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# Equity of the Medicaid Program to the Poor Versus Taxpayers

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*The last 15 years have witnessed explosive growth in State Medicaid programs. This article demonstrates the equalizing impacts of greater spending and recent Federal mandates on the health care coverage of the poor. Large inequalities in generosity still remain, however. Inequalities in taxpayer burdens are also documented, and simulations of alternative Federal sharing algorithms show significant changes that would be required to achieve a more equitable distribution of the program's financial burden.*

## INTRODUCTION

In the early 1980s, the Federal Government responded to the rapid expansion in Medicaid program spending by taking a more decentralized approach to Medicaid administration. The Omnibus Budget Reconciliation Acts (OBRA) of 1980 and 1981 gave States more flexibility in setting eligibility criteria, service coverage, and reimbursement methods. Such a policy was not without its risks, however.

First, and most important, States vary systematically in their attitudes about extending health care to their indigent populations. Hawaii, Michigan, California, and Wisconsin, for example, all enrolled more than 85 percent of their poverty-level populations in Medicaid in 1982 compared with less than 25 percent in Wyoming, Idaho, and

South Dakota (Cromwell, Hurdle, and Schurman, 1987). With fewer Federal restrictions, State enrollments fell considerably in 1981 and 1982 during a time when unemployment reached record post-Depression levels, raising serious questions about the adequacy of the public "safety net" (Cromwell, Hurdle, and Wedig, 1986).

A second risk of granting more program authority to the States is the extreme variation in State taxpayer burdens in spite of a Federal matching arrangement designed to help poorer States. Keying on per capita income instead of a more accurate measure of State tax capacity, the Federal Medical Assistance Percentage (FMAP) spans too narrow a range to assure program equity to State taxpayers. In 1981, for example, New York spent \$16 of its own money out of every \$100 of taxable capacity on Medicaid versus only \$2 in Florida (Cromwell, Hurdle, and Schurman, 1987), even though Florida enjoyed a slightly higher tax base per capita. When confronted with a declining economy and tax bases, Medicaid-burdened States sought ways of limiting their programs that hindered equal access to health care for poorer Americans.

Frustrated by falling enrollments in the early 1980s, Congress enacted a series of mandated enrollment and reimbursement laws. The Deficit Reduction Act of 1984 required States to extend coverage to first-time pregnant women and infants in poor families. Subsequent OBRA and the Medicare Catastrophic Coverage Act of 1988 continued to expand eligibility to

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low-income pregnant women and children. They also required States to offer coverage to unemployed parents and their families, to continue coverage to women and children after leaving the Aid to Families with Dependent Children (AFDC) program, and to pay Medicare premiums, deductibles, and copayments of the poor elderly. States were also required to increase payments to obstetricians to ensure reasonable access to maternity care and to ensure adequate and fair reimbursement to hospitals (under the Boren amendment of 1981). Although the mandates had direct cost implications, the fact that States were given greater flexibility in enrolling their poor without necessarily offering them cash welfare softened the financial blow somewhat on taxpayers. Limiting Medicaid enrollment to those receiving cash welfare had been a serious deterrent to States' willingness to expand their programs in the past.

The primary goal of this article is to determine the impact of the various mandates on the equity of the Medicaid program during the 1980s. Specifically, we will document trends in the breadth of Medicaid eligibility, as measured by the coverage rate (enrollments per person in poverty). Next, we document trends in the depth of coverage in terms of optional services, utilization limits, and real spending per enrollee. We then construct a typology of State Medicaid programs in 1990, based on their breadth versus depth of coverage, and compare the resulting classification with our earlier study using 1982 data. To examine the impacts of the mandates on taxpayers, we present levels and trends in State taxpayer burdens for Medicaid from 1975 to 1991. We then estimate a program/taxpayer equity parameter and compare it with an earlier estimate for 1981. Because several States adopted provider-specific tax and voluntary donation (T&D)

schemes by 1991, we adjust State-specific spending to test whether such schemes resulted in more equal taxpayer burdens. In the final analysis, we bring State Medicaid generosity to the poor together with taxpayer burden to show the limitations of the current Federal matching algorithm. In particular, we simulate the changes that would have to occur in each State's FMAP to achieve, simultaneously, both equity to the poor (in terms of real spending) and to the taxpayer (in terms of equal tax burdens).

## TRENDS IN THE BREADTH OF MEDICAID COVERAGE

The number of Medicaid person-year-equivalent (PYE)<sup>1</sup> enrollees has grown over 60 percent since 1975, from slightly over 17 million to 27.4 million in 1992. This growth has been a function of changes in eligibility requirements over time and the growing number of poor in America.

### Eligibility Requirements

Consider, first, the changes brought about by income restrictions. Medicaid coverage is divided into two broad groups: the categorically needy and the medically needy. Originally, the former were defined as those people who received cash payments through AFDC and Supplemental Security Income (SSI). These maintenance assistance groups corresponded to poor families with children and the aged, blind, and disabled, respectively. With the implementation of the Medicaid expansions, certain individuals who do not receive cash payments through AFDC or SSI are now considered categorically needy, including pregnant women and infants (up to 133

<sup>1</sup>The PYE measure takes into account duration of enrollment and represents the number of Medicaid enrollees at a point in time.

percent of the Federal poverty level [FPL]), and children living in families up to 100 percent of the FPL born after September 30, 1983. States are now also required to enroll and pay the Medicare premiums, deductibles, and copayments of qualified Medicare beneficiaries, Medicare recipients whose income is less than 100 percent of the FPL and whose resources do not exceed two times the SSI resource standard. The medically needy are those individuals who do not qualify for cash payments from either AFDC or SSI, but qualify for Medicaid under optional Federal laws because their medical expenses leave them impoverished.

Prior to the Federal mandates of the 1980s, breadth of Medicaid coverage was determined almost exclusively by States through their control of eligibility standards for AFDC cash assistance. The Federal mandates, by unlinking eligibility and cash welfare, took some control away from States and required enrollment of specific populations, e.g., poor children. However, each State still sets its own income and asset standards for determining eligibility for AFDC and coverage of their medically needy population, and therefore retains a large measure of control over the breadth of Medicaid coverage.

Table 1 shows that, from 1980 to 1992, the AFDC payment standard decreased for all but two States (Alaska and Georgia) after adjusting for inflation. Furthermore, the mean payment fell 23 percent overall in real terms. States with the greatest decline in payment standards include Virginia (45 percent), Oregon (43 percent), and Idaho (43 percent). Twelve States spent more than \$500 a month on an AFDC family of 3 in 1992, while another 14 States allowed less than \$300. Declining real payment standards implies fewer Medicaid eligibles over time.

One explanation for declining cash welfare is the substitution of in-kind Federal food stamps for discretionary income (Moffitt, 1990). States realized that they could reduce cash payments, as the food stamp program met one of the most important needs of the poor. Further, since the mandated expansions of the mid-1980s, States have had little motivation to increase the AFDC income requirements to guarantee health care coverage for the poor. A subset of the expansion population (i.e., pregnant women and children) that would have been eligible through AFDC if States updated their payment standards for inflation could now be covered without extending welfare to them as well.

Since 1984, eligibility requirements for pregnant women, infants, and children have undergone many changes marking the beginning of the break with AFDC-linked eligibility. With OBRA 1986, Federal poverty guidelines (based on the FPL) were used to supplement State-defined AFDC standards in defining Medicaid eligibility for pregnant women, infants, and children. Although these provisions were optional in OBRA 1986 and 1987, starting in 1988, Congress mandated coverage for qualifying pregnant women, infants, and children using the FPL standards. The Federal Government provided matching Medicaid funds to these new eligibles without States having to offer cash welfare as well, somewhat reducing their financial burden.

Besides enrolling the poor in Medicaid through cash welfare or as targeted non-cash groups, States have always had the option of covering the medically needy. In 1980, 30 States (including the District of Columbia) had already chosen to offer Medicaid services to those impoverished due to poor health. By 1992, seven more States had expanded their programs to

**Table 1**  
**Level and Percent Change in Monthly Income Standards for Three-Person Household,**  
**by Eligibility and State<sup>1</sup>**

State	AFDC Payment Standards		Medically Needy Protected Income	
	1992	Percent Change 1980-92	1992	Percent Change 1982-92
National Average	\$393	-23.2	\$516	3.3
<b>High (More Than \$500)</b>				
Alaska	923	18.6	NA	NA
Hawaii	693	-13.0	666	14.5
California	663	-17.7	934	35.2
Vermont	659	-21.3	900	29.2
Connecticut	581	-28.2	773	27.5
Massachusetts	579	-10.3	775	25.4
New York	577	-14.0	750	6.8
Rhode Island	554	-4.3	741	19.9
Minnesota	532	-25.1	709	32.5
Washington	531	-31.9	650	3.0
Wisconsin	518	-31.5	689	-12.6
New Hampshire	516	-12.4	616	45.1
<b>Medium (\$300 - \$500)</b>				
Oregon	460	-42.9	613	(2)
Michigan	459	-36.6	567	-10.1
Maine	453	-5.0	458	5.0
Iowa	426	-30.5	566	(2)
New Jersey	424	-30.8	566	(2)
District of Columbia	409	-16.0	545	-14.0
Montana	405	-8.2	443	15.0
South Dakota	404	-26.1	NA	NA
Kansas	403	-31.4	470	-17.1
Pennsylvania	403	-28.7	467	-12.5
Utah	402	-34.4	536	-0.6
North Dakota	401	-29.5	435	-22.3
Maryland	377	-18.0	442	7.0
Illinois	367	-25.2	492	35.4
Nebraska	364	-31.0	492	-9.8
Wyoming	360	-32.9	NA	NA
Colorado	356	-27.9	NA	NA
Nevada	348	-22.0	NA	NA
Oklahoma	341	-29.0	459	8.1
Delaware	338	-25.4	NA	NA
Ohio	334	-25.4	NA	NA
New Mexico	324	-13.5	NA	NA
Idaho	315	-42.7	NA	NA
Florida	303	-8.7	303	(2)
<b>Low (Less Than \$300)</b>				
Missouri	292	-30.8	NA	NA
Virginia	291	-44.9	358	-8.1
Indiana	288	-33.7	NA	NA
Georgia	280	0.3	375	(2)
North Carolina	272	-16.8	367	12.2
West Virginia	249	-29.0	290	-11.3
Kentucky	228	-28.8	308	-2.4
South Carolina	210	-4.4	283	(2)
Arkansas	204	-25.6	275	19.7
Louisiana	190	-26.6	258	-7.6
Tennessee	185	-10.9	250	29.3
Texas	184	-6.8	267	(2)
Alabama	149	-25.8	NA	NA
Mississippi	120	-26.6	NA	NA

<sup>1</sup>In 1992 dollars.

<sup>2</sup>1982 value equaled 0.

NOTES: AFDC is Aid to Families With Dependent Children. NA is not available—no medically needy program as of 1992. Dollar figures adjusted by U.S. Consumer Price Index.

SOURCE: U.S. House of Representatives, Committee on Ways and Means: *Overview of Entitlement Programs: 1992 Green Book*.

include the medically needy. Unlike cash welfare standards, a majority of States increased the amount of protected income for the medically needy in real terms (a mean increase of 3.3 percent). States have clearly chosen to be far more generous in extending coverage to the sick than to poor mothers with children. Oregon is a notable example in adding a medically needy program while letting cash welfare payments decline 43 percent in constant dollars. Medically needy protected income levels are highly correlated with AFDC payment levels, ranging from \$250-375 in the AFDC low-income limit group to \$616-934 in the most generous group.

### **Enrollment Trends**

Given the mandates and expansion in the medically needy program, it is not surprising that non-cash enrollees grew 203 percent from 1975 to 1992 (with a 109-percent increase from 1988 to 1992 alone). Despite negative growth in real AFDC payment levels, cash enrollees still experienced slow growth over time (22.5 percent over the 1975-92 period).

The national Medicaid coverage rate (enrollment per 100 poor persons) increased 3.5 percent from 1982 to 1990 (Table 2). To obtain the proportion of Medicaid-covered poor in a State, Medicaid enrollees were used as the numerator while the State population below the adjusted poverty level served as the denominator. The number of poor in the State was adjusted to reflect State-specific cost-of-living differences (available from authors upon request). As was the case in overall enrollment growth, there is considerable variation in the level and rate of improvement in State coverage rates. Table 2 ranks States by their rate of increase in adjusted PYE enrollees per poor person. The

increase in coverage rates from 1982 to 1990 exceeded 40 percent for 10 States (mostly Western and Southern). Coverage rates decreased, however, in 12 States (mostly Eastern). The 10 States with the largest increases in coverage rates had relatively low coverage rates in 1982. Conversely, among the 10 States with the largest decreases in coverage rates, most (except New Hampshire) had relatively high coverage rates in 1982. What forces might cause such a regression to the mean? On the one hand, Federal mandates have forced States with low coverage rates in 1982 to cover a higher proportion of poor persons. On the other hand, States that had relatively generous programs in 1982 may have found it increasingly difficult to support that level of generosity.

There are several interesting contrasts among States with the largest increases and those that had the largest declines in coverage rates. The coverage rate for Texas increased 65 percent, while Michigan decreased 25 percent. With the fourth lowest coverage rate in 1982, Texas was one of the States most affected by the Medicaid expansions, and consequently resorted to provider-specific taxes in 1992 to help finance their expansions. Michigan had the second highest coverage rate in 1982. Well-publicized State fiscal problems may have caused Michigan, among other things, to drastically reduce general assistance to low-income persons during the early 1980s. Michigan also subsequently enacted a voluntary donation program to help finance their Medicaid expansions.

In 1990, Utah and Hawaii had coverage rates of about 49 and 62 enrollees per 100 poor, respectively. While Utah's coverage rate increased 69 percent, Hawaii's fell nearly 40 percent. One possible reason for this difference might be Hawaii's ongoing experimentation with universal health

Table 2

## Medicaid Person-Year-Equivalent (PYE) Enrollees Per Person in Poverty, by State: 1982 and 1990

Quartile and State	PYE Enrollees per Poor Person		Percent Change 1982-90
	1982	1990	
United States	0.55	0.57	3.5
<b>Quartile I</b>			
Alaska	0.30	0.62	105.9
Tennessee	0.38	0.74	95.1
South Dakota	0.23	0.39	69.1
Utah	0.29	0.49	69.0
Wyoming	0.24	0.40	67.0
Texas	0.28	0.46	65.2
West Virginia	0.47	0.73	56.0
North Carolina	0.32	0.50	54.7
Mississippi	0.46	0.67	45.5
Colorado	0.37	0.53	42.0
Idaho	0.24	0.33	39.2
Washington	0.48	0.66	38.3
<b>Quartile II</b>			
Nebraska	0.36	0.50	37.5
Arkansas	0.36	0.49	35.9
Montana	0.29	0.39	35.5
Iowa	0.43	0.56	29.9
Oregon	0.34	0.43	27.2
New Mexico	0.34	0.43	26.9
Virginia	0.37	0.47	26.9
Delaware	0.47	0.59	25.9
Louisiana	0.44	0.55	25.5
Georgia	0.47	0.59	25.1
Kansas	0.41	0.51	24.7
District of Columbia	0.69	0.82	18.2
<b>Quartile III</b>			
Kentucky	0.47	0.55	17.1
Alabama	0.37	0.43	17.1
Florida	0.35	0.41	16.0
Oklahoma	0.39	0.45	14.4
Maryland	0.60	0.66	9.9
Indiana	0.40	0.43	7.1
Connecticut	0.67	0.70	4.7
South Carolina	0.45	0.47	4.1
Illinois	0.71	0.73	3.2
California	0.87	0.90	3.0
Nevada	0.28	0.29	2.2
Minnesota	0.52	0.53	2.1
<b>Quartile IV</b>			
Missouri	0.52	0.52	-0.7
Maine	0.63	0.58	-8.6
New York	0.66	0.59	-10.6
Vermont	0.73	0.62	-14.9
Michigan	0.89	0.67	-24.5
Pennsylvania	0.73	0.53	-27.9
Massachusetts	0.74	0.53	-29.0
New Hampshire	0.40	0.28	-29.7
New Jersey	0.72	0.49	-31.8
Wisconsin	0.87	0.55	-36.8
Ohio	0.63	0.38	-39.0
Hawaii	1.03	0.62	-39.6

NOTES: State poverty numbers adjusted by area cost of living. States ranked from highest to lowest based on percent change in PYE per poor person. Rhode Island and North Dakota are not included because of poor data quality.

SOURCES: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States*, 1983 and 1991.

coverage and employer mandates. In particular, the working poor may have been covered under private insurance in Hawaii. Thus, Hawaii's coverage rate might be an artifact of its social experiments. Also contributing to the divergent trends in coverage was the growing number of poor in Hawaii compared with declines in poverty in Utah.

## TRENDS IN THE DEPTH OF MEDICAID COVERAGE

States' depth of program coverage was measured in four ways:

- The number of optional services a State offers to the categorically needy.
- Whether the State offers a medically needy program, and if so, how many optional services are offered.
- Limits on inpatient hospital stays.
- Payments per enrollee.

Currently, all State programs must cover 12 major services, including inpatient hospital stays, outpatient hospital visits, physician services, etc. In addition, there are currently 29 services that States can elect to cover for the categorically or medically needy. These include coverage for dental services, prescription drugs, emergency services, etc. In 1991, all 50 States and the District of Columbia offered the basic services required to the categorically needy, while 37 States (up from 30 in 1980) offered these services to the medically needy as well. The seven States that expanded coverage to the medically needy between 1980 and 1991 were Florida, Georgia, Iowa, New Jersey, Oregon, South Carolina, and Texas. In 1992, South Carolina rescinded its medically needy program.

Table 3 reports, by State, the number of optional services offered for the categorically and medically needy in both 1980 and 1991. Overall, there was an increase in the

mean number of optional services included in States' categorically needy programs from 16 in 1980 to 22 in 1991. Every State increased the number of optional services offered to the categorically needy. Among the States that had increases of 10 or more optional services between 1980 and 1991 were Vermont, Florida, Mississippi, Maryland, South Carolina, Tennessee, and Wyoming. Most more than doubled the number of optional services offered to the categorically needy. The services added most frequently by these States were transportation, case management, dental, and other practitioner services.

Medically needy programs also expanded by an average of four services from 1980 to 1991. Sixteen States added dental services, 12 added rehabilitative services, and 11 expanded to include optometrist and other practitioner services. Of the 17 States whose medically needy protected income was greater than \$500, 13 offered at least 22 optional services. Conversely, for the 6 States whose medically needy protected income was below \$300, none offered more than 20 optional services.

Generosity in the number of optional services offered by a State reflects systematic regional differences. States offering 25 or more of the optional services to the categorically needy fall primarily on the west coast and in the North. There is a belt of less generous States ranging from Idaho to Texas and throughout the South.

A mechanism that some States have used to control Medicaid outlays is to place a ceiling on mandated services. In the 1980s, when forced to implement new mandates that expanded the breadth of Medicaid coverage, States might have been expected to reduce the number of inpatient hospital days eligible for reimbursement. Despite rising fiscal pressures, however, the number of States choosing to

**Table 3**  
**Comparison of Optional Medicaid Services Offered, by State: 1980 and 1991**

State	Categorically Needy			State	Medically Needy		
	1980	1991	Increase		1980	1991	Increase
Total	16	22	6	Total <sup>1</sup>	18	22	4
Wisconsin	24	29	5	California	23	28	5
California	23	28	5	Minnesota	25	28	3
Minnesota	25	28	3	Oregon	0	27	27
Massachusetts	23	27	4	Massachusetts	23	26	3
Oregon	20	27	7	Montana	24	26	2
Washington	22	27	5	New Hampshire	20	26	6
Indiana	21	26	5	New York	24	26	2
Montana	24	26	2	Utah	18	26	8
New Hampshire	21	26	5	Michigan	21	25	4
New York	24	26	2	North Dakota	21	25	4
Utah	17	26	9	Maine	17	24	7
Michigan	21	25	4	Nebraska	21	24	3
Nevada	19	25	6	Connecticut	23	23	0
New Jersey	23	25	2	District of Columbia	18	23	5
North Dakota	21	25	4	Hawaii	20	23	3
Florida	11	24	13	Illinois	23	23	0
Hawaii	19	24	5	Kansas	21	23	2
Illinois	23	24	1	Kentucky	14	23	9
Maine	19	24	5	North Carolina	16	23	7
Nebraska	21	24	3	Vermont	9	23	14
Arkansas	16	23	7	Washington	21	23	2
Connecticut	22	23	1	Maryland	12	22	10
District of Columbia	17	23	6	Florida	0	21	21
Kansas	21	23	2	West Virginia	17	20	3
Kentucky	14	23	9	Arkansas	12	19	7
North Carolina	16	23	7	Texas	0	19	19
Vermont	9	23	14	Pennsylvania	9	18	9
Maryland	12	22	10	Tennessee	8	18	10
Ohio	20	22	2	South Carolina	0	17	17
Iowa	20	21	1	Virginia	13	17	4
West Virginia	17	21	4	Iowa	0	16	16
Arizona	0	20	20	New Jersey	0	16	16
Virginia	13	20	7	Wisconsin	24	16	-8
New Mexico	17	19	2	Georgia	0	14	14
Pennsylvania	14	19	5	Rhode Island	9	14	5
South Carolina	9	19	10	Oklahoma	22	11	-11
Texas	10	19	9	Louisiana	7	8	1
Colorado	10	18	8	Idaho	0	1	1
Tennessee	8	18	10	Nevada	1	1	0
Alaska	9	17	8	Alabama	0	0	0
Mississippi	5	17	12	Alaska	0	0	0
Missouri	12	17	5	Arizona	0	0	0
Oklahoma	8	17	9	Colorado	0	0	0
Delaware	9	16	7	Delaware	0	0	0
Idaho	10	16	6	Indiana	0	0	0
Rhode Island	10	16	6	Mississippi	0	0	0
South Dakota	14	16	2	Missouri	0	0	0
Wyoming	5	15	10	New Mexico	0	0	0
Alabama	9	14	5	Ohio	0	0	0
Georgia	8	14	6	South Dakota	0	0	0
Louisiana	12	14	2	Wyoming	0	0	0

<sup>1</sup>Means based only on those States that offered a medically needy program in 1980.

NOTE: States ranked by 1991 levels.

SOURCE: U.S. Department of Health and Human Services: *Medicaid Services by State*, October 1, 1980 and October 1, 1991.



limit the number of inpatient hospital days dropped from 20 in 1974 to 18 in 1994.

As a final measure of depth of coverage, consider what States spend in real terms of enrollees. Table 4 presents payments per enrollee by State for 1982 and 1990 adjusted by a State-specific Medicaid price index (available from the authors upon request). They range from a high of nearly \$7,800 in Wisconsin to a low of \$835 in West Virginia. In 1982, 27 States fell below the national average in payments per enrollee; by 1990, this number decreased to 18. Fourteen of these States were below the national average in both years. Regional trends in payments per enrollee are similar to those discussed for optional services. States with the highest payments per enrollee tend to be in the North, while less generous States are primarily in the South.

Of the 12 States with the highest payments per enrollee (quartile I), 7 were among the top 10 most generous in terms of the number of optional services offered to the categorically needy. Five of these States also offered at least 26 optional services to the medically needy. Conversely, 7 of the 12 States in quartile IV offered fewer than 18 optional services to the categorically needy and 5 of these States did not offer a medically needy program. Exceptions include California, which offered 28 of the 29 optional services to both the categorically and medically needy, yet falls at the low end of quartile IV in real payments per enrollee. Also, South Dakota, which had the fourth highest real payments per enrollee in the United States, offered relatively few optional services to the categorically needy and has no medically needy program.

## A TYPOLOGY OF MEDICAID PROGRAMS

Total real Medicaid spending per person in poverty (MEX/P/Poor) reflects the

overall generosity of the program and can be decomposed into the product of two ratios depicting breadth and depth of coverage:

$$\frac{MEX/P}{POOR} = \frac{ENR}{POOR} * \frac{MEX/P}{ENR} \quad (1)$$

where ENR/POOR, enrollees per poor (i.e., coverage rate), is our measure of breadth, and MEX/P/ENR, price-adjusted total spending per enrollee, is our measure of depth. From the enrollee's perspective, it is the real services they receive, not their ultimate costs to taxpayers (analyzed later), that count. To avoid categorizing a program as "deep coverage" simply because it pays high prices to providers, we deflate total expenditures using a Medicaid-specific price deflator for each State. The Medicaid price deflator is derived from HCFA Form-2082 expenditure and utilization data for hospitals, nursing homes, and physician services.

Depth of coverage can also be influenced by the States' demographic mix, as older persons use more health services. No adjustment was made for enrollee mix, however, for two reasons. First, broader programs will tend to enroll fewer sick persons at the margin, resulting in a natural trade-off of depth for breadth that is part of the typology. Second, to the extent States differ in their underlying demographic mix, we wanted to capture any effects this may have in program depth and breadth. Adjustments for mix are made in subsequent analyses of taxpayer burden to account for the greater financial requirements of the elderly and disabled.

Figure 1 plots the State programs as of 1990 in terms of their coverage rate (y-axis) and depth of real spending per enrollee (x-axis). For a given level of overall program generosity to the poor,  $k^*$ , breadth and depth trade off against each other. When

Table 4

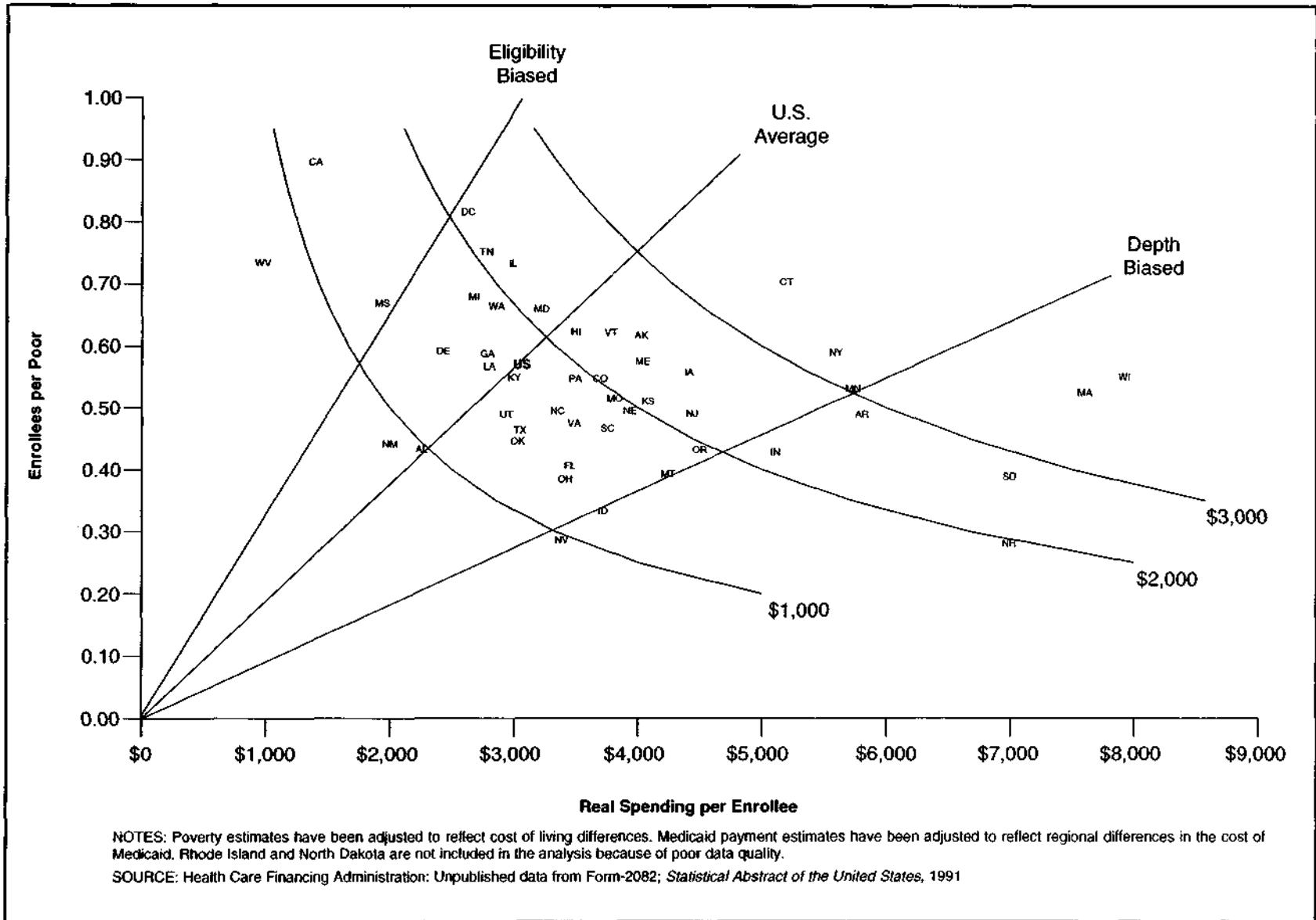
## Trends in Adjusted Medicaid Payments Per Person-Year-Equivalent Enrollee, by State: 1982 and 1990

Quartile and State	1982	1990	Percent Change 1982-90
United States	1,945	2,932	50.70
<b>Quartile I</b>			
Wisconsin	2,121	7,794	267.51
Massachusetts	2,179	7,465	242.53
New Hampshire	2,628	6,863	161.19
South Dakota	2,594	6,858	164.38
Arkansas	1,916	5,676	196.21
Minnesota	3,657	5,595	52.97
New York	2,958	5,464	84.72
Connecticut	1,909	5,069	165.49
Indiana	2,266	4,997	120.53
Oregon	1,230	4,371	255.27
New Jersey	NA	4,323	NA
Iowa	2,164	4,311	99.18
<b>Quartile II</b>			
Montana	NA	4,117	NA
Kansas	2,280	3,955	73.46
Maine	1,924	3,899	102.67
Alaska	NA	3,896	NA
Nebraska	2,324	3,809	63.92
Missouri	1,326	3,719	180.54
Colorado	2,082	3,673	76.44
Vermont	1,903	3,655	92.03
South Carolina	1,271	3,622	184.90
Idaho	2,044	3,605	76.38
Pennsylvania	1,946	3,556	82.71
Virginia	1,714	3,395	98.13
<b>Quartile III</b>			
Hawaii	1,385	3,383	144.23
Florida	1,368	3,332	143.53
Ohio	1,713	3,276	91.21
Nevada	3,161	3,255	2.96
North Carolina	1,852	3,224	74.06
Maryland	1,437	3,093	115.21
Texas	2,161	2,920	35.12
Oklahoma	2,409	2,895	20.18
Illinois	1,969	2,882	46.39
Kentucky	1,192	2,872	140.99
Utah	1,881	2,808	49.26
<b>Quartile IV</b>			
Louisiana	1,882	2,800	48.76
Washington	1,709	2,722	59.23
Tennessee	1,773	2,690	51.70
Georgia	1,591	2,650	66.54
Michigan	1,380	2,617	89.60
District of Columbia	1,789	2,496	39.47
Wyoming	2,285	2,366	3.51
Delaware	1,470	2,301	56.54
Alabama	1,276	2,139	67.63
New Mexico	1,312	2,135	62.72
Mississippi	1,162	1,800	54.96
California	1,416	1,265	-10.62
West Virginia	843	835	-1.02
North Dakota	2,573	NA	NA
Rhode Island	2,386	NA	NA

NOTES: Payments adjusted by an index of State Medicaid prices. Rhode Island and North Dakota are missing in 1990 because of poor data quality. States ranked by 1990 payment level. NA is not available.

SOURCE: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States*, 1983 and 1991.

**Figure 1**  
**Breadth Versus Depth of State Medicaid Coverage: 1990**



various combinations of breadth and depth are plotted for a constant  $k^*$ , the result is an iso-expenditure line. The iso-expenditure curve identifies all combinations of enrollees per poor person and real spending per enrollee that produce the same total (deflated) spending. All States falling along the line are equally generous to the poor in terms of overall spending but exhibit different preferences for scope of eligibility versus scope of services. States spending more per poor person fall along a higher iso-expenditure line and are considered more generous to the poor overall, although they may exhibit less breadth or depth (but not both) than States on a lower expenditure line. For example, Tennessee, Maryland, and Kansas can be regarded as equally generous to the poor in terms of spending per person in poverty because they fall (roughly) along the \$2,000 iso-expenditure line.<sup>2</sup> None of these States is as generous as Minnesota, which lies on the \$3,000 iso-expenditure line.

States appearing above the ray extending from the origin through the U.S. coordinates are relatively more generous to potential eligibles by enrolling more of the poor (i.e., these States are enrollment-biased). States below the U.S. ray can be said to be more generous to those deemed eligible (i.e., depth-biased). States falling along any ray from the origin exhibit similar breadth-depth preferences.

Considering, first, State preferences for breadth versus depth, we find California, West Virginia, Illinois, the District of Columbia, and Tennessee showing an enrollment bias. By contrast, Wisconsin, Massachusetts, South Dakota, and New

Hampshire show a bias towards more depth and less coverage of the poor.

Moving out along any ray from the origin indicates those States that refuse to sacrifice depth for breadth or vice-versa. Mississippi and the District of Columbia are both enrollment-biased to roughly the same degree. Yet, on average, the District of Columbia spends 168 percent more per poor person than Mississippi, even after adjusting for its higher costs of medical care. Similarly, Nevada and Minnesota are alike in their depth bias, but Minnesota spends more than three times what Nevada does per poor person.

What are the eligible and service characteristics of States that are breadth- versus depth-oriented? Are breadth-oriented States broader in their AFDC coverage, particularly narrow in their service coverage, or both? Are depth-oriented programs the opposite, with limited AFDC enrollment and/or generous service coverage?

Figure 2 divides States into four quadrants based on median breadth and depth thresholds. States that refuse to tradeoff depth for breadth of coverage and thus spend relatively more per poor person appear in quadrant I; States offering relatively limited programs for the poor are in quadrant IV; and States that opt for depth over breadth or the reverse are in quadrants II and III, respectively.

The nine uniformly generous States in quadrant I exhibit a far higher percentage of medically needy recipients than among the other three groups, as expected. They also have a slightly higher percentage receiving AFDC cash welfare than States with more limited breadth of coverage (quadrants II and IV). Their range of optional services, by contrast, is not exceptional.

States with uniformly low breadth and depth in quadrant IV have very few medically needy recipients. And for those

<sup>2</sup>Programs falling along any iso-expenditure line in Figure 1 do not necessarily spend the same per poor person in nominal terms, because spending has been adjusted in a number of ways. Nevertheless, a high correlation exists between iso-expenditure lines in Figure 1 and actual spending per poor person.

**Figure 2**  
**Breadth Versus Depth of Medicaid Coverage: 1990**

		Breadth of Coverage <sup>1</sup>							
		High				Low			
		Quadrant I		Quadrant II		Quadrant III		Quadrant IV	
Depth of Spending <sup>2</sup>	State	1982	Depth	Breadth	1982	Depth	Breadth	1982	Breadth
		Quadrant		(Percent)	Quadrant		(Percent)	Quadrant	(Percent)
High	Alaska		\$3,896	61.8	Arkansas	II	\$5,676	48.9	
	Connecticut	III	5,069	70.2	Colorado	II	3,673	52.5	
	Hawaii	III	3,383	62.2	Idaho	IV	3,605	33.4	
	Iowa	I	4,311	55.8	Indiana		4,997	42.9	
	Maine	I	3,899	57.6	Kansas	II	3,955	51.1	
	Minnesota	I	5,595	53.1	Massachusetts	I	7,465	52.6	
	New York	I	5,464	59.0	Missouri		3,719	51.7	
	Vermont	I	3,655	62.1	Montana		4,117	39.3	
	Wisconsin	I	7,794	55.0	Nebraska		3,809	49.5	
						New Hampshire	II	6,863	28.1
					New Jersey	III	4,323	49.1	
					Oregon		4,371	43.3	
					Pennsylvania		3,556	52.6	
					South Carolina	IV	3,622	46.8	
					South Dakota	II	6,858	38.9	
					Virginia	IV	3,395	46.9	
			Percent				Percent		
	Recipients on AFDC		44.6		Recipients on AFDC		43.4		
	Medically Needy Recipients		22.0		Medically Needy Recipients		8.0		
	Optional Services Offered to:				Optional Services Offered to:				
	Medically Needy		46.8		Medically Needy		65.8		
	Categorically Needy		57.8		Categorically Needy		78.0		
	ADA Index = 1.04				ADA Index = 0.89				
Low	California	III	\$1,265	89.6	Alabama	IV	\$2,139	43.3	
	District of Columbia	I	2,496	81.6	Florida	IV	3,332	40.6	
	Delaware		2,301	59.2	North Carolina	II	3,224	49.5	
	Georgia	IV	2,650	58.8	New Mexico	IV	2,135	43.2	
	Illinois	III	2,882	73.3	Nevada	II	3,255	28.6	
	Kentucky	IV	2,872	55.1	Ohio	III	3,276	38.4	
	Louisiana	II	2,800	55.2	Oklahoma	II	2,895	44.6	
	Maryland	III	3,093	65.9	Texas	II	2,920	46.2	
	Michigan	III	2,617	67.2	Utah	II	2,808	49.0	
	Mississippi	IV	1,800	66.9	Wyoming	II	2,366	40.1	
	Tennessee	II	2,690	74.1					
	Washington		2,722	66.4					
	West Virginia		835	73.3					
				Percent			Percent		
	Recipients on AFDC		51.1		Recipients on AFDC		42.7		
	Medically Needy Recipients		13.5		Medically Needy Recipients		3.4		
	Optional Services Offered to:				Optional Services Offered to:				
	Medically Needy		70.1		Medically Needy		28.0		
	Categorically Needy		83.6		Categorically Needy		57.7		
	ADA Index = 1.05				ADA Index = 0.85				

<sup>1</sup>Enrollees per poor person.

<sup>2</sup>Adjusted spending per enrollee.

NOTES: AFDC is Aid to Families with Dependent Children. ADA is Americans for Democratic Action. Rhode Island and North Dakota are not included because of poor data quality. Medicaid payment data are adjusted to reflect regional differences in the cost of Medicaid. Poverty estimates are adjusted to reflect regional differences in the cost of living. Some States missing data for 1982.

SOURCES: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States*, 1991; Americans for Democratic Action, 1975-91.

offering a medically needy program, including Florida, North Carolina, Oklahoma, Texas, and Utah, the number of optional services is quite limited compared with other States.

Each year, Americans for Democratic Action (1975-91) select 20 Senate and House votes and assign liberal positions to each issue. The group then rates the Senators and Representatives on each issue from 0 to 100 and produces an individual liberalism quotient. A State liberalism index was generated by the authors by averaging the individual quotients. Uniformly generous quadrant I States are considerably more liberal (ADA liberalism index = 1.04) than their opposite, below-average States (ADA = 0.85). However, they are no more liberal than the States in quadrant III exhibiting limited depth. This implies that liberalism is more highly correlated with extension of eligibility to the poor than with depth of coverage. Among States exhibiting relatively narrow breadth, those with deeper coverage (quadrant II) have a greater percentage of medically needy recipients and offer considerably more optional services.

Alongside most States in Figure 2 is the quadrant in which they placed in 1982 (Cromwell, Hurdle, and Schurman, 1987). Some States were missing data for the earlier year and are left blank. Uniformly generous quadrant I States appear quite stable across the 1980s. Connecticut and Hawaii have joined the group by raising their depth of spending per enrollee. The District of Columbia and Massachusetts moved to quadrant III and II, respectively.

By contrast, only 3 of the 10 States now in quadrant IV were there in 1982: Alabama, Florida, and New Mexico. Several quadrant II States with traditionally low enrollee coverage rates slipped down to IV by reducing their depth of coverage, at least in relative terms. These States were

primarily located in the Southwest and Rocky Mountain regions.

States with minimal programs in 1982 that did change tended to move equally into quadrants II and III. Idaho, South Carolina, and Virginia, by 1990, spent more than average on enrollees (although still not offering broad eligibility) while Georgia, Kentucky, and Mississippi greatly expanded eligibility but not depth. No quadrant IV State moved into quadrant I, or vice-versa.

## MEDICAID TAXPAYER BURDEN

### Defining Taxpayer Burden

One reason why States vary so much in their level of Medicaid spending is that they do not all have equal abilities to pay for the program. It should be easier for a rich State to cover a larger fraction of its poor population, offering them the gamut of Medicaid services, than it is for a poor State to cover even a small number of enrollees with limited service benefits.

Taxpayer burden can be evaluated with regard to overall horizontal and vertical equity (Musgrave and Musgrave, 1989). Horizontal taxpayer equity requires that the proportion of State taxpayer income devoted to the Medicaid program be the same in States of similar wealth. Taxpayer burden ( $t_s$ ) can be expressed as follows:

$$t_s = \frac{MEX_s(1-FMAP_s)}{INC_s} \quad (2)$$

where

$MEX_s$  is total Medicaid expenditures in States,  
 $FMAP_s$  is the Federal matching rate,  
 $INC_s$  is aggregate State income, and  
 $t_s$  is the share of taxpayer income used to support the program.

Under conditions of perfect horizontal equity to taxpayers,  $t_s$  would be equal to a constant across States with comparable wealth. That is, States with similar per capita wealth should incur similar Medicaid spending out of tax revenues.

Vertical equity is a more stringent condition based on the principle that richer States should spend disproportionately more on Medicaid than poorer States. Wealthier taxpayers are assumed to sacrifice less per tax dollar than their poorer neighbors, and hence, should be willing and able to spend more on Medicaid (Musgrave and Musgrave, 1989). Vertical equity requires that richer States allocate a larger fraction of State income to the program, so that Medicaid tax efforts rise more than proportionately with income or wealth (U.S. General Accounting Office, 1983).

### Role of the FMAP

One of the primary functions of the variable FMAP is to equalize taxpayer burdens across the 50 States. Varying inversely with per capita income, FMAP ranges from a low of 50 percent in the richest States to 83 percent in the poorest State based on the following formula:

$$FMAP_s = 1.45 \left[ \frac{PCI_s}{PCI_{us}} \right]^2 \quad 50\% \leq FMAP \leq 83\% \quad (3)$$

where  $PCI_s$  refers to per capita income in the  $s$ th State, and  $PCI_{us}$  to the average per capita income of the United States as a whole. If total Medicaid spending were initially the same in every State, the effect of FMAP would be to reduce the tax burden of Medicaid on poorer States far more than on richer States, thereby closing the gap in Medicaid tax burdens across States.

Despite Federal efforts to equalize tax burdens through FMAP, there are several reasons why they may still vary dramatically across States. The first is that the upper and lower bounds placed on the Federal matching rate are too restrictive to achieve taxpayer equity, a point that was well-documented in 1983 by the U.S. General Accounting Office and again in 1993. Second, even if the FMAP fully compensated for State differences in wealth, differences in taxpayer preferences for Medicaid would still exist, and, in the absence of Federal regulations such as coverage mandates, program differences would arise. But this is exactly the kind of variation we are trying to capture, i.e., State taxpayer's Medicaid generosity over and above differences attributable to ability to pay or State wealth.

### Data, Sources, and Methods

To quantify taxpayer burdens, Medicaid spending data were developed from HCFA Form-2082 data files. Because we are interested in each State's own tax burden, Federal Medicaid payments have been subtracted from total program expenditures using the following formula<sup>3</sup>:

$$SMEX = (1-FMAP)MEX.$$

Since 1985, the use of (T&D) programs by States has distorted the financing relationship between the States and the Federal Government. States with T&D programs can raise their effective FMAP rate and increase total Medicaid spending without raising additional State revenues or reallocating funds. Typically, States with these schemes increase payments to

<sup>3</sup>HCFA Form-2082 data include only direct spending on independent medical vendors. They exclude most disproportionate share payments to public hospitals and all program administrative costs; hence, the figures shown later in Table 5 understate total taxpayer burden by about 10 percent, on average.

hospitals and health providers at least enough to compensate them for their T&D, but keep the Federal match for other purposes. The larger a State's T&D scheme, the greater the difference is between our HCFA Form-2082 estimate of SMEX and the actual State share of Medicaid spending. Before 1991, the impact of these schemes on State spending burdens was minimal. Even the 1991 impact of T&D schemes on per capita SMEX was only about 5 percent in the average State. Nevertheless, it is instructive to quantify the impact of these schemes on interstate program equity to taxpayers. Therefore, in some analyses, we adjusted SMEX for 1991 by subtracting the Federal portion of Medicaid grants that were financed through voluntary donations, taxes, and intragovernmental transfers (Robert Wood Johnson Foundation, 1992).

The Congress based Federal matching rates on each State's per capita income. Many groups (U.S. General Accounting Office, 1993; Advisory Commission on Intergovernmental Relations, 1993) regard income as a flawed measure of State ability to support public programs because it fails to adequately reflect true variations in tax bases. Alternatively, the Advisory Commission on Intergovernmental Relations (ACIR) tax capacity series, available from 1975 to 1991, calculates the revenue-raising capacity of States to support public services. The tax yield is estimated using a standard, representative national set of tax base definitions and tax rates in every State applied to a tax base that includes personal and corporate profits, sales taxes, property values, minerals, etc. Tax capacity represents the potential dollar yield of a "nationally representative" set of tax rates for each State and can be thought of as a weighted sum of a State's tax bases, based on national average tax rates for each tax base. The

tax-generating capabilities of a State's tax bases is a more accurate measure of the taxpayer's ability to support government spending than per capita income, which is only one of many tax bases.

ACIR reports a State's tax capacity by dividing the State's per capita capacity by the national average per capita capacity and multiplying by 100. The results show the potential taxable income of each State indexed to the national average for a given year. If a State's tax base grows at the same rate as the U.S. average, its end-period index will be identical to its base-period index, with no apparent growth; however, its actual tax capacity has grown at the national rate. ACIR-indexed measures of tax capacity, therefore, understate the growth in any one State's tax bases. Another problem in using ACIR tax capacities is that each year's tax bases are weighted by a contemporaneous set of national tax rates. With rising tax rates over time, this produces an upward bias in the trend in tax bases.

To estimate the growth in nominal State tax capacities, or more specifically, tax bases, the annual U.S. tax capacity reported by ACIR was adjusted, first, by multiplying each State's tax bases each year by a vector of 1979 tax rates in order to control for tax rate increases over time, then summing across all States. Next, each State's annual tax capacity was de-indexed by multiplying it by the per capita adjusted tax capacity for the entire country in a given year.

### **Trends in Taxpayer Burden**

Table 5 presents unadjusted State-only spending on Medicaid per \$100 of tax capacity (SMEX/TC) for selected years from 1975 to 1991, ignoring any T&D schemes. States are ranked from low to high according to their 1991 tax burden. In 1991, the (unweighted) average State



**Table 5**  
**Trends in State-Only Medicaid Expenditures Per \$100 of Tax Capacity, by State: 1975-91**

State	1975	1977	1979	1981	1982	1994	1986	1991	Aggregate Percent Change 1981-91	Aggregate Percent Change 1975-91
U.S. Average	3.0	3.4	3.9	4.4	4.4	4.5	4.7	5.8	31	93
Wyoming	0.7	0.9	0.8	0.8	0.9	1.2	1.4	2.2	171	210
Utah	1.4	1.7	2.4	2.3	2.2	2.0	2.1	2.6	11	83
Nevada	1.4	1.3	1.6	2.4	1.8	2.0	2.1	2.6	10	88
New Mexico	1.3	1.5	1.6	1.8	2.9	2.3	2.7	3.1	75	142
Alabama	2.1	2.3	2.7	2.7	3.1	2.9	2.8	3.2	17	51
Hawaii	3.0	4.4	5.1	5.3	3.4	4.5	4.1	3.3	-38	9
Idaho	1.8	1.9	2.1	2.3	3.5	2.4	2.4	3.4	47	87
Montana	2.1	2.5	2.4	2.8	3.9	3.5	3.7	3.6	28	71
Alaska	1.2	1.8	1.8	1.6	1.7	2.2	2.5	3.8	137	216
Colorado	2.6	2.3	2.8	2.9	3.1	3.1	2.9	4.0	36	52
South Carolina	1.5	2.3	2.7	3.2	3.4	2.4	3.1	4.0	26	170
Mississippi	2.0	2.1	2.2	2.8	5.4	3.1	2.9	4.1	48	107
Oklahoma	3.0	3.1	3.3	3.2	3.7	3.8	3.9	4.2	30	39
Oregon	2.2	3.0	3.0	3.2	3.0	3.1	2.9	4.2	31	91
West Virginia	0.9	1.5	2.0	2.3	2.1	2.1	2.8	4.2	84	369
South Dakota	1.7	2.0	2.7	3.5	3.6	4.1	4.5	4.3	24	155
Arkansas	2.4	2.9	3.4	3.8	6.9	4.0	4.8	4.3	14	81
Nebraska	2.2	2.4	3.0	3.4	4.1	3.6	4.0	4.4	30	100
Virginia	2.3	2.7	3.1	3.5	3.8	3.3	3.6	4.5	29	96
Washington	3.9	3.7	4.0	4.9	4.6	4.8	5.0	4.6	-7	17
Missouri	1.3	1.9	2.3	3.2	2.9	3.6	3.5	4.6	43	252
North Carolina	1.8	2.3	2.7	3.2	3.6	2.9	3.1	4.6	44	157
Kansas	3.0	4.0	3.4	3.8	2.7	4.1	3.6	4.7	23	56
Florida	1.3	1.3	1.7	1.9	2.0	2.2	2.7	4.9	156	274
Iowa	1.8	2.9	3.3	3.9	4.5	4.7	4.6	5.0	28	178
Kentucky	1.7	2.5	3.0	3.7	3.3	4.1	4.1	5.1	37	198
North Dakota	2.2	2.6	2.6	2.9	3.6	4.3	6.1	5.2	78	134
Delaware	1.6	2.2	3.4	3.8	3.8	3.7	3.8	5.3	39	229
Louisiana	1.9	2.2	2.9	2.6	3.3	4.5	4.9	5.4	107	183
Georgia	3.1	3.1	3.3	3.8	5.6	3.2	3.7	5.5	45	78
Tennessee	1.7	2.3	3.2	3.5	5.0	3.4	3.9	5.5	58	224
Indiana	2.2	2.4	2.9	3.5	4.1	4.5	4.7	5.7	64	160
California	5.0	5.5	5.5	5.9	5.4	4.7	5.1	5.8	-2	16
Texas	2.2	2.3	2.6	2.4	1.7	2.8	4.3	5.8	142	164
Wisconsin	5.3	5.6	5.8	7.9	8.0	7.6	7.2	5.8	-26	10
New Hampshire	2.0	2.5	3.1	3.4	4.3	3.4	3.8	5.8	71	191
Illinois	4.2	4.2	4.5	5.4	4.8	5.9	5.8	5.8	8	39
Vermont	3.4	3.7	4.4	5.0	5.1	4.6	4.3	6.2	23	81
Michigan	5.3	5.5	6.2	6.9	6.3	7.6	6.4	6.2	-11	16
Maryland	3.5	3.8	3.6	4.1	4.4	4.5	5.3	6.4	55	82
Pennsylvania	4.3	5.0	5.6	5.1	6.2	5.9	5.9	6.4	26	50
New Jersey	3.6	3.8	5.0	5.0	3.2	5.2	5.1	7.1	42	97
Ohio	2.2	2.7	3.2	4.3	5.2	6.3	6.7	7.1	65	223
Minnesota	4.7	5.4	5.7	7.1	4.1	8.8	8.4	8.0	13	71
Maine	3.2	3.7	4.4	4.9	8.7	5.0	6.0	8.2	68	157
Connecticut	3.7	4.0	5.1	5.4	4.6	5.7	5.8	9.2	70	148
Massachusetts	6.6	8.1	9.4	9.5	9.8	7.1	8.5	9.7	2	46
District of Columbia	8.9	9.4	11.2	11.1	9.5	8.9	9.7	15.1	36	69
Rhode Island	5.8	7.1	8.5	10.0	7.0	10.0	9.6	16.5	65	185
New York	13.2	12.8	14.2	16.3	10.5	16.2	15.9	17.9	10	35

NOTES: State Medicaid expenditures = Total Medicaid spending - (1-Federal Medicaid Assistance Percentage), unadjusted for tax/donation schemes. States ranked by 1991 values.

SOURCES: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States*, 1991; (Advisory Commission on Intergovernmental Relations, 1975-91).

burden for Medicaid was \$5.80 per \$100 of tax capacity, or 5.8 percent. State burdens vary considerably. For instance, New York, Rhode Island, and the District of Columbia spent \$17.90, \$16.50, and \$15.10 per \$100 of tax capacity, respectively; all spent more than twice the national average. Connecticut and Massachusetts spent \$9-\$10 per \$100 of tax capacity, more than 1.5 times the national average.

At the other end of the spectrum, Wyoming spent \$2.20 per \$100 of tax capacity, or just 38 percent of the national average. Nevada and Utah each spent less than \$3 per \$100 of their potential tax capacity on Medicaid.

From 1975 to 1991, the average taxpayer burden for Medicaid increased 93 percent, from \$3 to \$5.80 per \$100 of tax capacity. In other words, State-only spending on Medicaid grew almost twice as fast as the nominal value of State tax bases! Once again, there was considerable variation in the growth in taxpayer burden. For instance, from 1975 to 1991, West Virginia experienced an increase of almost 370 percent, from less than \$1 to over \$4 per \$100 of capacity. Alaska, Wyoming, Ohio, Tennessee, Delaware, Missouri, and Florida all experienced increases of more than 200 percent.

At the other end of the spectrum, Hawaii experienced an aggregate increase of only 9 percent over 17 years. Michigan, Wisconsin, California, and Washington all had increases of less than 20 percent.

A strong inverse relationship exists between aggregate growth in taxpayer burden from 1975 to 1991 and the magnitude of the burden in 1975 (Pearson correlation coefficient =  $-.51$ ). For example:

- New York labored under the highest taxpayer burden of any State in 1975, but experienced just a 35-percent increase in its burden in 17 years.

- Similarly, taxpayer burden increased only 10 percent in Wisconsin and 16 percent in Michigan from 1975 to 1991. Both States were among the top 10 most burdened States in 1975.

In contrast, we find that:

- Florida, with the sixth lowest tax burden in 1975, experienced a 274-percent increase in its taxpayer burden during the subsequent 17 years. It still remained nearly \$1 below the national average, however.
- West Virginia, with the second lowest tax burden in 1975, experienced the highest aggregate growth rate in Medicaid burden, 369 percent.

Unequal rates of change in taxpayer burden on a State-by-State basis have led to some significant changes in relative taxpayer burden over time. Florida, Tennessee, Delaware, New Hampshire, Ohio, Kentucky, and Missouri all experienced major increases in their relative burdens, moving ahead of 15 or more States by 1991 compared with 1975. Extraordinary increases in State-only Medicaid expenditures are generally responsible and not slow growth in tax capacity—except for Florida. On the other hand, Hawaii, Colorado, Oklahoma, Washington, and Alabama all had declines in relative tax burdens of 15 States or more. Growth in State-only Medicaid spending was relatively low in all States with marked declines in relative tax burdens, while their growth in tax capacity was average.

### **Medicaid Equity Parameter**

To show how much equity in the Medicaid tax burden existed in 1991, State-only per capita Medicaid expenditures were plotted against per capita tax capacity (Figure 3 and Table 6). The scatter plot shows minimal horizontal equity.

States with similar tax capacities vary dramatically in their own spending on Medicaid. Comparing States with tax capacities around the U.S. mean of \$2,087, we find Oregon spending \$87.58 per capita on Medicaid, Minnesota spending \$169.16 per capita, and New York, \$382. A number of high tax capacity States do spend relatively large amounts on their Medicaid programs (e.g., Massachusetts, Connecticut, the District of Columbia), but many other wealthy States do not, such as Hawaii, Nevada, Wyoming, and Colorado. While the average State spent \$122 per capita on Medicaid, Colorado, Nevada, and Wyoming spent \$90, \$70, and \$61 per capita, respectively, on Medicaid. In contrast, similarly wealthy States such as Massachusetts, Connecticut, New Jersey, and the District of Columbia spent, respectively, \$236, \$248, \$176, and \$387 per capita on Medicaid.

Despite the numerous outliers in Figure 3, some overall progressivity in Medicaid program financing appears to exist. Using ordinary least squares, we regressed per capita Medicaid spending on per capita tax capacity, both in logs, and plotted the relationship on Figure 3. Our estimated equity coefficient is 1.21, (*t*-statistic = 3.53;  $R^2=0.19$ ) implying that for every 1-percent increase in the typical State's per capita tax capacity, State-specific Medicaid spending rises 1.21 percent. The coefficient of vertical equity for 1991 was slightly higher than the 1.15 figure estimated for 1981 (Cromwell, Hurdle, and Schurman, 1987). This amounts to a 5-percent increase in the elasticity of State-specific spending with respect to greater tax capacity over 10 years. However, vertical equity declined since 1988, when the estimated equity coefficient was 1.54. During the 3 years in which Medicaid cost increases were most

significant, vertical equity appears to have declined 21 percent, although richer States still spend disproportionately more of their own money on Medicaid compared with poorer States.

We also regressed 1991 per capita Medicaid spending, adjusted for T&D schemes, on per capita tax capacity. The estimated coefficient increased to 1.27. The higher coefficient indicates that States' adoption of provider T&D schemes improved vertical equity slightly—at least in 1991.

### ACHIEVING PROGRAM EQUITY THROUGH FMAP

States clearly vary greatly along two key dimensions: equity to the poor in terms of Medicaid breadth and depth of coverage, and equity to taxpayers in terms of the program's financial burden. Can government policymakers achieve greater equity along both dimensions simultaneously using the policy instruments at their disposal?

Eliminating inequities represents an important policy objective to those who feel that both the poor, who enjoy the benefits, and taxpayers, who ultimately support the Medicaid program, should be treated equally no matter where they live.

#### Conceptual Approach

Grannemann and Pauly (1983) show how it is possible to simultaneously achieve horizontal equity to both recipients and taxpayers through a revised set of Federal cost-sharing rates (U.S. General Accounting Office, 1993). First, define

$$\text{Recipient Equity: } \frac{MEX_s/P_s}{(RI_s)POOR_s} = B^* \quad (4)$$

$s = 1, \dots, 50$  States

**Figure 3**  
**Per Capita State-Only Medicaid Spending (SMEX) Versus Tax Capacity (TC): 1991**

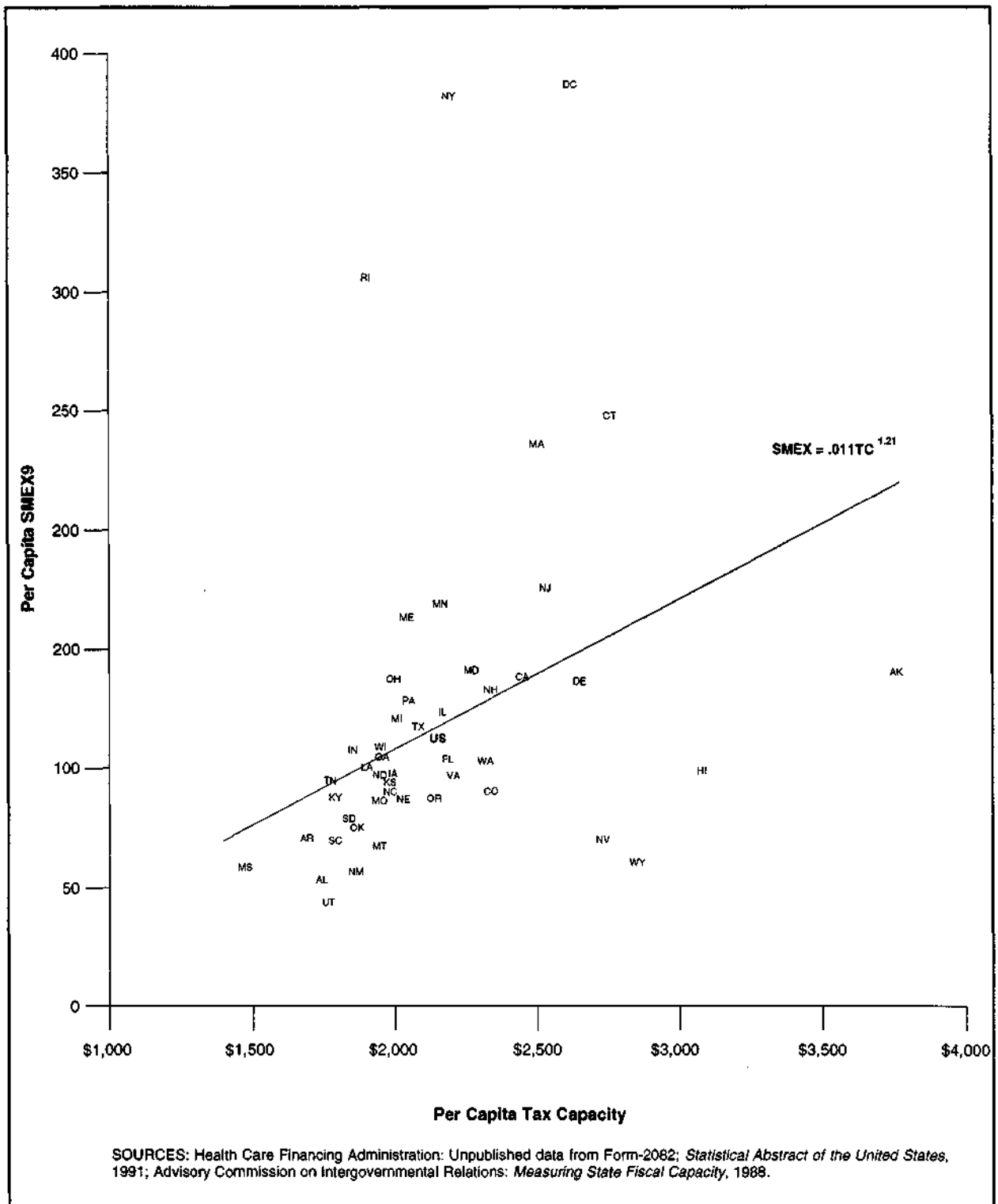


Table 6

**Per Capita Tax Capacity (TC) and State-Only Medicaid Spending (SMEX), Original and Adjusted for Tax and Donation Schemes, by State: 1991**

State	TC	Original SMEX	Adjusted SMEX	Per \$100 TC	
				Original SMEX/TC	Adjusted SMEX/TC
U.S. Average	\$2087.02	\$121.59	\$115.70	5.8	5.5
Alabama	1,688.19	53.46	45.69	3.2	2.7
Alaska	3,703.98	140.52	140.52	3.8	3.8
Arkansas	1,631.79	70.74	70.74	4.3	4.3
California	2,392.06	138.15	135.69	5.8	5.7
Colorado	2,280.31	90.22	90.22	4.0	4.0
Connecticut	2,703.89	247.78	247.78	9.2	9.2
Delaware	2,593.72	136.53	136.53	5.3	5.3
District of Columbia	2,566.69	386.97	386.97	15.1	15.1
Florida	2,135.64	103.72	92.04	4.9	4.3
Georgia	1,888.62	104.05	99.30	5.5	5.3
Hawaii	3,030.76	99.23	99.23	3.3	3.3
Idaho	1,705.60	57.48	57.48	3.4	3.4
Illinois	2,122.27	123.69	123.69	5.8	5.8
Indiana	1,873.34	107.27	107.27	5.7	5.7
Iowa	1,944.84	97.18	97.18	5.0	5.0
Kansas	1,932.73	90.43	90.43	4.7	4.7
Kentucky	1,734.23	87.93	68.07	5.1	3.9
Louisiana	1,850.09	99.65	99.65	5.4	5.4
Maine	1,986.72	163.43	147.94	8.2	7.4
Maryland	2,212.66	140.95	140.95	6.4	6.4
Massachusetts	2,441.90	235.85	149.63	9.7	6.1
Michigan	1,962.12	120.78	100.41	6.2	5.1
Minnesota	2,104.92	169.16	168.91	8.0	8.0
Mississippi	1,413.15	58.52	51.80	4.1	3.7
Missouri	1,885.88	86.36	49.75	4.6	2.6
Montana	1,887.56	67.59	67.21	3.6	3.6
Nebraska	1,972.24	86.88	86.88	4.4	4.4
Nevada	2,672.27	70.36	70.36	2.6	2.6
New Hampshire	2,281.32	132.95	96.22	5.8	4.2
New Jersey	2,478.70	175.78	175.78	7.1	7.1
New Mexico	1,802.66	56.78	56.74	3.1	3.1
New York	2,140.69	382.23	377.28	17.9	17.6
North Carolina	1,928.24	89.09	76.44	4.6	4.0
North Dakota	1,892.83	97.57	97.57	5.2	5.2
Ohio	1,936.04	137.60	133.61	7.1	6.9
Oklahoma	1,806.54	75.15	75.15	4.2	4.2
Oregon	2,081.74	87.57	87.57	4.2	4.2
Pennsylvania	1,993.20	128.42	114.71	6.4	5.8
Rhode Island	1,852.26	305.97	305.97	16.5	16.5
South Carolina	1,731.03	70.06	65.67	4.0	3.8
South Dakota	1,785.56	77.26	77.26	4.3	4.3
Tennessee	1,718.15	94.76	94.76	5.5	5.5
Texas	2,026.83	117.53	117.53	5.8	5.8
Utah	1,709.65	43.80	41.27	2.6	2.4
Vermont	2,182.20	134.27	131.95	6.2	6.0
Virginia	2,152.10	97.01	97.01	4.5	4.5
Washington	2,259.61	103.09	102.69	4.6	4.5
West Virginia	1,596.22	67.40	67.40	4.2	4.2
Wisconsin	1,884.80	109.60	109.60	5.8	5.8
Wyoming	2,792.55	60.58	60.58	2.2	2.2

SOURCES: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States, 1991*; (Advisory Commission on Intergovernmental Relations, 1993).

where

- MEX<sub>s</sub>*, is nominal spending on Medicaid in State *s*;  
*P<sub>s</sub>*, is our Medicaid price deflator that puts spending in real terms;  
*RI<sub>s</sub>*, is a recipient costliness index to adjust State spending for differences in the health status of the poor (described below);  
*POOR<sub>s</sub>*, is the number of poor people in the *s*th State; and  
*B\** equals a predetermined optimal level of Medicaid benefits, assumed constant across all States to achieve horizontal equity to recipients.

In comparing State spending on the poor, two adjustments are important. First, higher service prices (or payment rates) must be removed from expenditures in order to compare real services used by the poor across States. Second, States vary in the demographic characteristics of the poor in ways that affect spending. Wyoming, for example, has a mix of recipients that is 21 percent less costly than the national average. Dividing spending by the recipient costliness index as well as prices adjusts for important mix differences that would distort comparisons of horizontal equity. Each State's costliness index was constructed by weighting a State's own recipient proportions by national per recipient expenditures among the aged, the blind and disabled, AFDC adults, and AFDC children. The resulting adjusted recipient average cost was then indexed by dividing by the national average cost per recipient in 1990. Alabama, for example, exhibited the most costly recipient mix, 31 percent above average, while Alaska's mix was 28 percent less costly on average. See Cromwell et al. (1994) for a more detailed description.

Next, horizontal taxpayer equity is defined as:

$$\text{Taxpayer Equity: } \frac{SMEX_s/POP_s}{TC_s} = \frac{(MEX_s/POP_s)(1-FMAP_s)}{TC_s} = TE^* \quad (5)$$

where

- TC<sub>s</sub>*, is per capita tax capacity;  
*FMAP<sub>s</sub>*, is the Federal matching rate, and  
*TE\** is the "optimal" level of taxpayer burden or effort, again assumed constant across States to ensure horizontal equity.

Multiplying both sides of equation 4 by  $(RI_s)(POOR_s)(P_s)$  and substituting for *MEX<sub>s</sub>* in equation 5, we have

$$(B^*)(V_s) = TE^* \quad (6)$$

where

$$V_s = \frac{RI_s P_s (POOR_s / POP_s) (1 - FMAP_s)}{TC_s} \quad (7)$$

For fixed prices, poverty rates, recipient mixes, and tax capacity in each State in a given year, it is theoretically possible to establish a set of *FMAP<sub>s</sub>* that solve equation 7, effectively translating equity to the poor (*B\**) into perfect horizontal equity to taxpayers as well. Equal *B\** and *TE\** across States imply that the poor would all receive the same real level of services while taxpayers in every State would be equally burdened in achieving uniform spending on the poor. This is a necessary condition for achieving equity—and the only one considered by Grannemann and Pauly (1983) as well as by this article. Equation 7 does not guarantee perfect equity; however, States would undoubtedly respond to *FMAP* changes by altering depth and breadth coverage.

The U.S. General Accounting Office (1983) goes further to discuss vertical equity among taxpayers using the concept of "equalized tax effort." It can be expressed as

$$TE_s = V_s B^\alpha \quad (8)$$

where  $TE_s$  = actual tax effort, and is the tax effort elasticity of offering greater real Medicaid benefits per person in poverty. For  $\alpha > 1$ , tax effort in a State rises faster than any increase in "uniform" benefits, increasing State burden, and vice-versa. If  $\alpha < 1$ , then Federal sharing must increase with benefit level to offset some of the greater tax burden. Any effects  $FMAP$  has on equation 8 are embedded in  $V_s$ .

Adjusting  $FMAP$ , will, of course, result in subsequent changes in State programs that deviate from perfect equity. The following analysis is indicative of the extent of change in Federal-State sharing that would have to take place before any second-round responses occurred. The implications of ignoring such responses are discussed in a concluding section.

### Empirical Relationship Between Spending on the Poor and Taxpayer Generosity

Figure 4 plots the relationship between real total Medicaid spending per person in poverty,  $B_s$ , on the vertical axis and taxpayer effort or burden,  $TE_s$ , on the horizontal axis. Curve  $ZZ$  represents the overall relationship between taxpayer burden and generosity to the poor, based on equation 8. It is estimated by solving equation 8 for  $B$  and regressing the log of  $B$ , on the natural log of tax effort:

$$\ln(B_s) = \ln(V_s) + (1/\alpha)\ln(TE_s) + \varepsilon_s \quad (9)$$

where  $\varepsilon_s$  = State error term.

This estimated relationship is

$$\ln(B) = 8.99 + .51 \ln(TE) \quad R^2 = .26 \quad (10)$$

(24.6) (4.2)  $F = 17.7$

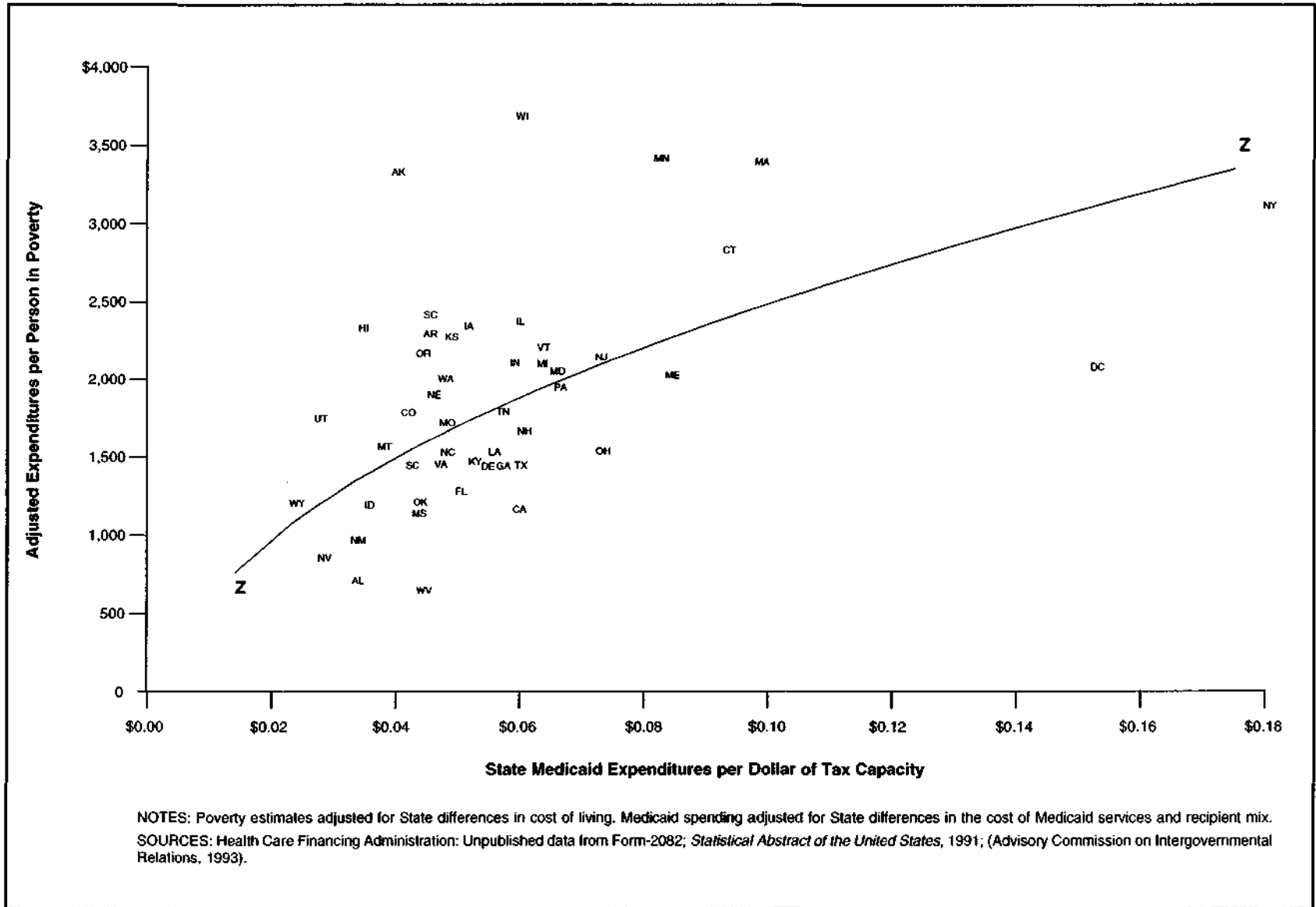
so that  $\alpha = 1/.51 = 1.79$  ( $t$ -statistics given in parentheses.) Empirically, a 1-percent increase in real spending per person in poverty implies a 1.79-percent increase in Medicaid tax effort. Alternatively, a 1-percent increase in State-only Medicaid spending per tax dollar results in only a .51-percent increase in real benefits per poor person.

The  $R^2$  of the double-log equation is .26, implying that 26 percent of the variance in benefit level is explained by variations in Medicaid tax effort as defined by equation 5. If there were "perfect" vertical equity, all States would fall along the curved line in Figure 4 and the  $R^2$  would be 1.0 (U.S. General Accounting Office, 1983). With 74 percent of the variation unexplained, considerable inequity remains in the program, even applying the "weaker" horizontal equity criterion.

The overall relationship between taxpayer burden and generosity to the poor is unequivocally positive, suggesting that States offering a generous Medicaid program to their indigent populations do so by bearing a larger Medicaid tax burden. New York represents the most extreme example, spending 1.7 times in real terms what the average State spends per person in poverty (\$3,115 versus \$1,806), at 3.6 times the cost to taxpayers. In contrast, West Virginia, Nevada, New Mexico, and Alabama all spent less than 60 percent of the U.S. average on the poor, while bearing relatively low tax burdens for Medicaid.

If  $FMAP$  completely offset systematic differences in medical care prices, poverty rates, recipient mix differences, and State wealth, then all States would fall on the line in Figure 4 and vertical equity would

**Figure 4**  
**Taxpayer Burden Versus Spending on the Poor: 1991**





be achieved in the U.S. General Accounting Office framework. For States above the line, their FMAPs are “too high” given their economic factors. That is, the Federal Government shares too much with taxpayers in order to achieve a particular overall spending level on the poor. From Figure 4, excessive FMAPs would appear to be the case for States such as Massachusetts, Connecticut, Minnesota, and Arkansas. Conversely, FMAPs are too low in California, Mississippi, and the District of Columbia, among others, to offset high medical care prices, poverty rates, and/or low tax capacities in order to achieve a “national” level of real Medicaid benefits per poor person in the State. An interesting question is whether some States are above the line because of burdensome tax efforts to provide “average” levels of health services or because their eligibles are using services at a much higher rate than in other States.

### FMAP Simulations

What Federal matching rates would be required to allow every State to purchase the same real services for the poor at equal tax burdens, thereby achieving perfect horizontal equity? Although an unrealistic scenario, the degree of change in *FMAP*, is illustrative of how far the system deviates from what many would argue is a desirable goal. The answer can be determined by solving equation 7 for *FMAP*, substituting into equation 6, then inserting the desired levels of spending ( $B^*$ ) and taxpayer burden ( $TE^*$ ). The simulation equation is

$$FMAP_i = 1 - [TE^*/B^*] \cdot [TC_i / (P_i R_i (POOR_i / POP_i))] \quad (11)$$

To conduct the simulation, we set  $TE^* = 0.0662$  and  $B^* = \$1,884$ , the population-

weighted U.S. averages. Equation 11 will simulate the necessary FMAPs that allow each State to offer the U.S. real Medicaid spending per person or \$1,884 while, at the same time, imposing \$6.22 per \$100 of tax capacity onto each State's taxpayers under the (admittedly unrealistic) assumption of no changes in State programs.<sup>4</sup> Given these fixed values, States with higher tax capacities or lower medical prices or lower poverty rates will require lower FMAPs to achieve the dual equality goals.

Table 7 presents the results of the simulation. Each State's official 1990 FMAP is shown in the first column. Its simulated FMAP is in column two, while the required change in FMAP is shown in column three. Each State's own Medicaid tax burden and total spending per poor person are shown in the last two columns. The results indicate that the overwhelming majority of States would have their Federal matching percentage lowered, some of them considerably, if taxpayer burden and spending on the poor were to be simultaneously equalized. Indeed, eight States would have to experience negative FMAPs, effectively paying money to the Federal Government, to achieve the dual targets: Alaska, Hawaii, Connecticut, Oregon, Massachusetts, New Hampshire, Washington, and Wyoming. Why does this happen? For example, Connecticut spends \$2,835 on Medicaid services in real terms, including the Federal portion, on every poor person in the State, a number far higher than the national average. Under equality of real spending per poor person at the national average, the State would have to lower its total spending to \$1,884. In so doing, it

<sup>4</sup>Equation 11 also ignores the equalizing effects of other Federal taxes paid by State taxpayers. Presumably, wealthier States contribute more to Federal Medicaid expenditures than poorer States. The data necessary to adjust equation 11 for these taxes were unavailable.

Table 7

## Simulated FMAPs With Horizontal Equity to Taxpayers and Medicaid Equity to the Poor, by State: 1990

State	1990 FMAP	Simulated FMAP	Difference	State Medicaid Tax Burden	Real Spending per Poor
Alabama	72.9	72.5	-0.4	0.032	708
Alaska	50.0	-39.9	-89.9	0.038	3,327
Arkansas	75.6	48.5	-27.1	0.043	2,293
California	50.0	55.7	5.7	0.058	1,164
Colorado	54.7	15.5	-39.2	0.040	1,788
Connecticut	50.0	-52.9	-102.9	0.092	2,835
Delaware	50.1	NA	NA	0.053	1,439
District of Columbia	50.0	67.0	17.0	0.151	2,078
Florida	54.6	43.7	-10.9	0.049	1,278
Georgia	61.7	50.3	-11.4	0.055	1,442
Hawaii	52.5	-40.1	-92.6	0.033	2,330
Idaho	73.2	60.7	-12.5	0.034	1,194
Illinois	50.0	16.8	-33.2	0.058	2,373
Indiana	63.8	46.2	-17.6	0.057	2,105
Iowa	65.0	9.6	-55.4	0.050	2,343
Kansas	59.2	1.5	-57.7	0.047	2,274
Kentucky	72.8	60.8	-12.0	0.051	1,475
Louisiana	75.4	69.7	-5.7	0.054	1,533
Maine	62.4	48.3	-14.1	0.082	2,028
Maryland	50.0	27.4	-22.6	0.064	2,053
Massachusetts	50.0	-5.3	-55.3	0.097	3,395
Michigan	55.4	36.4	-19.0	0.062	2,101
Minnesota	54.4	17.6	-36.8	0.080	3,416
Mississippi	79.9	77.9	-2.0	0.041	1,139
Missouri	60.8	25.4	-35.4	0.046	1,720
Montana	71.7	50.7	-21.0	0.036	1,565
Nebraska	64.5	16.6	-47.9	0.044	1,901
Nevada	50.0	14.7	-35.3	0.026	853
New Hampshire	50.0	-15.3	-65.3	0.058	1,665
New Jersey	50.0	8.5	-41.5	0.071	2,140
New Mexico	74.3	70.9	-3.4	0.031	965
New York	50.0	51.1	1.1	0.179	3,115
North Carolina	66.5	46.3	-20.2	0.046	1,530
North Dakota	72.7	NA	NA	NA	NA
Ohio	60.6	54.4	-6.2	0.071	1,536
Oklahoma	70.7	61.2	-9.5	0.042	1,212
Oregon	63.5	-34.2	-97.7	0.042	2,167
Pennsylvania	56.8	16.2	-40.6	0.064	1,950
Rhode Island	53.2	NA	NA	NA	NA
South Carolina	72.6	59.7	-12.9	0.040	1,447
South Dakota	72.5	23.4	-49.1	0.043	2,419
Tennessee	68.4	53.9	-14.5	0.055	1,792
Texas	64.1	36.5	-27.6	0.058	1,446
Utah	75.1	6.8	-68.3	0.026	1,746
Vermont	61.3	13.5	-47.8	0.062	2,207
Virginia	50.0	27.0	-23.0	0.045	1,457
Washington	54.9	-13.0	-67.9	0.046	2,005
West Virginia	77.6	67.0	-10.6	0.042	645
Wisconsin	60.3	19.1	-41.2	0.058	3,688
Wyoming	69.1	-9.9	-79.0	0.022	1,203

NOTES: FMAP is Federal Medical Assistance Percentage. NA is not available. Simulated FMAPs based on national average real spending per poor person = \$1,884 and taxpayer burden of 0.0662.

SOURCES: Health Care Financing Administration: Unpublished data from Form-2082; *Statistical Abstract of the United States*, 1991; (Advisory Commission on Intergovernmental Relations, 1993); *Medicare and Medicaid Data Book*, 1990.

would lower its own spending on Medicaid per tax dollar (= .092) more than enough to bring its taxpayer burden down to \$6.22 per \$100 of tax capacity. To achieve horizontal equity, the State would have to pick up more than 100 percent of the \$1,884, a quite unrealistic outcome.

A few large States appear to win under the dual-equality criterion, including California and New York. Californians spend slightly less than the national average per tax dollar but purchase much less than the national average bundle of services for its poor, due largely to high medical care prices. It would need a higher FMAP to substantially raise real spending on the poor. The District of Columbia would also enjoy a large jump in its Federal matching rate. In New York's case, even if it reduced its spending from \$3,115 to \$1,884, it still would experience a higher-than-average tax burden, requiring a small (1.1 percentage point) increase in its FMAP.

Clearly, such broad redistributions of Federal Medicaid dollars would be politically infeasible, nor are they desirable given the likely State cutbacks. Applying any vertical equity criterion would only have made matters worse. What the numbers do show is the enormous disparity in State generosity to the poor in the current program. They also point to "excessive" Federal sharing either because a State's tax capacity would support more State spending (e.g., Nevada) or a State's level of real spending on the poor is out of line with most other States (e.g., Minnesota and Wisconsin).

## DISCUSSION

The Medicaid program is now almost 30 years old. Established as a complement to the long-established welfare system, the program has grown so rapidly that it now dwarfs cash outlays to the poor. In

hindsight, the program has been plagued by technical problems and inconsistent goals on the part of the Congress and State legislatures. These have led to increasingly intrusive direction from Washington as Congress grapples with the growing number of uninsured in America. Here we review some of the more salient flaws in the way the system is currently structured and suggest some improvements.

Research presented in this article and elsewhere has documented broad ideological differences across States in the value of extending health care coverage (along with cash welfare) to the Nation's poor. The Congress recognized these differences at the beginning by mandating a minimum set of eligibility criteria and covered services to ensure reasonable access to care. Since the early 1980s, however, the social experiment allowing States more flexibility in setting eligibility criteria has shown that the majority of voters choose to limit coverage of the poor as one means of controlling State budgets. Federal matching funds were not enough to overcome such preferences, and Congress, representing a broader national constituency, chose to mandate expanded eligibility to cope with the growing numbers of uninsured poor. As the number of poor and uninsured grew because of higher and higher private insurance premiums, Washington found itself taking greater (instead of lesser) control over State enrollment and service decisions. Furthermore, simulations by Grannemann and Pauly (1983) confirm the conclusions that States will drastically cut eligibility and spending under block grants.

The Federal Government shares in the program's current inequities to the poor and to taxpayers. Several problems have been identified with the way Federal matching rates are calculated. For one, the sliding scale is based on an imperfect

measure of the ability of State taxpayers to support their own government. Per capita income has two important drawbacks. First, it does not adequately capture certain tax bases available to States, such as property values, corporate profits, and mineral extraction. Second, and possibly even more problematic, per capita income is relatively insensitive to short-run swings in the business cycle. State economies vary more than the national economy. Hence, to smooth out the Medicaid burden on local taxpayers and ensure continuous coverage of the poor, it is imperative that the Federal Government have a sharing arrangement that responds quickly to local downturns. The ACIR measure of tax capacity used in this article is preferred in this regard.

Another problem with the Federal sharing algorithm is that it covers too narrow a range to ensure horizontal or vertical tax equity across States. Our simulations show that a very large range of matching rates would be necessary to achieve perfect (or even near perfect) horizontal equity. The fact that this is politically infeasible points to the inconsistent goals of satisfying both the members of Congress and assuring equal access to health care for the poor across the country through the State-administered Medicaid program. Indeed, it is impossible through a set of FMAs alone to achieve Federal goals of equal access and taxpayer equity while satisfying State voters (Grannemann and Pauly, 1983). Any significant changes in Federal matching rates will inevitably lead to cutbacks in coverage and/or services in some States that may already be less generous to the poor.<sup>5</sup> For those who would question whether large inequalities in State coverage of the poor are undesirable if they reflect true differences in voter preferences, the problem

of interstate migration in search of better health care raises equity and efficiency questions (Musgrave and Musgrave, 1989). Is health care a "right" of the poor? If not, then why is health care extended uniformly to all elderly through the Federal Medicare program? Are non-elderly poor different? If so, why do the poor (and others) become deserving at age 65? These are challenging questions that cannot be addressed solely by tinkering with Federal matching rates.

A third drawback with the sharing algorithm is that it fails to take into consideration demographic and distributional factors important in determining taxpayer burden. The poor in the 50 States are not all the same, nor are their numbers linked perfectly with State per capita income. Wyoming, for example, has many fewer female-headed households, or aged, blind, or disabled. It also has relatively few poor (11 percent in 1990). Yet, its Federal matching rate in 1990 was 69 percent based on its per capita income. Wyoming, and many other States, need less Federal support because their mix of poor is less likely to be categorically eligible.

Yet another weakness of the sharing arrangement is the opportunity for States to creatively finance their programs using T&D schemes. Although we find evidence that such schemes enhanced overall program equity in 1991, they did so at a great cost to the Federal Government—far greater than would have been necessary with more targeted changes in the underlying matching rates.

In sum, the Federal strategy of matching Medicaid State funding using a sliding rate based on income has failed to accomplish the national goals originally set out for the Medicaid program. The poor still do not enjoy the access to health care or the level of insurance coverage of wealthier

<sup>5</sup>For illustrative effects, see Grannemann and Pauly (1983).

Americans intended in the enabling legislation, nor do taxpayers in the States contribute equitably to the poor's health care according to their true ability to pay. The Congress has chosen to mandate more and more coverage and services; States have responded to increasing fiscal pressures by creatively financing the program out of Federal funds. As the funding loopholes are closed, States will be forced to find other ways of paying for the mandates. How much of the burden will fall inequitably on taxpayers and how much on the level and quality of medical care offered the poor remains to be seen.

It is clear by now that health care coverage of the poor must be divorced from welfare eligibility. The Congress has admitted as much by requiring major expansions without requiring States to offer cash welfare as well. Applying Federal poverty standards to all potential eligibles, regardless of age or gender, would promote greater equity to the poor across States.

In addition, the Federal Government should take more financial responsibility for evening out the taxpayer burden. This requires switching bases from per capita income to tax capacity, as recommended by the Advisory Commission on Intergovernmental Relations and the U.S. General Accounting Office. Tax capacity would have to be updated yearly (it is currently recalculated every 2-3 years) and the sliding scale widened somewhat to redistribute more funds to heavily burdened States, although not necessarily to the extent implied by our simulations. In redistributing funds, however, care should be taken to adjust for higher medical care prices in some States and to avoid overfunding excessively lavish programs in others. Our simulations have shown that Federal sharing rates would fall in some States that spend exceptional amounts per

poor person compared with the national average. If States choose to provide broader coverage of the poor than nationally determined using Federal poverty standards, or to offer deeper coverage, then they should pay the full costs instead of enjoying at least 50 percent matching of their outlays regardless of the needs of the poor in other States.

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