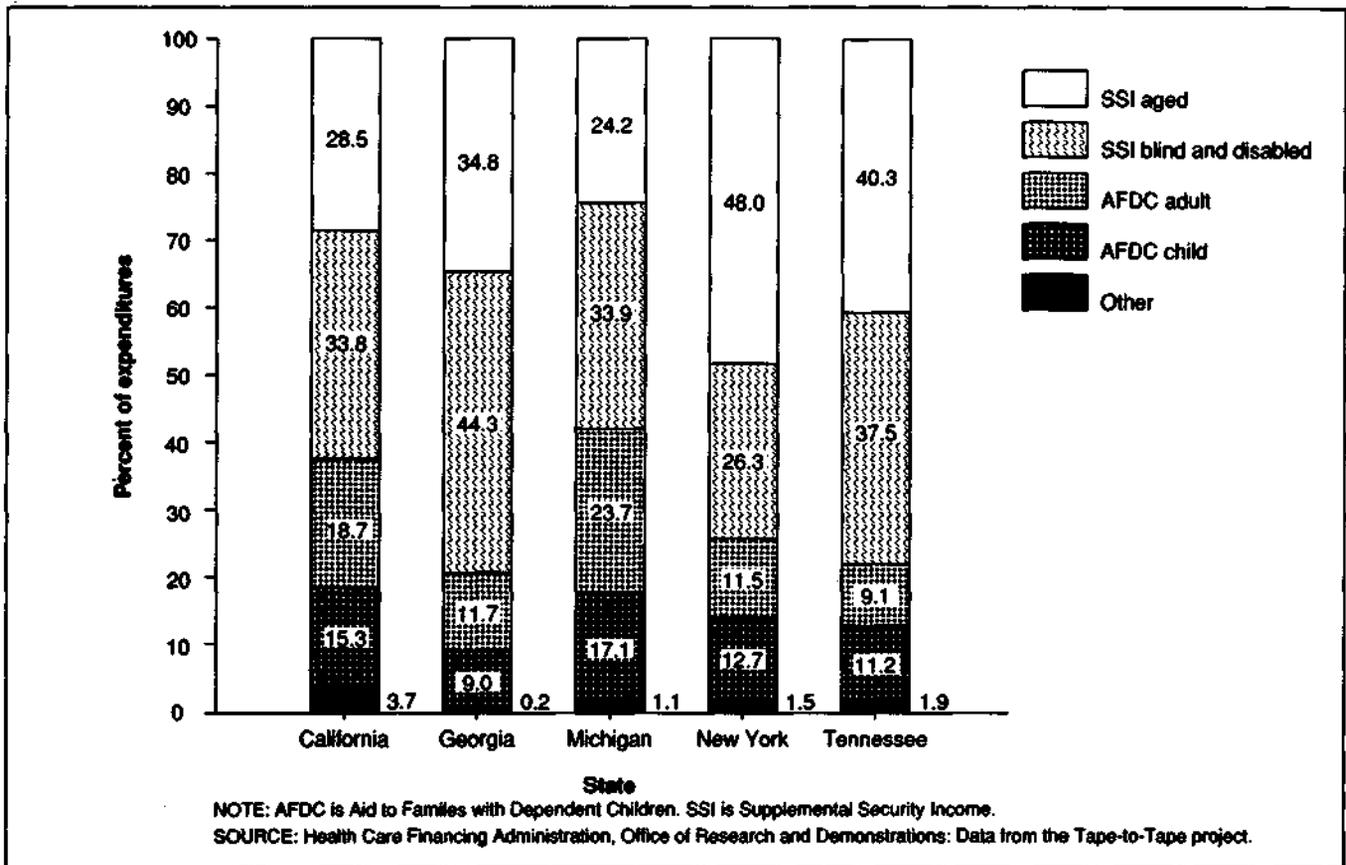
$$\text{Expenditures per enrollee} = \frac{\text{Expenditures}}{\text{Service units}} \times \frac{\text{Service units}}{\text{Users}} \times \frac{\text{Users}}{\text{Enrollees}}$$

Variations across States in Medicaid expenditures can result from variations in any of these factors or from differences in State program characteristics and other underlying factors that have an impact on these observed statistics. Data on each factor are available from the Tape-to-Tape project.

In the following sections, we discuss detailed utilization and expenditure information for four services: hospital care, long-term care, physician care, and prescription drugs. Hospital care and physician care are discussed only for the AFDC population because a large proportion of these services for SSI

<sup>1</sup>States may obtain waivers to exempt them from the requirement that services be uniformly available throughout the State, thus allowing special programs in limited geographic areas.

**Figure 1**  
**Percent distribution of Medicaid expenditures, by eligibility group and State:**  
**Selected States, 1981**



enrollees is covered by Medicare. Long-term care and prescription drugs are discussed only for the SSI population because AFDC enrollees are not heavy users of these services. Although these data are not sufficient for a complete overview of variations among the States in utilization and expenditures, they can be used to illustrate sources of differences for four of the most common services.

**Hospital care**

AFDC hospital utilization and expenditure patterns across the States in 1981 are shown in Table 11. For adults, annual expenditures per enrollee varied from \$369 (Tennessee) to \$578 (California), a 57-percent difference. For children, they varied from \$126 (Tennessee) to \$249 (New York), a 98-percent difference.

As shown in Table 11, the differences come from variations in both utilization rates and expenditures per day for hospital care. The proportion of AFDC adult enrollees receiving hospital services ranged from 17.2 percent in California to 27.0 percent in Georgia. California AFDC enrollees also had relatively short lengths of hospital stay (4.8 days for adults and 4.6 days for children). However, expenditures per day were considerably higher in California than in any other State. Another factor that resulted in higher expenditures for hospital care provided to AFDC

enrollees in California was a slightly higher rate of hospitalization per recipient. California AFDC adult recipients averaged 1.7 hospitalizations for the year, compared with 1.6 hospitalizations in other States. The result was that California spent more than any other State per AFDC adult enrollee for hospital care. The higher per-person expenditures for children in New York resulted from its higher rate of hospitalization and longer length of stay.

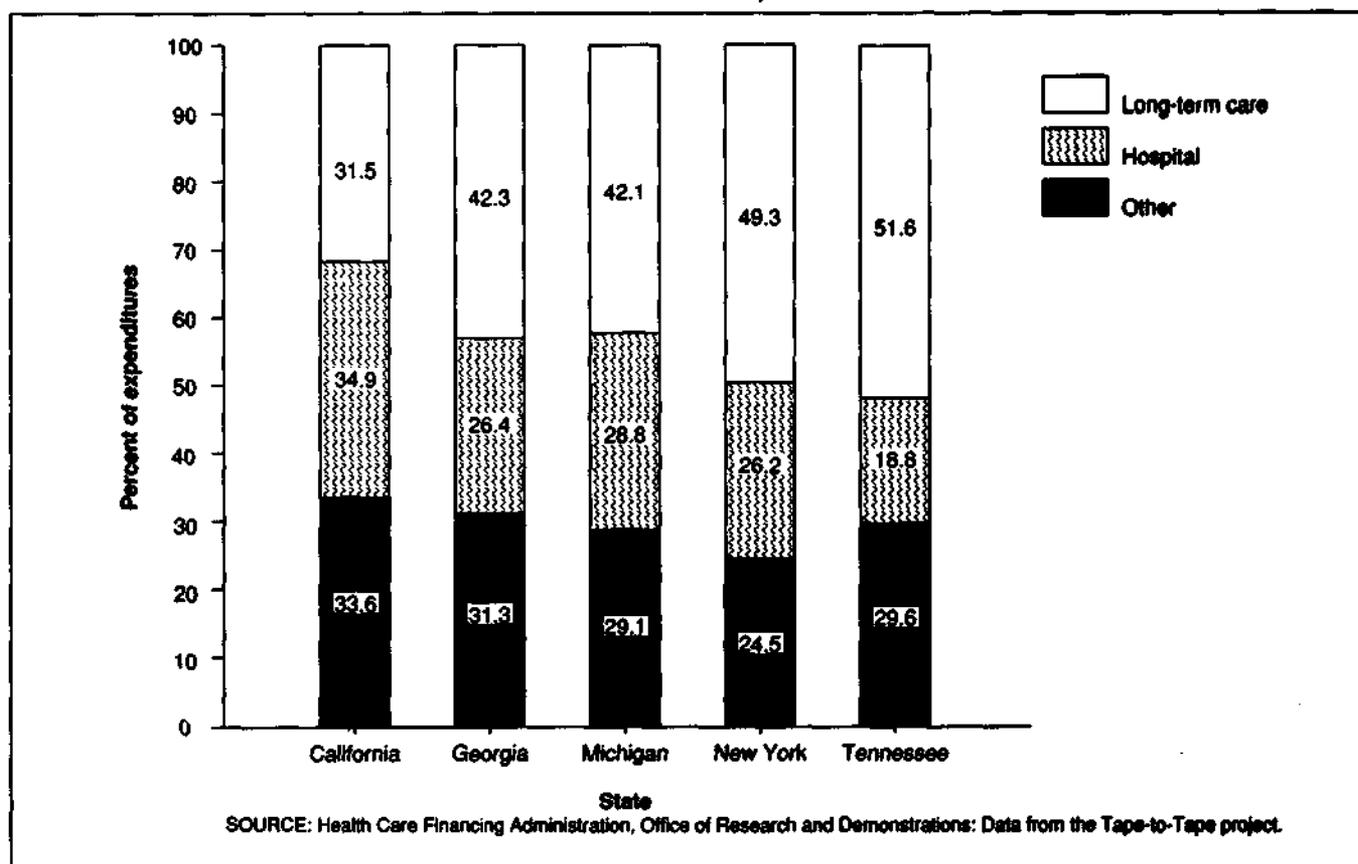
**Long-term care**

The largest proportion of total Medicaid expenditures nationally and in all Tape-to-Tape States except California was for long-term care. Almost all long-term care expenditures were for care provided to SSI enrollees. As mentioned earlier, less than 1 percent of AFDC enrollees were institutionalized in these States.

Average 1981 Medicaid long-term care expenditures per SSI enrollee in the five States are shown in Table 12. Expenditures varied widely, from \$1,428 per aged enrollee in California to \$4,937 in New York, a threefold difference. For disabled enrollees, the range was from \$835 per enrollee in Tennessee to \$2,157 in Michigan.

The main sources of these disparities were variations among States in the percent of enrollees using long-term care services and the average

**Figure 2**  
**Percent distribution of Medicaid expenditures, by type of service and State:**  
**Selected States, 1981**



expenditure per day. For example, only 18.0 percent of California's Medicaid aged used long-term care services, and the average expenditure was \$28 per day. The low percentage receiving services (compared with Michigan, for example, at 40.4 percent) and moderate expenditure per day (compared with New York, at \$57 per day) resulted in California's relatively low long-term care expenditures per aged enrollee. Although the proportion of enrollees who used long-term care was not as high in New York as in Michigan, New York spent more per enrollee because of the high rate per day.

Expenditures for the disabled also varied in both use rates and expenditures per day. In all States, expenditures per day were higher for the disabled than for the aged. Rymer, Burwell, and Madigan (1984) have shown that the disabled often use different types of facilities, for example, institutions for the mentally retarded, which cost more per day than facilities used by the aged.

Among both the aged and disabled groups, recipients of long-term care were institutionalized for most of the year, an average of more than 250 days per recipient. Using Tape-to-Tape data, Ray et al. (1987) have shown that the Medicaid institutionalized group is a mixture of people who are residents for the full year and people who are institutionalized for shorter stays.

#### Physician visits

Variations in physician visit utilization and expenditures for AFDC enrollees are shown in Table 13. These data include physician visits for all places of service, including hospitals and nursing homes. Only visit expenditures are included here; because units of service are not available for surgical procedures and ancillary services, they are excluded.

The percentage of AFDC adult enrollees with at least one physician visit varied from 56.4 percent in Tennessee to 74.3 percent in Michigan. Visit rates for children ranged from 44.4 percent in Tennessee to 65.7 percent in Michigan. Tennessee had the lowest number of visits per user (6.4 per adult and 4.3 per child). Expenditures per visit ranged from \$12 for adults and \$13 for children in New York to \$24 for adults and \$22 for children in California. California had the highest expenditure per enrollee for physician visits (\$130 per adult and \$73 per child) as a result of the higher expenditures per visit and higher levels of use.

#### Prescription drugs

The variation among four States in expenditures per SSI enrollee for prescription drugs is shown in Table 14. The variations across States are not as substantial

Table 10

Medicaid expenditures per enrollee person-year, by type of service, State, and eligibility group: Selected States, 1981

| State and eligibility group | Type of service          |          |                |           |
|-----------------------------|--------------------------|----------|----------------|-----------|
|                             | All types of service     | Hospital | Long-term care | All other |
|                             | Expenditure per enrollee |          |                |           |
| California                  | \$1,300                  | \$433    | \$380          | \$486     |
| AFDC child                  | 484                      | 207      | 5              | 272       |
| AFDC adult                  | 1,207                    | 578      | 2              | 628       |
| SSI blind and disabled      | 2,765                    | 945      | 930            | 890       |
| SSI aged                    | 2,200                    | 265      | 1,428          | 508       |
| Other                       | 979                      | 612      | 24             | 343       |
| Georgia                     | 1,302                    | 344      | 550            | 408       |
| AFDC child                  | 301                      | 127      | 0              | 174       |
| AFDC adult                  | 995                      | 561      | 0              | 434       |
| SSI blind and disabled      | 2,461                    | 760      | 968            | 733       |
| SSI aged                    | 2,080                    | 138      | 1,484          | 459       |
| Other                       | —                        | —        | —              | —         |
| Michigan                    | 1,282                    | 369      | 540            | 374       |
| AFDC child                  | 415                      | 158      | 51             | 206       |
| AFDC adult                  | 1,090                    | 539      | 22             | 529       |
| SSI blind and disabled      | 4,057                    | 1,132    | 2,157          | 768       |
| SSI aged                    | 3,836                    | 130      | 3,296          | 409       |
| Other                       | 2,245                    | 530      | 1,357          | 358       |
| New York                    | 1,887                    | 494      | 930            | 463       |
| AFDC child                  | 527                      | 249      | 11             | 267       |
| AFDC adult                  | 1,067                    | 510      | 17             | 541       |
| SSI blind and disabled      | 3,381                    | 1,228    | 1,197          | 956       |
| SSI aged                    | 6,034                    | 555      | 4,937          | 542       |
| Other                       | 601                      | 293      | 91             | 216       |
| Tennessee                   | 1,114                    | 210      | 575            | 329       |
| AFDC child                  | 318                      | 126      | 10             | 182       |
| AFDC adult                  | 749                      | 369      | 0              | 380       |
| SSI blind and disabled      | 1,716                    | 353      | 835            | 528       |
| SSI aged                    | 2,059                    | 105      | 1,612          | 343       |
| Other                       | 1,893                    | 138      | 1,445          | 311       |

NOTE: AFDC is Aid to Families with Dependent Children. SSI is Supplemental Security Income.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

Table 11

Medicaid hospital utilization and expenditures for persons enrolled through Aid to Families with Dependent Children (AFDC) provisions, by eligibility group and State: Selected States, 1981

| Eligibility group and State | Expenditure per enrollee person-year | Expenditure per day | Stays per user | Average length of stay in days | Percent of enrollees with hospital services <sup>1</sup> |
|-----------------------------|--------------------------------------|---------------------|----------------|--------------------------------|--|
| <b>AFDC adult</b>           |                                      |                     |                |                                |  |
| California                  | \$578                                | \$407               | 1.7            | 4.8                            | 17.2   |
| Georgia                     | 561                                  | 296                 | 1.6            | 4.4                            | 27.0   |
| Michigan                    | 539                                  | 313                 | 1.6            | 5.3                            | 20.4   |
| New York                    | 510                                  | 292                 | 1.5            | 5.2                            | 21.7   |
| Tennessee                   | 369                                  | 185                 | 1.6            | 5.3                            | 23.2   |
| <b>AFDC child</b>           |                                      |                     |                |                                |  |
| California                  | 207                                  | 405                 | 1.7            | 4.6                            | 6.6  |
| Georgia                     | 127                                  | 241                 | 1.5            | 4.5                            | 8.1  |
| Michigan                    | 158                                  | 286                 | 1.5            | 5.2                            | 6.9  |
| New York                    | 249                                  | 274                 | 1.6            | 5.6                            | 10.2   |
| Tennessee                   | 126                                  | 196                 | 1.5            | 4.3                            | 9.8  |

<sup>1</sup>Based on person-years.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

Table 12

**Medicaid long-term care utilization and expenditures for persons enrolled through Supplemental Security Income (SSI) provisions, by eligibility group and State: Selected States, 1981**

| Eligibility group and State   | Expenditure              |                     | Days per user | Percent of enrollees with long-term care services <sup>1</sup> |
|-------------------------------|--------------------------|---------------------|---------------|--|
|                               | per enrollee person-year | Expenditure per day |               |  |
| <b>SSI aged</b>               |                          |                     |               |  |
| California                    | \$1,428                  | \$28                | 280           | 18.0   |
| Georgia                       | 1,484                    | 20                  | 321           | 22.6   |
| Michigan                      | 3,296                    | 26                  | 315           | 40.4   |
| New York                      | 4,937                    | 57                  | 328           | 26.7   |
| Tennessee                     | 1,612                    | 22                  | 325           | 23.2   |
| <b>SSI blind and disabled</b> |                          |                     |               |  |
| California                    | 930                      | 52                  | 256           | 7.0  |
| Georgia                       | 968                      | 37                  | 324           | 8.2  |
| Michigan                      | 2,157                    | 63                  | 254           | 13.5   |
| New York <sup>2</sup>         | 1,197                    | 91                  | 248           | 5.3  |
| Tennessee                     | 835                      | 45                  | 293           | 6.4  |

<sup>1</sup>Based on person-years.

<sup>2</sup>Excludes some Office of Mental Health and Mental Retardation claims.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

as for the other three services that have been presented. (New York data are excluded because expenditures for drugs were included in the reimbursement rate for many New York nursing homes.) Tennessee had the lowest expenditures for prescription drugs for the disabled (\$196 per year), and California had the lowest expenditures for the aged (\$163 per year). The highest expenditures were in Georgia, with \$246 per disabled enrollee and \$282 per aged enrollee. The Georgia rates were highest because of higher utilization. For example, 86.6 percent of aged enrollees in Georgia had prescription drug expenditures, and the average was 39 prescriptions per user per year. All Tape-to-Tape States limited their drug formularies to selected drugs in 1981. Three States (California, Georgia, and Michigan) required small copayments for each drug.

#### Key factors affecting State differences

We have observed that, in two of the Tape-to-Tape States, Michigan and California, the growth in program expenditures from 1981 to 1984 was moderate, much lower than national growth and lower than overall medical care inflation rates. In Tennessee and Georgia, expenditure growth was closer to the national average. Substantial differences among States in the expenditure patterns within eligibility groups and service types existed in 1980. Because the more generous States (California and Michigan) had a small growth in expenditures and the more restrictive States (Georgia and Tennessee) had continued relatively high expenditure growth, it is interesting to observe any ways in which these four different States became more or less similar during the period.

Table 13

**Medicaid physician visit utilization and expenditures for persons enrolled through Aid to Families with Dependent Children (AFDC) provisions, by eligibility group and State: Selected States, 1981**

| Eligibility group and State | Expenditure              |                       | Visits per user | Percent of enrollees with physician visits <sup>1</sup> |
|-----------------------------|--------------------------|-----------------------|-----------------|---|
|                             | per enrollee person-year | Expenditure per visit |                 |   |
| <b>AFDC adult</b>           |                          |                       |                 |   |
| California                  | \$130                    | \$24                  | 7.6             | 70.7  |
| Georgia                     | 79                       | 17                    | 7.3             | 65.0  |
| Michigan                    | 90                       | 17                    | 7.0             | 74.3  |
| New York                    | 61                       | 12                    | 7.9             | 62.9  |
| Tennessee                   | 51                       | 14                    | 6.4             | 56.4  |
| <b>AFDC child</b>           |                          |                       |                 |   |
| California                  | 73                       | 22                    | 5.3             | 63.1  |
| Georgia                     | 37                       | 16                    | 4.4             | 51.9  |
| Michigan                    | 50                       | 16                    | 4.6             | 65.7  |
| New York                    | 40                       | 13                    | 5.2             | 61.1  |
| Tennessee                   | 28                       | 15                    | 4.3             | 44.4  |

<sup>1</sup>Based on person-years.

NOTE: Data are shown for physician visits for all places of service, including hospitals and nursing homes. Expenditures for surgical procedures and ancillary services are excluded.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

Some of these temporal patterns are illustrated in Table 15, in which we show trends for 1981 to 1984 in some key utilization and expenditure variables. New York is excluded because data for 1983 and 1984 were unavailable. Two measures are shown for AFDC adult hospital services, percent using services and expenditures per day; two measures for long-term care services for the aged, percent using services and expenditures per day; and two measures for AFDC child physician visits, percent with visits and expenditures per visit.

The relative ranking of States in these basic utilization and expenditure measures was remarkably stable over time. The only substantial change in State ranking was for AFDC child physician visit expenditures. In Tennessee, both the percent of children with physician visits and the expenditure per visit increased substantially. Tennessee's rank in expenditures per visit rose from fourth to second.

All States had either declines or no change in the percent of AFDC adults using hospital services, coupled with substantial increases in hospital expenditures per day. Tennessee increased expenditures per hospital day for AFDC adults by 73.7 percent, much greater growth than in the other States. All States had some increases in use of long-term care by the aged, coupled with moderate increases in expenditures per day. Changes in physician use and expenditures for AFDC children varied by State, with the greatest changes in Tennessee, as noted earlier.

These patterns suggest that, at least for these four State Medicaid programs, the flexibility allowed through OBRA and other regulatory changes has not

Table 14

**Medicaid prescription drug utilization and expenditures for persons enrolled through Supplemental Security Income (SSI) provisions, by eligibility group and State: Selected States, 1981**

| Eligibility group and State   | Expenditure           |                              | Prescriptions per user | Percent of enrollees with prescription drug services <sup>1</sup> |
|-------------------------------|-----------------------|------------------------------|------------------------|---|
|                               | per enrollee per year | Expenditure per prescription |                        |   |
| <b>SSI aged</b>               |                       |                              |                        |   |
| California                    | \$163                 | \$9                          | 21.3                   | 81.1  |
| Georgia                       | 282                   | 8                            | 39.4                   | 86.6  |
| Michigan                      | 264                   | 8                            | 40.3                   | 84.0  |
| Tennessee                     | 244                   | 8                            | 37.5                   | 81.5  |
| <b>SSI blind and disabled</b> |                       |                              |                        |   |
| California                    | 214                   | 11                           | 23.6                   | 80.3  |
| Georgia                       | 246                   | 9                            | 34.1                   | 81.0  |
| Michigan                      | 230                   | 8                            | 34.1                   | 79.5  |
| Tennessee                     | 196                   | 8                            | 32.7                   | 72.1  |

<sup>1</sup>Based on person-years.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

resulted in major changes in utilization and expenditure patterns. On the contrary, the differences among States observed in 1981 continued with minor exceptions throughout the study period.

From Tables 2 and 9, in which trends in total enrollment and expenditures are shown, we see that for three of the Tape-to-Tape States—California, Georgia, and Michigan—trends in Medicaid expenditures were determined primarily by trends in the number of Medicaid enrollees. California had no change in person-years of enrollment and only slight growth in expenditures; expenditures in Georgia grew by 20 percent from 1981 to 1984, with some growth in enrollment; and both expenditure growth and enrollment growth were moderate in Michigan. Of the four Tape-to-Tape States for which trend data were available, only Tennessee deviated from this pattern. In 1980, Tennessee had the lowest Medicaid expenditures per person (\$1,011) of the four States studied; by 1984, it had the highest rate (\$1,610). During the same period, the number of enrollees actually declined. Several factors explain the growth in expenditures per person in Tennessee. Expenditures for long-term care services dominated total expenditures to a greater extent than in the other States, and expenditure growth for this service was relatively high. Additionally, the other States implemented new strategies to contain hospital reimbursement rates, but Tennessee continued to reimburse hospitals on a retrospective fee-for-service basis throughout most of the period. Although Tennessee moved to prospective reimbursement for hospitals in 1984, prior costs were used in determining rates, so hospitals may have had an incentive to raise costs during the period in preparation for the transition to prospective reimbursement.

Table 15

**Selected Medicaid utilization and expenditure measures: Selected States, 1981-84**

| Item and year  | California     | Georgia | Michigan | Tennessee |
|--|----------------|---------|----------|-----------|
| <b>AFDC adult enrollees using hospital services:<sup>1</sup></b>     |                |         |          |           |
|  | Percent        |         |          |           |
| 1981   | 17             | 26      | 20       | 23        |
| 1982   | 16             | 25      | 19       | NA        |
| 1983   | 17             | 24      | 18       | 20        |
| 1984   | 17             | 24      | 17       | 20        |
|  | Percent change |         |          |           |
| 1981-84  | 0.0            | -7.7    | -15.0    | -13.0     |
| <b>AFDC adult expenditures per hospital day:</b>                     |                |         |          |           |
|  | Amount         |         |          |           |
| 1981   | \$410          | \$300   | \$310    | \$190     |
| 1982   | 480            | 360     | 350      | NA        |
| 1983   | 560            | 320     | 410      | 250       |
| 1984   | 515            | 350     | 460      | 330       |
|  | Percent change |         |          |           |
| 1981-84  | +25.6          | +16.7   | +48.4    | +73.7     |
| <b>SSI aged enrollees using long-term care services:<sup>1</sup></b> |                |         |          |           |
|  | Percent        |         |          |           |
| 1981   | 18             | 23      | 40       | 23        |
| 1982   | 18             | 25      | 43       | NA        |
| 1983   | 19             | 27      | 44       | 25        |
| 1984   | 19             | 27      | 44       | 26        |
|  | Percent change |         |          |           |
| 1981-84  | +5.5           | +17.4   | +10.0    | +13.0     |
| <b>SSI aged expenditures per long-term care day:</b>                 |                |         |          |           |
|  | Amount         |         |          |           |
| 1981   | \$28           | \$20    | \$26     | \$22      |
| 1982   | 27             | 20      | 28       | NA        |
| 1983   | 28             | 21      | 30       | 25        |
| 1984   | 30             | 21      | 31       | 26        |
|  | Percent change |         |          |           |
| 1981-84  | +7.1           | +5.0    | +19.2    | +18.2     |
| <b>AFDC child enrollees with physician visits:<sup>1</sup></b>       |                |         |          |           |
|  | Percent        |         |          |           |
| 1981   | 63             | 52      | 66       | 44        |
| 1982   | 64             | 52      | 65       | NA        |
| 1983   | 54             | 53      | 68       | 54        |
| 1984   | 64             | 52      | 66       | 50        |
|  | Percent change |         |          |           |
| 1981-84  | +1.6           | 0.0     | 0.0      | +13.6     |
| <b>AFDC child expenditures per physician visit:</b>                  |                |         |          |           |
|  | Amount         |         |          |           |
| 1981   | \$22           | \$16    | \$16     | \$15      |
| 1982   | 22             | 17      | 15       | NA        |
| 1983   | 21             | 17      | 15       | 18        |
| 1984   | 21             | 18      | 15       | 20        |
|  | Percent change |         |          |           |
| 1981-84  | -4.5           | +12.5   | -6.3     | +33.3     |

<sup>1</sup>Based on person-years.

NOTES: NA is not available. AFDC is Aid to Families with Dependent Children. SSI is Supplemental Security Income.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project.

## Discussion

In this article, we confirm previous Medicaid research findings that State Medicaid programs are highly diverse. The five Tape-to-Tape States differed greatly in the proportion of the poor population covered by Medicaid, the distribution of total enrollees among Medicaid eligibility groups, utilization rates for various services, and resulting levels of Medicaid expenditures.

The particular ways in which States differ are not always directly derived from obvious program differences. For example, we examined four services that were covered in all States and found that, in 1981:

- The proportion of AFDC adults using inpatient hospital services varied by 57 percent, ranging from 17.2 percent in California to 27.0 percent in Georgia.
- The proportion of the aged using long-term care services varied by 124 percent, ranging from 18.0 percent in California to 40.4 percent in Michigan.
- The proportion of AFDC children with physician visits varied by 48 percent, ranging from 44.4 percent in Tennessee to 65.7 percent in Michigan (a difference that moderated later in the study period).

More subtle State differences than are obvious from available program descriptions may explain these differences. Regional medical care practice patterns are likely to be important in such an explanation, as are the supply of medical services in each State and the underlying health care status of the State populations.

The early 1980's were a time of Medicaid program change, and the Tape-to-Tape States all modified their programs during the period. The traditionally more generous States restricted their expenditure growth, and the more restrictive States either expanded eligibility or increased reimbursement rates. For example, in California, the number of person-years of enrollment remained the same, and expenditures per person actually declined in real-dollar terms. In Georgia, both the number of enrollees and expenditures per enrollee increased. In Tennessee, expenditures per enrollee grew by 44.5 percent. At the same time, the States retained their distinctive differences in use and expenditure patterns, with the relative ranking of the States remaining the same for almost all key utilization and expenditure measures throughout the period. Hospital reimbursement rates continued to rise in spite of State efforts to modify their reimbursement approaches.

These findings indicate the continued diversity in Medicaid. Although States continue to modify their programs, most changes are incremental and do not have a major impact on basic program structure when key use and expenditure measures are used as indicators of the services provided.

## Acknowledgments

The authors are grateful to the State governments of California, Georgia, Michigan, New York, and Tennessee for their cooperation. They provided all of the data files used in the analysis, and State staff spent many hours consulting on the content of the files and reviewing outputs. Several Systemetrics staff members made important contributions. The Tape-to-Tape Project Director was Suzanne Dodds. The data files were designed and constructed by Ann Cherlow, Kay Miller, and Katherine Sredl. Marilyn Rymer provided analytical input on eligibility issues and useful comments on the draft. Statistical assistance was provided by Vanessa Nora.

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