Equity in the Medicaid Program: Changes in the Latter 1980s

E. Kathleen Adams, Ph.D.

The possibility of health care reform has helped focus attention on equity in the receipt of health care. This is a particular issue for the Medicaid program, as State variations in eligibility and payment policies have historically created inequity. This study examines equity for Medicaid beneficiaries and State taxpayers during the latter 1980s. Findings indicate that federally mandated expansions significantly increased equity in the coverage of the poor, but inequality in real resources per enrollee remained significant. Although equity improved from 1984 through 1991, the increased use of provider-specific tax and voluntary donation (T&D) programs by traditionally high-spending States played an important role in the 1992 figures.

INTRODUCTION

Equity for recipients, as well as taxpayers, has been a desired outcome of the Medicaid program, as evidenced by its legislative history (U.S. General Accounting Office, 1983). Equity for beneficiaries would mean that similarly disadvantaged persons would be treated similarly across the States in terms of Medicaid benefits and eligibility. Equity for taxpayers would mean that persons with comparable incomes or wealth would bear comparable tax burdens. To help achieve equity, the Federal Government makes contributions toward total expenditures in each State that are inversely related to a State's per capita income, relative to the national average.[1] Poorer States have a higher Federal share; Mississippi had the highest in 1992 (80 percent), and 11 States and the District of Columbia received the minimum matching amount (50 percent). The objective of this "matching" was to increase the spending in poor States beyond what they would otherwise spend.

In spite of efforts to achieve equity, earlier evidence has suggested that equity has not been achieved for either beneficiaries or taxpayers. Poor people have found that their eligibility for Medicaid and their access to mainstream medicine through this program vary significantly from State to State. That is, eligibility and service benefits, determined largely by State residence, have been found to differ substantially (Holahan and Cohen, 1986; Reinhardt, 1985). Although the Federal formula has been sufficient to bring about a more equitable spending pattern than would otherwise prevail, inequities persist (Holahan and Cohen, 1986; Grannemann and Pauly, 1983; U.S. General Accounting Office, 1983, 1990). Variations in levels of Medicaid spending per enrollee have been found to be strongly related to State income, and higher income States have been found to spend a larger portion of income on Medicaid (Holahan and Cohen, 1986).

[1]The matching formula that determines the Federal share is: Federal matching rate $= 1 - 0.45 [(\text{State per capita income})/(\text{U.S. per capita income})]^2$. The Federal matching rate is further constrained to be between 0.50 and 0.83.

Much has changed during the latter part of the 1980s and early 1990s that warrants reconsideration of the equity in the Medicaid program. Major changes include mandated expansions in eligibility for children and pregnant women; support of the Boren amendment (requiring States to pay for the costs of efficient providers); and T&D programs that have significantly increased the total revenues available to States for covering the poor. Because of these factors, the recession, and continued medical price inflation, the growth rate of Medicaid expenditures has been significantly higher in recent years, almost double that observed during the 1980s (Holahan et al., 1992). Thus, the escalation of Medicaid expenditures as well as the potential of continued inequities across States pose major policy issues.

This study uses data for 1984, 1991, and 1992 to examine changes in the equity of the Medicaid program over this time span. Three indicators of equity are analyzed: (1) the extent of Medicaid coverage of the poor; (2) the variation in Medicaid expenditures per poor person and per enrollee; and (3) the average tax burden imposed on States to finance their Medicaid programs. Patterns in both nominal and real expenditures (adjusted for medical price variation) are examined. Throughout the analysis, the impact of T&D programs on financing and equity are given special consideration.

DATA AND METHODS

The data used for this study are a combination of data from HCFA Form-2082 and HCFA Form-64.[2] These data have been edited extensively by the Urban Institute under a grant provided by the Robert Wood Johnson Foundation, in order to make them internally consistent and more readily usable for research purposes. The HCFA

Form-2082 data provide information on expenditures by service category and eligibility group. Yet these data are often unreliable in that components do not sum to reported totals, trends appear unrealistic, etc. (Ku, Ellwood, and Klemm, 1990). The data from HCFA Form-64 are reliable in terms of overall expenditures, because they are used for determining the Federal matching amounts, but these data do not provide the detailed service and eligibility breakdowns reflected in HCFA Form-2082. Under the earlier study, staff at the Urban Institute used these two data sources to create a more reliable source of data on Medicaid spending for the 1984-92 period. These data were used to explore the determinants of State Medicaid policies, enrollment levels, and spending for this period in more detail (Wade, Adams, and Berg, 1994).

Also included in the broader study (Wade, Adams, and Berg, 1994) was the development of a State-specific medical price index (MPI). This measure was derived by combining the medical care component of the Consumer Price Index published for certain metropolitan statistical areas with data on the wages of health care workers, available by State from the Bureau of Labor Statistics. A full explanation of the derivation of the MPI is provided elsewhere (Wade, Adams, and Berg, 1994). It provides a rough measure of the variation in the costs of purchasing health care services across States from 1984-92 and allows for the adjustment of nominal expenditures to better reflect

[2]HCFA Form-2082, the Statistical Report on Medical Care: Eligibles, Recipients, Payments, and Services, contains data on Medicaid recipients, enrollees, and expenditures. Data are classified by type of medical service, enrollee maintenance assistance status, and basis of eligibility. HCFA Form-64, the Quarterly Medicaid Statement of Expenditures for the Medical Assistance Program, reports expenditures by type of medical service. The Urban Institute has developed a crosswalk between the two data sets.

equity in real resources available across States. Note that this index does not account for variation in the quality of Medicaid services across States, which affects the ability to measure true differences in costs.

Analysis of the role of special revenue programs, including State T&D programs, is included in this article. These programs involve the taxation of providers, usually hospitals, or the receipt of voluntary donations from providers, which the State then uses as a source for its share of spending to generate Federal matching revenues. A full discussion of these programs is included in a recent summary of changes in the Medicaid program (Rowland, Feder, and Salganicoff, 1993). The providers have been generally held harmless by the States (Coughlin, Ku, and Holahan, 1994), as the tax or donation was subsequently returned to them through reimbursements, including actual increases in payments made to disproportionate-share hospitals in the form of higher rates or other special payments. In many instances, these payments were made for charity patients who were not actually enrolled in Medicaid. In short, the States obtained higher Federal aid than they would have otherwise, and they used the payments to defray the hospital expenses of serving the uninsured within their States' boundaries. T&D programs were initiated by Tennessee and West Virginia in response to fiscal concerns and spread rapidly to other States. The amounts involved in these programs grew dramatically from 1991 to 1992, as States implemented new programs that could then be grandfathered in until 1995;[3] by fiscal year 1992, these programs had grown to more than $9 billion. Given their potential impact on the equity measures used in this article, data on each State's program, gathered by HCFA for recent years and via phone survey for earlier years, were used to adjust total expenditures. As these revenues do not constitute net additions to State-only spending, the amounts were subtracted from State expenditures in several parts of the analysis.

To measure changes in equity, data on mean expenditures, the coefficient of variation in expenditures, and the gap between the 90th and 10th percentile of State expenditures are presented by major Medicaid enrollment groups. The coefficient of variation is a summary statistic that provides an overall measure of the dispersion in the distribution relative to its mean. Algebraically, it equals the standard deviation divided by the mean. If this coefficient equals zero, there is no dispersion; if it equals 100 percent, the standard deviation of the distribution equals the mean, indicating a high degree of inequality. The gap in expenditures is used to provide additional information on dispersion and is simply a measure of the range in spending that is not reflective of extreme outliers.

Data for 1984, 1991, and 1992 are provided in most of the tables. The 1984-91 data illustrate changes taking place in the latter part of the decade, partly as a result of the mandated expansions. Given the rapid increase in Medicaid spending that began to take place in the late 1980s and early 1990s, it is illustrative to compare the patterns found in 1991 to the most current data available, 1992. This comparison also highlights the impact of the T&D programs on equity measures.

Measure	1984	1991	1992
Ratio of Enrollees to Poor			
Mean	0.71	0.90	0.96
Coefficient of Variation (Percent)	38.1	27.3	21.7
Gap (90th-10th Percentile)	0.76	0.56	0.54
Ratio of Recipients to Poor			
Mean	0.57	0.76	0.83
Coefficient of Variation (Percent)	37.4	27.5	23.0
Gap (90th-10th Percentile)	0.60	0.45	0.46
Real Expenditures[1] per Poor Person			
Mean Amount in Dollars	$989	$1,519	$1,791
Coefficient of Variation (Percent)	53.4	44.2	47.9
Gap (90th-10th Percentile)	$1,375	$1,753	$2,200

[1]Real expenditures are derived by dividing actual expenditures by the State-specific medical price index described in the text.

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

Given the recent changes in Medicaid at the State and Federal levels, we expected to find improved equity in the coverage of the poor, and given the observed increase in national expenditures, higher average tax burdens. With regard to State patterns, we expected the impact of the mandates to fall more heavily on those States that had less generous programs historically and those with larger poor populations. This would apply to lower income States, many of which are Southern and Mountain States, where eligibility policies have been less liberal. Thus, we expected to see State coverage of the poor and spending as a percentage of income to increase in the Southern and Mountain States. We expected less change in the Northeastern States, which generally are higher income and have historically offered broader coverage. We also expected to see relative increases in the share of Federal aid for Medicaid spending going to the Southern and Mountain States by 1992.

FINDINGS

Coverage of Poor

The mandated expansions in Medicaid eligibility during the latter 1980s have had a significant impact on equity in the Medicaid program, as measured by the ratio of enrollees to poor persons in each State. The data in Table 1 show that equity improved (from 71 percent in 1984 to 90 percent in 1991, and to 96 percent by 1992) as State Medicaid programs, on average, increased the ratio of persons covered (enrolled) to persons with incomes below the Federal poverty level. The equity in coverage across States, as evidenced by the coefficient of variation and the difference in the ratio of persons covered to persons in poverty at the 90th and 10th percentiles of State values, also shows improvement during the 1984-92 period.

These high ratios do not necessarily suggest that States are covering a higher percentage of persons with low income through their Aid to Families with Dependent Children (AFDC) payment standards or covering them on an ongoing basis. The potentially eligible population, and hence the number of Medicaid enrollees, can exceed the number of persons in poverty for several reasons. First, many States have programs for the medically needy that temporarily qualify higher income persons for Medicaid as a result of high medical expenses. Second, poverty

counts are based on an annual income measure, but persons may be enrolled in Medicaid for as little as 1 month. Third, the mandated expansion of Medicaid eligibility to pregnant women and children in families with incomes up to 133 percent of the poverty level and the voluntary expansion to higher income levels in many States during the latter 1980s is another reason why these ratios may exceed 100 percent. Finally, poverty counts do not include the institutionalized, but Medicaid data on enrollees do include these persons, some of whom have incomes above the poverty level but cannot cover the costs of nursing home care.

Although a large portion of the increase in coverage of the poor occurred between 1984 and 1991, coverage rates improved significantly from 1991 to 1992, as federally mandated expansions, including those for coverage of pregnant women and children, continued to be implemented. States moved to the mandated 133-percent-of-poverty level in late 1990, and a few expanded to higher levels in 1991. It may also be that the "Zebley" decision[4] continued to have an effect on Medicaid enrollments as parents became aware of these new criteria.

Although the data in Table 1 do not provide a breakdown of the coverage of the poor by age, other studies have clearly shown that the mandates have improved the equity of coverage among non-aged adults and children. In a recent study, the coefficient of variation of Medicaid-covered adults and children was reported to have fallen by one-third from 1984 to 1991

(Coughlin, Ku, and Holahan, 1994). Corresponding evidence on the numbers of uninsured children showed that this number fell by 400,000 to 11.8 million in 1990; the rolls of Medicaid children increased, while the numbers of privately insured children dropped (Zimmerman, 1993).

Other data in Table 1 indicate that the ratio of the poor receiving services through Medicaid increased from 57 percent in 1984 to 83 percent in 1992. Thus, there was also an increase in the number of recipients per poor person over the study period and a general improvement in the equity of this measure across States. It is interesting to look at recipients, as persons can be enrolled in Medicaid and yet not receive services (because they do not need services or because of barriers to access).

Another measure of equity, the dispersion in real Medicaid expenditures for the poor population within each State, is shown in the third block of data in Table 1. These data indicate that the level of real resources per poor person increased from a mean of $989 per State in 1984 to $1,791 in 1992 and that the coefficient of variation in this measure declined by a little more than 5 percentage points from 1984 to 1992. This is consistent with the increased equity in the coverage of the poor population covered, as already mentioned. As we see later, there were relatively greater increases in coverage made by lower income States that have relatively greater poor populations living within their State boundaries. The gap across States (between the 90th and 10th percentiles) in real spending per poor person widened, however, from 1984 to 1991 as well as from 1991 to 1992; it equaled $2,200 by 1992. Thus, although there have been improvements in equity during the study period, the increased enrollment of poor persons in Medicaid still does not mean that they receive equal real expenditures across the States.

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[4]This decision retroactively changed the eligibility criteria for Supplemental Security Income (SSI) for children and consequently, for Medicaid coverage. Since 1990, rather than using a specified list of impairments for qualifying children, States must consider a child's "functional ability to perform age-appropriate daily living activities and behave in an age-appropriate manner" (Ford and Schwamm, 1992).

Table 2
Ratio of Enrollees to Persons in Poverty, by State and Region: 1984 and 1992

Region and State	1984 Ratio	1984 Rank	1992 Ratio	1992 Rank
U.S. Average	0.71	—	0.96	—
New England				
Connecticut	1.14	6	1.10	11
Maine	0.91	11	1.11	10
Massachusetts	1.17	5	1.32	4
New Hampshire	0.72	21	0.79	40
Rhode Island	1.19	3	1.54	1
Vermont	0.99	9	1.37	2
Middle Atlantic				
New Jersey	0.85	15	1.02	18
New York	0.90	12	1.08	13
Pennsylvania	0.73	20	1.06	15
East North Central				
Illinois	0.71	22	0.89	28
Indiana	0.48	38	0.81	39
Michigan	0.82	16	1.09	12
Ohio	0.80	17	1.17	8
Wisconsin	1.09	7	1.12	9
West North Central				
Iowa	0.60	28	0.93	25
Kansas	0.76	19	0.89	29
Minnesota	1.04	8	0.90	26
Missouri	0.63	27	0.81	38
Nebraska	0.48	39	0.97	22
North Dakota	0.40	47	0.90	27
South Dakota	0.41	43	0.71	45
South Atlantic				
Delaware	0.94	10	1.25	5
Florida	0.40	46	0.86	31
Georgia	0.56	33	0.84	35
Maryland	1.23	2	0.94	23
North Carolina	0.47	40	0.84	34
South Carolina	0.52	36	0.69	46
Virginia	0.64	26	1.04	17
West Virginia	0.64	24	0.97	21
East South Central				
Alabama	0.59	31	0.76	42
Kentucky	0.77	18	0.88	30
Mississippi	0.56	32	0.81	37
Tennessee	0.51	37	1.04	16
West South Central				
Arkansas	0.41	44	0.85	33
Louisiana	0.52	35	0.72	44
Oklahoma	0.69	23	0.69	47
Texas	0.38	48	0.79	41
Mountain				
Colorado	0.88	13	0.93	24
Idaho	0.28	49	0.63	48
Montana	0.60	29	0.82	36
Nevada	0.41	45	0.53	49
New Mexico	0.46	41	0.74	43
Utah	0.59	30	1.08	14
Wyoming	0.42	42	1.00	19
Pacific				
Alaska	0.64	25	1.36	3
California	1.43	1	1.23	6
Hawaii	1.19	4	0.86	32
Oregon	0.54	34	0.99	20
Washington	0.85	14	1.21	7

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

Table 3

Variation in Medicaid Nominal, Net Nominal, and Real Dollar Expenditures per Enrollee: 1984-92

Measure	1984	1991	1992
Nominal[1] Expenditures per Enrollee			
Mean	$1,451	$2,827	$3,453
Coefficient of Variation (Percent)	31.3	35.2	53.2
Expenditure Gap (90th-10th Percentile)	$1,326	$2,641	$2,887
Net Nominal[2] Expenditures per Enrollee			
Mean	$1,451	$2,753	$3,158
Coefficient of Variation (Percent)	31.3	33.4	40.4
Expenditure Gap (90th-10th Percentile)	$1,326	$2,561	$2,367
Real[3] Expenditures per Enrollee			
Mean	$1,381	$1,683	$1,927
Coefficient of Variation (Percent)	30.9	30.9	46.9
Expenditure Gap (90th-10th Percentile)	$1,248	$1,342	$1,317

[1]Nominal expenditures are the actual expenditures for each State and year.
[2]Net nominal expenditures are derived by subtracting the amount of provider tax and donation revenues raised by the State from nominal (or actual) expenditures.
[3]Real expenditures are derived by dividing actual expenditures by the medical price index described in the text.

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

Data in Table 2 present the ratio of poor covered in each State in 1984 and 1992 and the States' relative ranking. As these data show, the overall improvement in equity reflects the expansion of coverage in States with traditionally lower coverage as well as reductions in some States with traditionally high coverage. In California, for example, the ratio of Medicaid enrollees to the poor equaled 143 percent in 1984 but only 123 percent in 1992. Almost all of the Southern and Mountain[5] States made improvements in the ratio of their poor population covered by Medicaid. Florida, Tennessee, Arkansas, Texas, Idaho, and Wyoming more than doubled the ratio of the poor population covered by their Medicaid programs over this time. However, only 4 out of the 23 States in the Southern and Mountain regions—Virginia, Tennessee, Utah, and Wyoming—increased coverage sufficiently to bring them into the top half of the States in terms of the coverage of the poor within their State boundaries during this period.

[5]Southern States are those included in the South Atlantic, East South Central, and West South Central Regions as shown in Table 2. Mountain States include those in the Mountain States Region only.

Despite these changes, the composition of the top 10 States in terms of Medicaid coverage remained quite similar in that 6 of the 10 States were the same; only 4 States dropped from this group: Connecticut, Minnesota, Maryland, and Hawaii. There was somewhat more change by 1992 in terms of the States that were in the lowest decile of coverage of the poor; five of these States moved out of the lowest ranking by 1992: North Dakota, North Carolina, Arkansas, Wyoming, and Florida. Overall, the stability of the patterns in State ranking for expenditures (shown later) and coverage of the poor indicates that the States differ on characteristics that, over the long term, continue to influence Medicaid coverage and spending decisions in a systematic way.

EQUITY IN EXPENDITURES

Data in Table 3 present the overall results for three measures of expenditures per enrollee: nominal (not adjusted by MPI) dollars, dollars net of provider taxes or donations, and real (adjusted by MPI) dollars inclusive of provider taxes or

donations. The first panel of data indicates that the overall dispersion in spending per enrollee has actually increased from 1984 and 1991 to 1992. The coefficient of variation in 1984 equaled 31 percent and increased somewhat to 35 percent in 1991. This measure of the dispersion in spending increased to 53 percent, however, by 1992, indicating a major change in State spending patterns in 1 year. The actual dollar gap, the difference between the 90th and 10th percentiles, is illustrative of the increase in disparity between the high- and low-spending States. This gap widened from $1,326 in 1984 to $2,641 per enrollee in 1991, almost a 100-percent increase; by 1992 the gap was $2,887. Because the upper and lower deciles include only five States each, outliers within either group can affect these values. In 1992 in particular, several States appeared to have very high expenditures.

One of the reasons that State Medicaid spending appears so high is the use of T&D programs that were, as discussed earlier, used to increase revenues from the Federal Government via matching contributions. Depending on which States are using these programs and to what extent, they could affect equity patterns in either direction. To gauge the effect of these T&D schemes on the changes seen in spending patterns from 1984 to 1992, the second panel of data in Table 3 is net of the dollar amounts each State has raised under T&D programs. As these data show, the exclusion of these revenues reduces mean expenditures per enrollee by almost $100 in 1991 and almost $300 in 1992. Changes in the equity measures also differ; the coefficient of variation indicates that equity declines from 1984 to 1992, but not by nearly as much as reflected in the expenditures inclusive of these special revenues. As seen in this section, spending variations and, therefore, changes in the pattern of equity

are related to the T&D programs as well as variation in the costs of purchasing medical services across States.

When total (inclusive of provider taxes or donations) expenditures per enrollee are deflated by the State-specific MPI discussed earlier, quite a different pattern emerges, as shown in the last panel of data in Table 3. The equity of expenditures, measured in real dollars, has effectively not changed from 1984 to 1991. The coefficient of variation equaled 31.9 percent in 1984 and remained that in 1991. Moreover, the gap in real expenditures per enrollee increased only somewhat, by 8 percent, from $1,248 to $1,342; this lower percentage growth reflects that deflating expenditures by our index controls not only for variations in relative medical prices (all medical prices, not just those within Medicaid programs) across States but also their growth over time. These findings suggest that the relative costs of purchasing medical services across States is an important determinant of expenditure variations and should be considered in future analyses. A recent study found medical price inflation to be the most important single factor accounting for Medicaid expenditure growth from 1988-91 (Feder et al., 1992). The increase in the coefficient of variation for real expenditures per enrollee from 1991 to 1992 is striking, however. Although this might be indicative of an increase in disparity in this 1-year period, as noted, the differential use of T&D programs in this year and their use for non-Medicaid persons mitigate this interpretation.

In data not shown, we looked further at the role of T&D programs by measuring equity changes in real net (of provider taxes or donations) expenditures per enrollee. These data indicate that the coefficient of variation actually declined slightly from 1984 to 1991 (to 30 percent in 1991)

but climbed again in 1992 (to 35 percent). Thus, using all measures, equity in resources per enrollee had eroded by 1992. The importance of these patterns of change in real net expenditures is that they highlight the role of the T&D programs and the change in States' use of them between 1991 and 1992. The increase in the equity of real net spending by 1991 likely reflects the expansion of Medicaid programs in many Southern, traditionally low-spending States, and part of this expansion was funded by the increased Federal aid from T&D programs. This changed by 1992, however. Whereas 5 of the 10 largest provider T&D programs were in Southern States in 1991, by 1992 only 2 were. Larger Northeastern States (New York, New Jersey, and New Hampshire), which were traditionally higher spending States, significantly increased their use of these programs between 1991 and 1992.

In summary, the higher spending growth rate expected for the Southern and Mountain States took place during the study period for many in the first but not the second group of States. Still, the growth that took place was not sufficient to substantially alter the composition of the highest spenders (per enrollee) on Medicaid even though it did move three Southern States out of the lowest spending group. Although the mandates did increase the spending and, as seen later, the tax burdens in many Southern States, other factors that affect spending variation also played a role. These factors include variation in the needs of the States' poor population, fiscal resources available, political preferences, eligibility policies, provider payment levels, provider supply and practice patterns, etc. These factors appear to affect State spending in a systematic fashion over time, as most of the States that were high-spending in 1984 also were in 1992.

Expenditures by Enrollee Group

Global measures of equity cannot readily reflect the impact of changes on selected groups within the Medicaid program. Medicaid was designed to target certain segments of the poor population—the aged, the disabled, dependent children—whose health and service needs vary significantly. During the latter part of the 1980s, there appeared to be a shift in the focus of Medicaid toward more coverage of women and children than had existed in the first part of the 1980s. Other studies have noted the change (increase) in relative expenditure growth for women and children versus the aged and the disabled in the latter part of the decade (Holahan et al., 1992; Reilly, Clauser, and Baugh, 1990), even though expenditures for the aged and disabled dominate the total amount of spending. In this section, equity in spending patterns for these major enrollment groups is considered in real dollar terms.

The major policy changes affecting adult non-aged enrollees were the expansions of coverage for pregnant women. Beginning with the Medicare Catastrophic Coverage Act (MCCA) of 1988, States were mandated to increase the income level at which pregnant women were covered. This act mandated coverage for households with incomes of less than 75 percent of the Federal poverty level, but the Omnibus Budget Reconciliation Act (OBRA) of 1989 increased this coverage threshold to 133 percent. Although these policies resulted in greater equity in coverage, it was unclear how equity in spending per enrollee would be altered. If the States changed policies regarding acute-care service coverage and/or payment, this could result in changes in the expenditures seen for this enrollee group, because they use predominantly acute-care services. It may also be that the mandated expansions have made

Table 4

Real Expenditures[1] per Enrollee, by Major Enrollment Group: 1984, 1991, and 1992

Enrollment Group and Measure	1984	1991	1992	Percent Increase 1984-92
All Enrollees				
Mean	$1,381	$1,683	$1,927	40
Coefficient of Variation (Percent)	30.9	30.9	46.9	—
Expenditure Gap (90th-10th Percentile)	$1,248	$1,342	$1,317	6
Adult Enrollees				
Mean	$717	$962	$1,501	109
Coefficient of Variation (Percent)	24.6	29.4	144.5	—
Expenditure Gap (90th-10th Percentile)	$476	$756	$1,145	140
Child Enrollees				
Mean	$353	$530	$669	90
Coefficient of Variation (Percent)	31.3	31.3	65.3	—
Expenditure Gap (90th-10th Percentile)	$238	$426	$548	130
Aged Enrollees				
Mean	$4,071	$4,783	$5,144	26
Coefficient of Variation (Percent)	40.2	35.3	35.9	—
Expenditure Gap (90th-10th Percentile)	$3,785	$4,508	$4,458	18
Blind and Disabled Enrollees				
Mean	$3,977	$4,620	$5,127	29
Coefficient of Variation (Percent)	38.2	35.9	51.3	—
Expenditure Gap (90th-10th Percentile)	$3,917	$5,058	$4,600	17

[1]Real expenditures are derived by dividing actual expenditures by the medical price index described in the text.

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

the population of non-aged adults enrolled in Medicaid more homogeneous in terms of income (and perhaps health status) across the States, leading to more similar expenditures, measured in real dollar terms. Data in Table 4 indicate, however, that the dispersion in expenditures per non-aged adult increased somewhat from 1984 to 1991. (T&D revenues were not subtracted here because there is no clear way to allocate them across enrollee groups.) The coefficient of variation and the gap in expenditures increased during the study period; the latter increased from $476 in 1984 to $756 in 1991, measured in real dollars. The change from 1991 to 1992 is more reflective of the increase in States' use of T&D programs than real changes in Medicaid spending per adult. Given that the States used these programs in part to increase payment rates to hospitals, and adults are greater users of acute

hospital services, the 1992 data are particularly skewed for non-aged adults.[6]

Major policy changes have also taken place for children during the latter part of the 1980s. The congressional mandates in 1988 and 1989 requiring increased coverage of pregnant women also applied to children (only up to 6 years of age for the 133-percent poverty coverage). In addition, OBRA 1990 required States to annually phase in coverage of children up to 19 years of age in households with incomes less than 100 percent of the poverty level. Changes in provisions related to pediatric fees and early and periodic screening, diagnosis, and treatment (EPSDT) services should have increased spending per child in those States with previously restrictive service coverage and, hypothetically, should have increased equity in real benefits per child.

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[6]The major expenses for non-aged adults in acute-care settings are for childbirth and related expenditures.

The data on real expenditures per child enrollee, however, indicate that these policy changes did not have such effects. There is no change in the coefficient of variation, and the gap in real expenditures across high- and low-spending States widened by more than 70 percent, to $426. Note that although many States have reportedly increased their allowed fees in the latter part of the 1980s, policies mandated under OBRA 1989 regarding these fees and EPSDT services may not have been fully implemented by 1991. Again, the dramatic changes in equity from 1991 to 1992 likely reflect the effect of the T&D programs rather than real changes in State spending on Medicaid children.

Policy changes that affect elderly Medicaid enrollees were also included in legislation passed in the latter part of the decade. The MCCA required States to pay Medicare copayments and deductibles for the near-poor elderly or qualified Medicare beneficiaries (with incomes of up to 100 percent of the poverty level). There does appear to be improved equity in the spending patterns of States for aged Medicaid enrollees, as shown in Table 4. The coefficient of variation for expenditures for the aged dropped from 40 percent to 35 percent, based on real dollar expenditures, from 1984 to 1991. This appears to be related to an improvement in the equity of acute-care expenditures for the aged rather than long-term care (Coughlin, Ku, and Holahan, 1994), and surprisingly, these patterns remained for 1992.

Another costly group for the Medicaid program is the blind and disabled. One policy change directed toward this group is referred to as the Zebley decision, discussed earlier. Again, although there is increased enrollment as a result of this decision, there may or may not be a change in the equity of spending per disabled enrollee across States. If the pool of new enrollees in States with greater enrollments increases the similarity of Medicaid disabled populations across States, or other State policy changes take place, then there may be changes in such equity. The data in Table 4 indicate a slight improvement in spending equity by 1991, based on the coefficient of variation. The gap in real spending across States grew to $5,058 in 1991 but dropped in 1992 while, again, the overall disparity increased.

The foregoing analysis indicates that disparities remain across States in per enrollee expenditures for all major enrollment groups. Slight improvements in equity for the aged and disabled by 1991 were counterbalanced by a slight erosion in the equity of spending for adults and virtually no change for children, measured in real dollar terms. The significantly increased use of T&D programs by 1992 makes the analysis by enrollment group difficult for that year.

TAX BURDENS

The corollary to equity for recipients of Medicaid services is equity for the taxpayers in each State.[7] Given the disparity in the fiscal capacity of States, poor States, which are in greater need of services and yet have low incomes, often have fairly high tax burdens relative to the national average (Advisory Commission on Intergovernmental Relations, 1990), while reaching a smaller percentage of their poor

[7]We must be careful to distinguish the concept of equity used here from its more traditional use, which is in reference to individual taxpayer equity (Musgrave and Musgrave, 1989). Traditionally, for example, horizontal equity is concerned with treating those individuals with similar incomes, or net worth, similarly. Only a policy that affects individuals' after-tax income can achieve such equity. Here, we are discussing the equity of the average tax burden across States, even though there is ultimately variation in this burden within States as a result of variation in individuals' incomes.

populations through their Medicaid programs. The role of the Medicaid matching formula is to provide some measure of equity in spending and average tax burdens across States by paying more of the total expense in poorer States through Federal revenues. Although the formula used to provide Federal matching funds for State expenditures is inversely related to per capita income in the States, it has been faulted for not using a broad enough measure of fiscal capacity and not including a measure of need (e.g., percent poor) (U.S. General Accounting Office, 1990). Other reports have noted that the relationship between Federal aid and the fiscal capacity measure is not strong enough (U.S. General Accounting Office, 1983); even with their more generous matching rates, poorer States would have tax rates that are multiples of those in less poor States if they were able to raise a sufficient amount of funds to equalize their Medicaid spending to that of other States. (We note that these studies usually rely on expenditures unadjusted for differences in medical costs, which, as indicated earlier, are an important part of the variation in spending across States.)

As noted earlier, high-income States tended to spend more on Medicaid as a percentage of income than did low-income States in 1984. One question was whether this pattern had changed over the study period. To assess what impact the changes in coverage and spending have had on the tax burdens across the States, State-funded Medicaid expenses[8] as a percent of personal income (minus AFDC transfers) are shown in Table 5.[9] On average, the tax burden measured in this fashion increased from 0.4 percent of personal income in 1984 to 0.8 percent in 1992. In general, the higher income States

devoted a larger portion of income to funding Medicaid, although there are several States in the top and bottom deciles of median family income with similar tax efforts based on the 1992 data. New York was no longer the highest in 1992 in terms of its tax burden, but appears to have been replaced by New Hampshire (based on the data in Table 5). There were also significant increases in the proportion of income spent on Medicaid for many of the Southern States (those in the South Atlantic and East and West South Central Regions). It appears that the increases in coverage of the poor discussed earlier led to increases in the percentage of income used to finance Medicaid services in many of these States; 10 of the 16 Southern States' tax burdens either doubled or tripled from 1984 to 1992.

However, these increased tax burdens must be considered in light of the T&D programs. It can be argued that these revenues are not part of the States' tax burden per se, as they are placed on selected providers with the implicit understanding that most of the tax or donation will be returned to the provider. As shown in Table 5, excluding the T&D revenues causes shifts in the ranking of the States by their tax burden for Medicaid services. When the tax burden is measured net of these revenues, the 10 States with the highest tax burdens in 1992 change; New Hampshire and New Jersey drop out

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[8]State-funded expenditures are estimated by subtracting Federal Medicaid aid paid to States. For example, the 1991 data are reported in U.S. Bureau of the Census (1992).

[9]A refinement to the analysis would be to consider the percentage of total taxable revenues (TTR), a broader measure of fiscal capacity than personal income (Barro, 1986), that Medicaid expenditures represent in 1984 and 1991. These measures were only available as late as 1989, however. When they were used as the denominator for 1984 expenditures, some differences emerged. For example, Maryland takes the place of Louisiana as the 10th highest in terms of its tax burden (Louisiana moves to 17th) and Alaska drops from 26th to 43rd. Both of these States had the ability to export significant amounts of severance taxes in 1984. Thus, although the overall pattern is similar, using a measure such as the TTR can change the standing of selected States significantly. As data become available, the 1991 measure could be used for comparison.

Table 5

State-Funded Expenditures and Net State-Funded Expenditures as a Percentage of Personal Income:[1] Selected Years

Region and State	1984 Percent	1984 Rank	1992 Percent	1992 Rank	Net 1992[2] Percent	Net 1992[2] Rank
U.S. Average	0.4	—	0.8	—	0.6	—
New England						
Connecticut	0.5	9	1.2	6	1.1	5
Maine	0.5	16	1.4	5	1.2	4
Massachusetts	0.8	4	1.6	4	1.4	3
New Hampshire	0.3	34	2.2	1	0.7	13
Rhode Island	0.8	3	1.9	3	1.8	1
Vermont	0.3	32	0.8	19	0.7	15
Middle Atlantic						
New Jersey	0.4	24	1.0	9	0.6	25
New York	1.2	1	2.1	2	1.7	2
Pennsylvania	0.5	11	1.0	8	0.8	9
East North Central						
Illinois	0.6	7	0.9	42	0.6	20
Indiana	0.4	19	1.1	7	1.0	6
Michigan	0.7	5	0.9	15	0.7	11
Ohio	0.5	8	0.9	13	0.7	12
Wisconsin	0.6	6	0.8	18	0.8	8
West North Central						
Iowa	0.5	17	0.6	33	0.6	23
Kansas	0.3	28	0.5	42	0.2	48
Minnesota	0.8	2	1.0	10	0.9	7
Missouri	0.3	25	0.9	11	0.5	30
Nebraska	0.3	35	0.5	38	0.5	29
North Dakota	0.5	12	0.7	29	0.7	17
South Dakota	0.4	21	0.5	40	0.5	31
South Atlantic						
Delaware	0.4	22	0.6	32	0.6	22
Florida	0.2	45	0.7	25	0.7	18
Georgia	0.3	39	0.7	24	0.7	19
Maryland	0.5	13	0.8	17	0.7	14
North Carolina	0.3	41	0.7	28	0.6	26
South Carolina	0.2	44	0.7	23	0.5	37
Virginia	0.3	37	0.6	37	0.6	27
West Virginia	0.2	46	0.7	22	0.4	40
East South Central						
Alabama	0.3	38	0.6	35	0.3	45
Kentucky	0.4	20	0.8	20	0.5	32
Mississippi	0.3	27	0.5	39	0.3	46
Tennessee	0.3	36	0.9	12	0.5	36
West South Central						
Arkansas	0.4	18	0.6	34	0.5	34
Louisiana	0.5	10	0.5	43	0.1	49
Oklahoma	0.3	31	0.5	41	0.5	33
Texas	0.3	33	0.7	26	0.6	28
Mountain						
Colorado	0.3	29	0.7	30	0.6	21
Idaho	0.2	48	0.3	48	0.3	43
Montana	0.5	15	0.5	44	0.4	39
Nevada	0.3	42	0.7	31	0.3	44
New Mexico	0.3	40	0.4	47	0.4	42
Utah	0.1	49	0.3	49	0.2	47
Wyoming	0.2	47	0.5	45	0.5	38
Pacific						
Alaska	0.3	26	0.7	27	0.7	16
California	0.3	30	0.8	21	0.6	24
Hawaii	0.5	14	0.6	36	0.5	35
Oregon	0.2	43	0.4	46	0.4	41
Washington	0.4	23	0.8	16	0.8	10

[1]Transfer payments for Aid to Families with Dependent Children have been subtracted from State personal income to better reflect taxable income.
[2]Net expenditures are derived by subtracting the amount of tax and donation revenues raised by the State from nominal or actual expenditures.

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

of the top 10, and New York is the next-to-highest in terms of its tax burden for financing Medicaid. New Hampshire drops from the highest to the 13th when these revenues are excluded, indicative of their importance to this State's total State-generated revenues. Similarly, New Jersey drops from 9th to 25th.

A broader question concerning the T&D programs is whether their use is related to the income of the State; a related question is how their use interacts with the growth in spending and tax burdens observed. New Hampshire and New Jersey, for example, are higher income States and were in the top 10 in terms of spending per enrollee in 1992. Although they used T&D programs to increase revenues, other high-income States (e.g., Connecticut, Delaware, and Virginia) increased their real tax burdens significantly from 1984 to 1992, thus making it hard for the lower income States to close the gap in spending. The effect of using T&D programs can also be seen in the tax burdens for lower income States. Using data on total State funds, as noted earlier, would indicate that poorer (and for many, Southern) States experienced an expected growth in tax burdens. However, net of revenues from the T&D programs, several have not. In particular, there is actually no change in the average tax burdens for Alabama or Mississippi. Instead of remaining unchanged, the 1984-92 tax burden actually declined in Louisiana. Tax burdens increased notably less in Kentucky and Tennessee after the T&D revenues were deducted. This suggests that some of the poorer Southern States may be using the increased Federal aid derived through the special revenue programs to "displace" State revenues that would otherwise have been raised from taxpayers.

REDISTRIBUTION OF AID

The development and use of T&D programs likely had an impact on the interstate transfers inherent in the Federal matching formula. These transfers have previously been measured (Holahan and Cohen, 1986) by estimating the taxes each State pays into the "pool" of Federal dollars distributed through the matching formula. Although this analysis views the Medicaid program in isolation from other Federal redistributive policies (which may have a quite different pattern overall), it is illustrative of the effect of this particular intergovernmental formula. This type of analysis identifies the States that were net "winners" and net "losers" in terms of the Federal aid received versus taxes paid in, but it does not analyze redistribution on the basis of individual or State average income.

Earlier work (Holahan and Cohen, 1986) based on 1984 data showed there were substantial redistributional effects among the States; New York received $2.14 from Federal matching funds for every tax dollar paid, whereas Texas received only $0.50 for every tax dollar. In general, States with generous programs in 1984 (e.g., New York, Massachusetts) or with a large proportion of poor people (Arkansas, Mississippi) tended to be net gainers (receiving more funds than they were estimated to pay in). The broad coverage of the poor population and Medicaid services in generous States resulted in large amounts of Federal aid that counterbalanced relatively high tax contributions. In the States with large proportions of poor people, low per capita incomes, and therefore low tax contributions, the higher matching rate made the Federal share high, making these States net winners, despite the less generous Medicaid coverage available in these States. On the other hand, States

with more stringent Medicaid eligibility policies (Texas, Florida) or few poor persons (Connecticut, Washington), coupled with relatively high tax contributions, were net losers under the formula.

I hypothesized that this picture would have changed by 1992. Specifically, States such as New York, which had slower rates of growth in spending in recent years, would be less net winners, and States in the Southern and Mountain Regions would be more net winners. When I estimated the ratio of the Federal Medicaid aid received by each State to an estimate of each State's tax contribution[10] (Table 6) to the total pool of Federal funds distributed for Medicaid, the expected patterns were seen.

To follow up on previous examples, both New York and Massachusetts received fewer dollars in return for taxes paid in 1992; New York received $1.59, and Massachusetts received $1.02; both ranked further down the list of States than in 1984. Although the poorer States, Arkansas and Mississippi, were still net winners, Arkansas received less of a return in 1992, while Mississippi received somewhat more. Both Florida and Texas remained net losers in 1992, although both received somewhat more in return for taxes paid in 1992 than in 1984.

In general, the Southern States received more in return from the matching formula in 1992 than they had in 1984, as hypothesized. There were increases for the Mountain States as well; Idaho and Utah became net winners and Wyoming moved up significantly. The impact of the T&D programs can again be seen as States such as Louisiana, New Hampshire, and West Virginia, with relatively large T&D programs, moved up in the ranking of net

[10]These were estimated by multiplying the percent of the total Federal tax burden paid by each State's residents (Tax Foundation, Inc., 1991) by the total amount of Federal aid to the Medicaid program.

winners. Important to the issue of taxpayer equity, the matching formula was redistributing more revenues to the lower income States in 1992 than in 1984. Moreover, the matching funds brought in by the T&D programs appeared to be particularly important for Southern States in 1992. The Federal matching funds brought in by the T&D revenues averaged 16 percent of all revenues raised for the 38 States with such programs in 1992. For Southern States (with T&D programs), this percentage equaled 23 percent, and 6 of the top 10 programs measured in this way were in Southern States.

SUMMARY AND DISCUSSION

This study has examined the equity issue from three viewpoints: coverage, spending equity, and taxpayer equity. The analysis of changes in measures of equity from 1984 to 1991 led to several important findings:

- The mandated expansions of increased coverage of pregnant women and children as well as some elderly groups have resulted in significant increases in the percentage of the poor populations covered by Medicaid as well as the equity of this coverage across States.
- State spending still varies significantly, even after adjustment for medical cost differences. Different conclusions may be drawn when based on figures adjusted for medical cost differences than when based on unadjusted dollars. This indicates that this difference is an important factor to consider in future analyses or in refinement of the Federal matching formula.
- Although tax burdens have increased during the 1984-91 period, T&D programs have allowed some lower income Southern States to increase coverage without increasing State tax burdens by having the Federal Government pay more than it otherwise would have.

Table 6
Ratio of Federal Aid Dollars to Estimated State Tax Contributions for Medicaid Spending, by State and Region: 1984 and 1992

Region and State	1984 Ratio	1984 Rank	1992 Ratio	1992 Rank
New England				
Connecticut	0.68	38	0.75	38
Maine	2.19	1	1.60	7
Massachusetts	1.28	11	1.02	28
New Hampshire	0.79	31	1.59	9
Rhode Island	1.94	4	1.41	13
Vermont	1.86	5	1.15	21
Middle Atlantic				
New Jersey	0.61	41	0.68	40
New York	2.14	2	1.59	8
Pennsylvania	1.04	22	1.11	22
East North Central				
Illinois	0.77	34	0.59	45
Indiana	0.89	25	1.10	23
Michigan	1.18	16	0.89	34
Ohio	1.05	20	1.08	25
Wisconsin	1.52	9	1.04	26
West North Central				
Iowa	0.81	30	0.93	32
Kansas	0.58	43	0.93	30
Minnesota	1.52	10	0.93	31
Missouri	0.78	33	1.16	18
Nebraska	0.74	35	0.87	35
North Dakota	1.22	15	1.37	14
South Dakota	1.57	7	1.26	16
South Atlantic				
Delaware	0.62	39	0.56	48
Florida	0.51	45	0.64	41
Georgia	1.05	21	1.04	27
Maryland	0.70	37	0.64	42
North Carolina	1.10	19	1.15	20
South Carolina	1.23	13	1.68	5
Virginia	0.61	42	0.49	49
West Virginia	0.78	32	2.36	2
East South Central				
Alabama	1.14	17	1.42	12
Kentucky	1.56	8	1.88	4
Mississippi	1.85	6	2.21	3
Tennessee	1.24	12	1.52	10
West South Central				
Arkansas	2.03	3	1.63	6
Louisiana	1.22	14	3.10	1
Oklahoma	0.82	29	1.19	17
Texas	0.50	46	0.99	29
Mountain				
Colorado	0.51	44	0.64	43
Idaho	0.85	27	1.09	24
Montana	1.11	18	1.31	15
Nevada	0.37	48	0.57	49
New Mexico	1.02	23	1.42	11
Utah	0.99	24	1.15	19
Wyoming	0.25	49	0.79	37
Pacific				
Alaska	0.44	47	0.61	44
California	0.84	28	0.70	39
Hawaii	0.87	26	0.57	46
Oregon	0.73	36	0.84	36
Washington	0.62	40	0.90	33

SOURCE: Adams, E.K., SysteMetrics, Inc., 1993.

- T&D programs had a dramatic impact on the measures of variation in spending across States by 1992.

The latter part of the 1980s will be remembered for the rapid escalation in Medicaid spending and the use of T&D programs by States to help finance mandated expansions. As this analysis has indicated, the mandated expansions resulted in a marked increase in the proportion of the poor population in each State who were covered by the Medicaid program sometime during the year. This pattern was observed overall but especially for those States with previously low coverage, including many of the Southern States. Equity, if defined as the potential for a poor person in any State to obtain health insurance through the Medicaid program, has markedly improved, and the pool of uninsured children has declined.

Whether these children and other Medicaid enrollees enjoy equal benefits once enrolled is far less clear. If benefits are measured in terms of the actual dollars paid across States, our data indicate there are wide disparities that remain; indeed, the gap has widened over time. Although there have been greater rates of growth in spending in those States with previously less generous programs and a shift in the pool of Federal dollars going to these States, these changes are not sufficient to overcome long-standing differences found across the States.

High-spending States are still generally high spenders. One reason, however, appears to be the relative costs of purchasing medical services in their geographic areas. That is, States are not able to purchase the same amount of medical resources for equal expenditures, and expenditures do not therefore reflect the real value of Medicaid benefits provided.

Nominal expenditures may be high either because the State buys many more Medicaid services or because the average price for Medicaid services in a State is high. Only by adjusting for variations in prices can we begin to see if there is equity in the real value of Medicaid services provided. An important finding in this study is that if expenditure data are adjusted for differences in the costs of medical care services, there is virtually no change in the equity of Medicaid program expenditures across States from 1984 to 1991. Note that this analysis could not treat the very important issue of variations in quality and the potential relationship of quality to variations in medical costs.

The ability of the States to finance increased coverage of the poor population during this period is also of interest. Although States' finances are known to change during most business cycles, the fiscal positions of the States during the latter part of the 1980s and early 1990s have been shaped by several key developments. The recession, changes in Federal grant policies during the 1980s, increased Federal mandates, and a continued unwillingness to raise taxes have resulted in poor fiscal health for the States (Gramlich, 1991; Miller, 1992). The latter study notes that State fiscal balances are projected to fall to 1 percent of expenditures in both 1992 and 1993, far below the 5-percent level that is usually indicative of fiscal health. In this climate, the additional revenue obtained through the Medicaid formula has become important to the States. Medicaid revenues have grown from 21 percent of grants to the States in 1985 to an estimated 42 percent for 1993 (Miller, 1992).

As discussed in a recent summary of Medicaid changes (Rowland, Feder, and Salganicoff, 1994), the revenues received through Medicaid, whether enhanced

through the special programs or not, have been used in some instances to finance the expansions, in others to compensate hospitals for charity care, and in others still, to provide tax relief at the State level. The ability to use the T&D programs was especially important to some Southern States that, perhaps more strapped than others to meet the mandates, used this ingenious method to expand their programs with little or no increase in general tax-funded revenues. Provider taxes or donations came to constitute more than 25 percent of total revenues for many of these States.

What does the future hold for maintaining the strides made in the equity of Medicaid coverage? The Administration has published final regulations on the T&D programs that limit the types of donations and taxes that can be used and/or matched. Essentially, the Federal Government wants to match only on net State expenditures. Although there was a phase-in period built into the legislation for certain types of taxes (those that are broad-based and are not returned to providers) until 1995, most States believe they cannot live within the restrictions contained in the legislation. States that were reliant on these revenues will likely not be able to replace the funds derived from these once-lucrative programs (George Washington University, 1991). As the Nation considers health care reform, it needs to ensure that recent gains in equity are not eroded as resources become more scarce and that reforms in financing health care do not compromise access or quality within the Medicaid program.

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