



U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

**VARIATIONS IN THE
MEDICAID SAFETY NET FOR
CHILDREN AND YOUTH WITH
HIGH MEDICAL COSTS:
A COMPARISON OF FOUR STATES**

November 1990

Office of the Assistant Secretary for Planning and Evaluation

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1.0 INTRODUCTION

Many children with high medical expenses have all or some of their medical care paid by the Medicaid program. This is true for two primary reasons. First, children with severe medical conditions are more likely to be poor. For example, children with chronic disabilities are 30 percent more likely than children without disabilities to live in poor households (Mathematica Policy Research, 1989). Second, the Medicaid program serves as a health insurance safety net for many children who incur high medical costs that are not covered by other forms of payment. Many children become enrolled in the Medicaid program as a direct result of incurring high medical costs which are not covered, or which are inadequately covered, by other forms of insurance (NACHRI, 1989).

However, the extent to which the Medicaid program serves as a health insurance safety net for children with high medical expenses varies from State to State, depending upon the characteristics of each State's Medicaid program. This study examined variations in the Medicaid safety net in four States: California, Georgia, Michigan and Tennessee by examining Medicaid enrollment, utilization, and expenditure patterns among children and youth who incur high costs in the Medicaid program. The major research questions addressed by the study include:

- Through what eligibility pathways do high-cost children and youth become enrolled in the Medicaid program?
- What health care utilization patterns account for their high Medicaid expenditures?
- How do the program characteristics of State Medicaid programs affect the size and characteristics of high-cost children and youth on Medicaid?

2.0 DATA SOURCES

The data for this study were drawn from the Medicaid Tape-to-Tape database developed by the Health Care Financing Administration.¹ The Tape-to-Tape database is developed from the State Medicaid Management Information Systems (MMIS) of selected States. MMIS files are Medicaid eligibility and claims files that are produced from the automated payment systems which States use to process claims from providers of Medicaid-covered services. The Tape-to-Tape database project converts raw MMIS data from selected States into uniform enrollment, claims and provider files that can be used to make direct -comparisons of Medicaid populations across States. The Tape-to-Tape database is universal in that all Medicaid enrollees and all of their Medicaid claims contained on individual State MMIS files are also included in the Tape-to-Tape files. For the present study, one full year of Medicaid data in four States were used to identify and describe the characteristics of high-cost children on Medicaid.

¹ Limitations of the Tape-to-Tape database that are relevant to this study are discussed in Appendix A.

3.0 DEFINITION OF STUDY POPULATION

For this study, a research file of high-cost, Medicaid children and youth was extracted from the Tape-to-Tape "Early Returns" (summary) files. The study population was defined as children and young adults up to age 25 with total Medicaid claims in excess of \$25,000 in calendar year 1986. Since 1986 data were not available in Georgia and Michigan at the time of this study, an equivalent cost threshold for defining the study population was computed for calendar years 1984 in Georgia and 1985 in Michigan using the medical care component of the Consumer Price Index.

It is important to note that our definition of "high-cost" children did not adjust for length of enrollment on Medicaid. We simply defined a high-cost child as anyone who had total claims in excess of \$25,000 within a given calendar year. So, for example, a child who was not enrolled in Medicaid in the first eleven months of 1986, but became enrolled in December of 1986 and incurred \$24,999 in payments during that month (and perhaps more in calendar year 1987) would not have been included in our sample, while a child enrolled the entire year and who incurred average monthly costs of \$2,500 would be included.

Finally, the fact that a child on Medicaid incurred high costs does not necessarily mean that he or she had a long-term disability. Acute illnesses, particularly those which require extended hospital stays, can also result in high medical costs. Thus, our sample of high-cost children and youth on Medicaid includes both children with severe chronic disabilities and children with acute illness episodes who may have eventually achieved recovery, or who may have died, from their illness.

4.0 MEDICAID PROGRAM CHARACTERISTICS IN THE STUDY STATES

One objective of the study was to examine Medicaid enrollment and expenditure patterns of high-cost children in the context of State-specific Medicaid program characteristics. Although Federal law requires all State Medicaid programs to cover persons in certain eligibility categories and to provide a minimum benefit package, States still retain considerable discretion in regard to coverage of optional eligibility groups, optional Medicaid benefits, and provider reimbursement policies. States may also impose limitations on both required and optional benefits.

TABLE 1. Selected Medicaid Program Characteristics in the Four Study States: 1984-1986				
	CA-1986	GA-1984	MI-1985	TN-1986
OPTIONAL GROUPS				
Medically Needy	Yes	No	Yes	Yes ¹
Ribicoff Children	Yes	No ²	Yes	Yes ³
AFDC-UP Families ⁴	Yes	No	Yes	No
All financially eligible pregnant women	Yes	Yes ⁵	Yes	Yes
FINANCIAL CRITERIA⁶				
AFDC (two-person)	\$498	\$174	\$351	\$119
SSI/SSP (one-person)	\$533	\$314	\$351	\$336
Medically needy (one-person)	\$667	NA	\$352	\$150
Medically needy (4-person)	\$884	NA	\$492	\$258
<ol style="list-style-type: none"> 1. Tennessee reinstated medically needy coverage for SSI-related recipients in 1986, after having eliminated such coverage in 1982. 2. Georgia only covered certain only certain classifications of children who did not qualify as dependents in 1984 (e.g., children placed in foster homes). 3. Prior to July 1986, Tennessee only covered Ribicoff children up to age 18; in July of 1986 coverage was expanded to children up to age 21. 4. AFDC-UP families are those in which the principal wage earner is unemployed. 5. Georgia covered only first-time pregnant women in 1984. 6. Financial criteria were not adjusted for differences in study years; the criteria shown are the actual criteria which applied in the year specified. 				

Medicaid eligibility policy is too complex to summarize in this paper, but it is important to highlight some of the major differences across the four States in this study. Table 1 lists some of the optional eligibility groups for children and young adults that were covered in the four States during the study period. One major eligibility option in State Medicaid programs is whether or not to adopt a "medically needy" program. The medically needy program option extends Medicaid coverage to certain persons who do not meet the financial criteria of the categorically-related cash assistance programs (AFDC or SSI) but who still require public assistance for their health care costs.² Medically needy programs allow States to set higher income and asset criteria than are

² Most persons who receive Aid to Families with Dependent Children (AFDC) benefits or Supplemental Security Income (SSI) benefits are automatically eligible for Medicaid coverage.

used for AFDC cash assistance, and also allow persons to qualify for Medicaid through "income spend-down."³ Income spend-down allows Medicaid applicants to deduct medical expenses from their incomes in order to meet Medicaid financial criteria. Thus, in States with medically needy programs, individuals with incomes above Medicaid financial criteria can qualify for Medicaid if their medical expenses exceed their ability to pay their bills from their own resources. They are liable for part of their expenses, but once they incur medical expenses equal to their "spend-down" liability, Medicaid will pay for all other covered expenses.

Three of the four study States--California, Michigan and Tennessee--had medically needy programs during the study period, while Georgia did not. Thus, in Georgia, during the study year, Medicaid coverage was almost exclusively limited to children and youth who were receiving cash assistance from the Aid to Families with Dependent Children (AFDC) program or who were receiving Supplemental Security Income (SSI) benefits as disabled persons.

Another important eligibility option is whether States elect to cover so-called "Ribicoff Children." Named after the Connecticut Senator who sponsored this Medicaid expansion, the Ribicoff Children option allows States to provide Medicaid coverage for children in poor two-parent households, since the AFDC program and AFDC-related Medicaid eligibility groups generally limit benefits to families in which one parent is absent or unemployed. Again, California, Michigan and Tennessee provided coverage for Ribicoff Children during the study year, while Georgia did not.⁴

Another key difference across Medicaid programs is the financial criteria used for AFDC and SSI benefits in each State. Since most recipients of AFDC and SSI cash assistance are eligible for Medicaid, the financial criteria used in establishing benefits under AFDC and SSI have a large impact on Medicaid eligibility. As shown in Table 1, California had by far the highest income criteria in both of these cash assistance programs. Michigan had significantly higher benefit levels in its AFDC program than Georgia or Tennessee, but only slightly higher benefit levels in its State supplementation of Federal SSI benefits. Neither Georgia nor Tennessee provided any State Supplementation to Federal SSI payments. Since medically needy income levels are tied to AFDC levels, AFDC income limits also affect the number of additional persons who might qualify under a medically needy program. Medically needy income levels for families of four persons are also presented in Table 1.

The four States also differed in the amount, duration and scope of services covered in their Medicaid benefit packages, as shown in Table 2. State Medicaid policies with regard to reimbursement for inpatient hospital care were particularly

³ Although medically income levels may be set up to 133% of AFDC income levels, these medically needy levels are often below SSI benefit levels, if there is a large discrepancy between AFDC and SSI benefit levels in a given State.

⁴ The Deficit Reduction Act of 1984 (DEFRA) mandated that all States cover children born after September 30, 1983 up to the age of 5 in families which met AFDC financial requirements, regardless of family structure, but this coverage did not go into effect in Georgia until April of 1985, after the study period.

relevant to this study, since payments for hospital care represented a large percentage of Medicaid costs for the study population. During the study period, California and Michigan had per them or per diagnosis reimbursement rates for inpatient care (see Table 4). These restrictions could be exempted under special circumstances, permitting additional payments for children with extended hospital stays. Thus, payments for inpatient care in California and Michigan generally covaried directly with severity of illness, length of stay, and resource consumption. One expensive hospitalization could have qualified recipients in these two States as high-cost.

TABLE 2. Examples of Limitations on Selected Mandatory and Optional Medicaid Services Relevant to Children and Young Adults, Four States, 1984-1986				
Service Category	CA-1986	GA-1986	MI-1985	TN-1986
Inpatient Care	Covers up to 3 consecutive days for newborns unless additional days authorized; other care subject to prior authorization and limited to specific number of days for particular diagnosis or procedures (unless more days authorized)	Prospective reimbursement system based on flat per case rates with penalties for excess admissions	Under DRG per case reimbursement system; allowable lengths of stay are diagnosis-specific; some hospitals are paid prospective per diem rates	14-20 days per patient per year; prospective payment system based on diagnosis to determine maximum inpatient stay-- effective July 1, 1986
Home Health Services	More than 1 visit in a 6-month period requires prior authorization; maximum of 30 visits may be approved at any one time, valid over a period not exceeding 120 days	Limited number of part-time nursing visits and home health aide visits an/or hours; prior authorization required for medical supplies and equipment	Coverage beyond 60 days requires special approval	
Outpatient Hospital Services		Limited to 12 per year with no coverage for some procedures and services such as routine physical exams, and psychiatric day hospitals		
Physicians		Inpatient hospital visits limited to 1 per day; family planning visits limited to 2 per year		
Drugs		6 prescriptions per month allowed with max quantity for each prescription set at a 30-day supply		
SOURCES: Commerce Clearing House. <i>Medicare and Medicaid Guide</i> , Vol. 3, 1985.				

Hospital reimbursement policies in Tennessee were quite restrictive. Medicaid paid for a maximum of 20 inpatient days per patient per year in 1986. In addition, in July of 1986, a prospective payment system was implemented which mandated maximum covered lengths-of-stay that were diagnosis-specific. If a severely disabled child on Medicaid required a hospitalization that exceeded the 20-day limit or the specific limit placed on the length of stay for his/her diagnosis, the Medicaid program

would not pay for these "extra" days, and the hospital and/or the family had to seek other sources of payment.⁵ Thus, some Tennessee recipients with only one very long stay may not have met the high-cost criterion used to identify the sample for this study.

Hospital reimbursement policy in Georgia during 1984 also had a significant impact on the number of high cost children included in the study population. In Georgia, all inpatient hospital stays, no matter their duration or resource use, were reimbursed at a single flat rate unique to each hospital. Supplemental payments over the flat per case rate were sometimes permitted for "extreme outliers (i.e., admissions with unusually long lengths of stay). However, full payment for these "extreme outlier" stays would probably not appear in the data file used for this study because it often took one or more years to adjudicate these claims. Also, in 1984 Georgia hospitals were further restricted to a maximum allowable number of Medicaid admissions per year. If a hospital exceeded its maximum, the payment rate per case above the maximum number could be reduced to 50 or 25 percent of the flat case rate.

The Medicaid reimbursement rate per hospital admission was based on audited cost reports, and was intended to reflect the average cost of caring for Medicaid patients in that specific hospital. The rate included an inflation adjustment, and accounted for an expected number of expensive cases. Individual cases could be reimbursed as "outliers" only if they were extraordinarily high cost cases not included the average.

Since Georgia's hospital reimbursement system had the effect of spreading the costs of very expensive cases over a single flat rate, the methodology employed in this study likely underestimates the number of true high cost cases among noninstitutionalized children in this State. However, this reimbursement method is irrelevant to effects which restricted Medicaid eligibility options may have had on limiting the number of high cost cases in Georgia.

In summary, the Medicaid programs of the four study states varied dramatically in their coverage of children and youth in several important ways, as highlighted below:

- California had the most generous Medicaid program. It included a medically needy component and had high income eligibility standards for both cash assistance and medically needy enrollees. It covered poor children in two-parent families under the Ribicoff Children option. Its hospital reimbursement policy also placed fewer restrictions on admissions or length of stay compared to Tennessee and Georgia (although other mechanisms were used to contain costs in California).

⁵ In some cases, disabled children on Medicaid in Tennessee who required more than 20 days of hospital care could receive additional coverage through the State Title V Program for Children with Special Health Care Needs.

- Michigan was similar to California in most respects, except that its income eligibility criteria for AFDC and SSI benefits, and medically needy applicants, were considerably lower.
- Like California and Michigan, Tennessee also covered the medically needy and Ribicoff Children. However, other program characteristics made coverage for children and youth limited. Its income eligibility criteria for AFDC and SSI were very low. Most importantly, it severely restricted inpatient hospital care by limiting covered days to 20 per patient per year.
- Georgia differed from the other three study States on several important dimensions. In the study year--1984--it had no medically needy program and it applied stringent income criteria for determining eligibility for AFDC and SSI. It did not cover Ribicoff Children. Also, it employed a flat-rate hospital reimbursement system which may have affected the number of noninstitutionalized children identified in this study as high cost.

We expected these differences in Medicaid coverage policies to have impacts on the size and composition of the high-cost cohort of children and youth identified for this study, on Medicaid service utilization patterns, and on the patterns of Medicaid expenditures. These findings are presented below.

5.0 FINDINGS

5.1 Number of High-Cost Children and Youth by State

As shown in Table 3, there were a total of 10,374 children and young adults with total Medicaid claims in excess of \$25,000 over a one year period in the four States, accounting for between 0.18 percent and 0.26 percent of all Medicaid enrollees in each State. Relative to the total number of children on Medicaid in each State, Tennessee had more high-cost children than the other three States (39 per 10,000) and Georgia the lowest (24 per 10,000). Table 3 also shows the percentage of all children in each State who were covered by the Medicaid program, which ranged from 9.5 percent in Georgia to 16.9 percent in California. Thus, Georgia's Medicaid program covered a smaller percentage of children in the State during the study year, and among those children enrolled in Medicaid, a smaller percentage were high-cost.

Relative to the total population of children in each State, the number of high-cost Medicaid children in Michigan, California and Tennessee was remarkably similar, at about 50 per 100,000, while the number of high-cost children in Georgia, adjusted for State population, was less than half that of the other three States.

Table 4 shows that in three of the four States--Georgia, Michigan and Tennessee--over 70 percent of the study population incurred high Medicaid costs as a result of placement in long-term care or psychiatric institutions. In contrast, over 60 percent of high cost children and youth in California were not institutionalized in a long-term care facility at any time during the study year. As will be shown, noninstitutionalized children incurred high Medicaid costs largely due to the use of extensive inpatient hospital care.

TABLE 3. Selected Data on High-Cost Children				
Recipients	CA-1986	GA-1984	MI-1985	TN-1986
Number of High-Cost Children	6,409	781	2,196	988
High-Cost Children/Total Medicaid Recipients	0.22%	0.18%	0.25%	0.26%
High-Cost Children per 10,000 Children on Medicaid ¹	30	24	30	39
Percent of all children in State on Medicaid ¹	16.9%	9.5%	16.6%	11.7%
High-Cost Children on Medicaid per 100,000 Children in State ¹	50.4	23.2	48.5	45.4
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				
1. Only includes children under age 21.				

TABLE 4. High Cost Children on Medicaid in California, Georgia, Michigan and Tennessee by Institutional Status and Cost Category: 1984-1986				
	CA-1986	GA-1984	MI-1985	TN-1986
TOTAL RECIPIENTS	6,409	781	2,196	988
Institutionalized	2,454 (38.3%)	575 (73.6%)	1,552 (70.7%)	832 (84.2%)
Non-Institutionalized	3,955 (61.7%)	206 (26.4%)	644 (29.3%)	156 (15.8%)
COST: \$25K-\$50K	3,561 (55.6%)	732 (93.7%)	1,464 (66.7%)	877 (88.8%)
Institutionalized	989 (27.8%)	570 (77.9%)	918 (62.7%)	731 (83.4%)
Non-Institutionalized	2,572 (72.2%)	162 (22.1%)	546 (37.3%)	146 (16.6%)
COST: >\$50K	2,848 (44.4%)	49 (6.3%)	732 (33.3%)	111 (11.2%)
Institutionalized	1,465 (51.4%)	5 (10.2%)	634 (86.6%)	101 (91.0%)
Non-Institutionalized	1,383 (48.6%)	44 (89.8%)	98 (13.4%)	10 (9.0%)
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				

In Georgia and Tennessee, the vast majority of high cost children--about 90 percent--had total Medicaid claims of between \$25,000 to \$50,000 (Table 4). In Michigan, about one third of the study population incurred total Medicaid costs in excess of \$50,000, and in California, 44 percent of the study population had total Medicaid claims in excess of \$50,000. In fact, in California, there were 393 children and young adults with total Medicaid claims in excess of \$100,000 in 1986, compared to 58 in Michigan, five in Georgia, and only three in Tennessee.

5.2 High-Cost Children by Age, Sex and Institutional Status

In all four States, institutionalized high-cost children (those in long-term care facilities) who comprised 52 percent of the study population, tended to be teenagers and young adults, while noninstitutionalized high-cost children tended to be infants and very young children (Table 5). In Michigan and Tennessee, over 40 percent of noninstitutionalized high-cost children were under the age of one, suggesting that these children incurred high Medicaid costs as a result of complications of delivery and birth, such as low birth-weight. In contrast to Michigan and Tennessee, there were very few high-cost children under the age of one in Georgia. In California, although 44 percent of noninstitutionalized high-cost children were under the age of four, there was also a more even distribution of high-cost cases across age groups than in the other three States.

Between 60 and 64 percent of institutionalized children (primarily users of Intermediate Care Facilities for the Mentally Retarded and Inpatient Psychiatric Facilities) were males (Table 5). This is most likely related to two factors: (1) there is a higher incidence of mental retardation among males than females, and (2) male children with mental retardation or mental illness are more likely to be institutionalized than females. Noninstitutionalized recipients were also more likely to be male, but not to the same degree as institutionalized recipients.

TABLE 5. Distribution of High-Cost Children and Youth by Institutional Status, Age Group and Sex: Four States, 1984-1986				
Age Group	CA-1986	GA-1984	MI-1985	TN-1986
INSTITUTIONALIZED				
<1	0.4%	0.0%	0.1%	0.1%
1-3	3.4	0.3	1.0	0.5
4-10	8.9	5.0	8.9	9.9
11-18	29.1	33.4	44.3	50.7
19-21	21.6	23.1	16.0	15.0
22-25	36.7	38.1	29.8	23.8
Percent Male	60.4	63.1	62.2	64.1
Total N	2,454	575	1,552	832
NONINSTITUTIONALIZED				
<1	25.0%	4.4%	43.3%	42.3%
1-3	18.6	26.2	20.7	16.0
4-10	10.2	20.9	7.1	6.4
11-18	16.0	19.9	9.9	16.7
19-21	12.6	16.0	6.5	9.6
22-25	17.5	12.6	12.4	9.0
Percent Male	50.6	57.8	53.9	62.2
Total N	3,955	206	644	156
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				

5.3 High-Cost Children by Medicaid Enrollment Groups

A major research question addressed in the study was: through what Medicaid eligibility pathways do high-cost children gain access to Medicaid coverage? In this regard, there were major differences both across States and by institutional status (Table 6). Most high-cost children in institutions were recipients of SSI cash benefits. To be eligible for SSI benefits, these children had to meet both the income and disability criteria of the SSI program. To meet SSI's disability criteria, a child must have a disability which is both severely limiting and relatively permanent.⁶

In Michigan and Tennessee, almost a third of institutionalized children were not SSI cash recipients, but rather were eligible for Medicaid as medically needy "Other Children." "Other Children" are generally children who qualify for Medicaid under the "Ribicoff Children" option. It appears that when children living in two-parent households are institutionalized in Michigan and Tennessee, many qualify for Medicaid under the Ribicoff children eligibility category rather than under the SSI disabled child category. The advantage of the Ribicoff option to families seeking Medicaid coverage for their institutionalized child is that the child does not have to go through the SSI disability determination process before being eligible for Medicaid coverage. It is unclear why more institutionalized children in California did not qualify for Medicaid under this

⁶ Under contract to the Social Security Administration, State Disability Determination Services (DDS) conduct disability determinations of persons under age 65 who are applying for disability benefits under the Social Security Disability Insurance (SSDI) program or the Supplemental Security Income (SSI) program. Disabled persons seeking Medicaid coverage under "noncash" eligibility options must also be determined disabled by the same process, even though they do not qualify for SSI cash benefits.

eligibility category. One possible explanation is that more of institutionalized children in California were receiving SSI benefits prior to being institutionalized.

TABLE 6. Percent of High-Cost Recipients by Medicaid Enrollment Group and Cash Assistance Status: Four States, 1984-1986				
Enrollment Group	CA-1986	GA-1984	MI-1985	TN-1986
INSTITUTIONALIZED ONLY				
CN-Cash				
SSI	79.0%	82.8%	49.3%	52.4%
AFDC Child	1.1	0.0	6.1	3.6
AFDC Adult	0.2	0.0	1.5	0.0
Other ¹	0.8	0.0	0.0	0.0
Total Cash	81.1%	82.8%	56.9%	56.0%
CN-No Cash				
SSI	0.0	17.2	1.2	10.6
Other ²	0.0	0.0	0.0	0.4
Medically Needy				
SSI	12.0	--	9.1	0.0
AFDC Child	0.7	--	0.3	1.6
Other Child ³	4.1	--	32.3	31.0
Other ⁴	2.0	--	0.1	0.5
Total Non-Cash	18.8%	17.2%	43.0%	44.1%
NONINSTITUTIONALIZED ONLY				
CN-Cash				
SSI	20.3%	71.4%	15.2%	31.4%
AFDC Child	20.7	21.8	46.1	32.7
AFDC Adult	9.0	3.4	12.0	0.6
Other	8.3	1.0	0.0	0.0
Total Cash	58.3%	97.6%	73.3%	64.7%
CN-No Cash				
SSI	0.0	0.5	0.6	1.9
Other	1.2	2.0	0.8	4.5
Medically Needy				
SSI	6.1	--	3.1	1.9
AFDC Child	12.5	--	3.3	23.1
Other Child	16.1	--	17.2	3.8
Other	5.9	--	1.2	0.0
Total Non-Cash	41.8%	2.5%	26.2%	35.2%

TABLE 6 (continued)				
Enrollment Group	CA-1986	GA-1984	MI-1985	TN-1986
ALL HIGH-COST RECIPIENTS				
CN-Cash				
SSI	42.8	79.8	39.3	49.1
AFDC Child	13.2	5.8	17.9	8.2
AFDC Adult	5.6	0.9	4.6	0.1
Other	5.4	0.3	0.0	0.0
Total Cash	67.0%	86.8%	61.8%	57.4%
CN-No Cash				
SSI	0.0	12.8	1.0	9.2
Other	0.8	0.5	0.4	1.0
Medically Needy				
SSI	8.3	--	7.4	0.3
AFDC Child	8.0	--	1.1	5.0
Other Child	11.5	--	27.9	26.7
Other	4.4	--	0.4	0.4
Total Non-Cash	33.0%	13.3%	38.2%	42.6%
TOTAL N	6,409	781	2,196	988
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				
NOTE: CN = Categorically Needy. Georgia had no Medically Needy Program in effect in 1984.				
1. CN-Cash-Other = AFDC Child/Unemployed Parent, AFDC Child-Title IV-E foster care, and AFDC Adult/Unemployed Parent.				
2. CN-No Cash-Other = AFDC Child, AFDC Adult, Child Welfare Child and Other Child.				
3. Medically Needy-Other Child = Ribicoff Children and other Non-AFDC-related children in special groups.				
4. Medically Needy-Other = AFDC Adult and Child Welfare Child.				

Noninstitutionalized high-cost children and youth exhibited very different Medicaid enrollment patterns, except in Georgia. Since Georgia did not have a medically needy program in 1984, most noninstitutionalized high-cost children in Georgia, like institutionalized children, gained access to Medicaid coverage by virtue of being recipients of SSI cash benefits. In California, Michigan, and Tennessee, SSI cash recipients represented a much lower proportion of the noninstitutionalized population: 20 percent in California, 15 percent in Michigan, and 31 percent in Tennessee. Thus, the SSI program is an infrequently used eligibility pathway to Medicaid coverage for very young children with high medical costs. This was particularly true for severely disabled infants.

The importance of a medically needy program in providing health insurance coverage for families who do not qualify for cash assistance under AFDC or SSI is evident from Table 6. In Tennessee, 35 percent of all noninstitutionalized children qualified for Medicaid as medically needy, in Michigan 26 percent, and in California 42 percent. Among high-cost infants (under the age of one) these percentages were even higher--27 percent in Michigan, 44 percent in Tennessee, and 54 percent in California. These children became eligible for Medicaid as a direct result of incurring high expenses for their medical care that were not covered by other payment sources.

The lack of medically needy coverage in Georgia helps to explain why there were so few high-cost children under the age of one in that State. Single parent or two-parent families in Georgia who were not receiving AFDC benefits, but who lacked adequate health insurance, and who gave birth to a child requiring extensive medical care, had very limited access to Medicaid program coverage in 1984. In the other three States, such families could apply for medically needy coverage under a variety of program options, if their medical expenses exceeded their ability to pay for their child's care. How care for such severely disabled infants in Georgia was paid for, and how lack of Medicaid coverage may have affected the care they received, are issues that could not be addressed in the present study.

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TABLE 7. Distribution of Medically Needy Recipients by Average Monthly Spend-Down Amount			
Average Monthly Spend-Down Amount¹	CA-1986	MI-1985	TN-1986
INSTITUTIONALIZED-MEDICALLY NEEDY			
\$0	42.4%	64.8%	99.6%
< \$50	6.7	9.9	0.0
\$50-99	4.6	3.7	0.4
\$100-199	13.7	4.9	0.0
\$200-299	11.3	7.1	0.0
\$300+	21.3	9.6	0.0
	100.0%	100.0%	100.0%
Total N	460	648	275
NONINSTITUTIONALIZED-MEDICALLY NEEDY			
\$0	77.2%	93.1%	NA
< \$50	7.5	3.8	NA
\$50-99	3.4	1.3	NA
\$100-199	4.1	1.3	NA
\$200-299	2.1	0.6	NA
\$300+	5.7	0.0	NA
	100.0%	100.0%	NA
Total N	1,604	160	45
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.			
1. Sum of all monthly spend-down liabilities over the study year divided by number of months recipient was enrolled during the study year.			

5.4 Service Utilization Patterns

To be classified as an institutionalized recipient in this study, a child had to receive at least one day of care in either an inpatient psychiatric hospital, an Intermediate Care Facility for the Mentally Retarded (ICF-MR), an Intermediate Care Facility (ICF), or a Skilled Nursing Facility (SNF). As shown in Table 8, most

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institutionalized high-cost children were users of ICF-MR care, the majority of whom were adolescents and young adults.

A significant percentage of institutionalized high-cost children and youth, however, were users of inpatient psychiatric care. In Michigan and Tennessee, about 40 percent of the institutionalized population were patients in psychiatric hospitals, compared to eight percent in California. Georgia's Medicaid program did not cover inpatient psychiatric care as a benefit in 1984.

In California alone, a significant proportion of institutionalized high-cost children (38 percent) were users of Skilled Nursing Facility (SNF) care. This is due to the fact that, unlike the other States, California operates a State hospital system in which the majority of beds are certified as SNF beds. California uses these beds to serve Medicaid-eligible clients with a wide variety of conditions, including children with both severe mental and physical disabilities.

Table 9 presents data on utilization rates for acute inpatient hospital care and long-term care for the study population. High-cost children in California, both institutionalized and noninstitutionalized, used significantly more inpatient hospital care than children in the other three States. The average institutionalized recipient in California used over twice as many inpatient hospital days as institutionalized recipients in the other three States. The data also suggest considerable transition between general hospitals and psychiatric hospitals among the study population in California.

TABLE 8. Users of Institutional Services by Type of Service								
	CA-1986		GA-1984		MI-1985		TN-1986	
	N	%	N	%	N	%	N	%
Inpatient Psychiatric Hospital	205	8.4	0	0.0	647	41.7	328	39.4
ICF-MR	1,514	61.7	560	97.4	768	49.5	503	60.5
ICF	82	3.3	1	0.2	7	0.5	0	0.0
SNF	941	38.3	18	3.1	147	9.5	3	0.4
Total Institutionalized Recipients ¹	2,454		575		1,552		832	
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.								
1. The sum and percentage of institutionalized recipients by type of service exceeds total recipients and 100 percent due to some recipients using more than one type of service.								

Among noninstitutionalized children and youth, use of inpatient hospital care was the primary reason for incurring high Medicaid costs. Overall, about 99 percent of noninstitutionalized high-cost children had at least one hospital admission. Noninstitutionalized children and young adults averaged 62 days of inpatient hospital care in California during the study year, compared to 50 days of care in Michigan, 45 days in Georgia, and only 28 days in Tennessee. As previously discussed, the Tennessee Medicaid program limited coverage of inpatient hospital care to 14-20 days per year.⁹ Thus, the low number of Medicaid-paid inpatient days in Tennessee may reflect limits on coverage more than actual utilization patterns. Hospitals in Tennessee

⁹ The limitation on Medicaid-covered hospital days in Tennessee runs from July 1 to June 30 of the following year. Since our data covered a calendar year, it was possible for recipients to have more than 20 days of hospital coverage.

were simply not able to bill the State Medicaid program for hospital stays which exceeded Medicaid coverage limits.

Noninstitutionalized, high-cost children and youth in Georgia averaged significantly more acute inpatient hospital discharges than children in the other three States (see Table 9). This undoubtedly relates to the hospital-specific per-case reimbursement policy in effect in Georgia in 1984 previously described. Given this reimbursement policy, noninstitutionalized children in Georgia had a much higher probability of meeting our criteria as "high cost" if they had multiple hospital admissions.

Table 10 presents data on the use of physician and outpatient services for the study population. High-cost children in California had significantly more claims for physician care than children in the other three States. Claims for physician visits among noninstitutionalized recipients largely represent visits made during inpatient hospital stays; therefore, they closely match inpatient utilization rates, as presented in Table 9. Prescription drug use among institutionalized recipients was high in every State except Tennessee.

TABLE 9. Service Units Per User of Inpatient and Long-Term Care, Four States, 1984-1986				
Service Category	CA-1986	GA-1984	MI-1985	TN-1986
INSTITUTIONALIZED				
IP Hospital Days	36.9	17.0	14.6	13.8
IP Hospital Discharges	2.1	1.7	1.9	1.4
IP Psych Days	96.1	--	172.8	192.8
IP Psych Discharges	1.6	--	1.2	1.2
ICF/MR Days	307.6	357.2	342.6	352.2
ICF/Other Days	109.1	54.0	230.4	0.0
SNF Days	281.1	264.8	317.9	41.0
NONINSTITUTIONALIZED				
IP Hospital Days	62.0	45.2	49.8	27.6
IP Hospital Discharges	3.2	5.3	3.5	2.6
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				
NOTE: George did not cover inpatient psychiatric care in 1984.				

High-cost, noninstitutionalized children and youth in Michigan were intensive users of home health services. Almost 40 percent of the noninstitutionalized study population in Michigan were users of home health care, and home health recipients averaged 120 visits during the study year.¹⁰ This intensive use of home health services was not as evident among high-cost children in the other three States.

¹⁰ Home health visits in Michigan may not be similarly defined as home health visits in the older States. Specifically, Michigan home health regulations allow providers to bill "hours of care" as "visits" for certain intensive cases that require special care, and which must be approved on an individual basis.

TABLE 10. Service Units Per User: Physician Services and Outpatient Care, Four States, 1984-1986				
Service Category	CA-1986	GA-1984	MI-1985	TN-1986
INSTITUTIONALIZED				
Physician Visits	26.6	3.9	20.2	7.6
Other Practitioner Visits	3.3	1.0	1.1	1.0
OPD Visits	3.8	1.8	3.7	2.9
Free-standing Clinic Visits	3.5	3.0	2.3	22.0
Rural Health Clinic Visits	0.0	0.0	0.0	0.0
EPSDT Screening Visits	0.0	1.0	0.0	1.7
Dental Visits	1.4	1.3	1.6	1.8
Home Health Visits	7.6	3.0	26.3	30.0
Prescriptions	26.8	21.6	22.1	8.0
NONINSTITUTIONALIZED				
Physician Visits	67.1	41.4	51.9	26.1
Other Practitioner Visits	2.8	1.3	1.1	1.3
OPD Visits	5.6	7.7	8.5	5.5
Free-standing Clinic Visits	3.3	29.3	5.9	5.4
Rural Health Clinic Visits	0.0	1.5	0.0	0.0
EPSDT Screening Visits	0.0	1.0	0.0	2.3
Dental Visits	1.7	1.7	1.8	1.7
Home Health Visits	10.0	21.8	120.3	26.1
Prescriptions	13.3	19.3	16.0	16.6
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				

5.5 Medicaid Expenditures¹¹

Although high-cost children and youth accounted for less than one percent of the total Medicaid population in all four States, they accounted for a disproportionate share of total annual expenditures. Table 11 presents aggregate data on Medicaid expenditures for high-cost children in each State. California spent over \$330 million on high-cost children in its Medicaid program in 1986, almost 8 percent of its total Medicaid budget. High-cost children accounted for 7.1 percent (\$103 million) of total Medicaid costs in Michigan, 5.1 percent (\$37 million) in Tennessee, and 4.1 percent (\$31 million) in Georgia.

To adjust for State population, Table 11 also shows Medicaid expenditures for high-cost children per State resident. This statistic can be interpreted as a measure of the per capita tax burden of high-cost children on Medicaid. This statistic reflects previous patterns presented in the paper, with California and Michigan having the highest spending per capita, and Georgia and Tennessee the lowest. These differences are accentuated when only the State share of total Medicaid costs is taken into account, also shown in Table 11, since California and Michigan paid a higher percentage of total costs under Federal/State financing arrangements than either Georgia or Tennessee. On this measure, California spent more than three and half

¹¹ 1984 Medicaid expenditures in Georgia and 1985 expenditures in Michigan have been inflated by the medical care component of the Consumer Price Index to 1986 dollars in order to make expenditure data across the four States comparable.

times what Georgia spent per State resident on high cost children and youth under Medicaid.

TABLE 11. Medicaid Expenditures for High-Cost Children and Youth, Four States: 1984-1986 (in constant 1986 dollars)				
Expenditures (in \$000s)	CA-1986	GA-1984	MI-1985	TN-1986
Total Expenditures for High-Cost Children	\$333,761	\$31,165	\$103,481	\$37,210
Total Medicaid Expenditures	\$4,229,387	\$755,605	\$1,451,658	\$725,884
High-Cost Children as Percent of Total Expenditures	7.9%	4.1%	7.1%	5.1%
Total Expenditures per State Resident	\$12.36	\$5.33	\$11.39	\$7.75
State Share of Expenditures per State Resident	\$6.18	\$1.74	\$5.62	\$2.31
Average Cost per High-Cost Child	\$52,077	\$39,904	\$47,122	\$37,662
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				

The distribution of total Medicaid expenditures for high-cost children by major service category also varied significantly across the three States (Table 12). In California, inpatient hospital care accounted for almost 60 percent of total expenditures incurred by high-cost children and youth, compared to only about 20 percent of total payments in Georgia and Michigan, and 12 percent in Tennessee. Conversely, payments for institutional care accounted for the majority of expenditures in Georgia, Michigan and Tennessee, but for only one-third of expenditures in California.

TABLE 12. Distribution of Expenditures for High-Cost Recipients by Major Service Category, Four States, 1984-1986				
Major Service Category	CA-1986	GA-1984	MI-1985	TN-1986
Acute Inpatient Hospital	59.4%	21.5%	22.6%	11.8%
Institutional Care ¹	32.3	69.3	72.2	83.7
Other ²	8.4	9.2	5.1	4.6
	100.0%	100.0%	100.0%	100.0%
1. Institutional Care = Inpatient psychiatric care (except in Georgia) ICF/MR, Other ICF, and SNF. 2. Other = Physician services, other practitioner services, outpatient hospital department services, free-standing clinic care, prescription drugs, lab/x-ray services, and other. Excluded: rural health clinic visits, EPSDT visits, dental visits and home health visits.				

Table 13 and Table 14 present data on the average cost per user of institutional/hospital care and physician/outpatient care, respectively. Institutional and inpatient hospital costs per user are affected by both utilization levels (days per user) and Medicaid reimbursement rates (costs per day). For example, the average cost per day of ICF-MR care was approximately one-third higher in California and Michigan than in Georgia and Tennessee. Differences in Medicaid payment rates largely accounted for differences in ICF-MR costs per user.

TABLE 13. Users, Average Cost Per User, and Average Medicaid Payment Per Day of Care for Inpatient and Long Term Care Services (in constant 1986 dollars)												
	CA-1986			GA-1984			MI-1985			TN-1986		
	Users	Cost Per User	Cost Per Day	Users	Cost Per User	Cost Per Day	Users	Cost Per User	Cost Per Day	Users	Cost Per User	Cost Per Day
INSTITUTIONALIZED												
Total Recipients	2,454			575			1,552			832		
IP Hospital	575	\$21,173	\$574	76	\$7,182	\$422	170	\$7,267	\$498	112	\$6,728	\$487
IP Psych	205	\$30,597	\$318	0	--	--	647	\$49,149	\$284	328	\$39,094	\$203
ICF/MR	1,514	\$41,356	\$134	560	\$38,047	\$107	768	\$51,000	\$149	503	\$36,027	\$102
ICF	82	\$23,693	\$217	1	\$1,461	\$27	7	\$15,356	\$67	0	0	0
SNF	941	\$39,067	\$139	18	\$13,934	\$53	147	\$22,089	\$69	3	\$2,311	\$56
NONINSTITUTIONALIZED												
Total Recipients	3,955			206			644			156		
IP Hospital	3,936	\$47,164	\$761	195	\$41,471	\$696	619	\$35,553	\$714	155	\$23,345	\$846
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.												

Among noninstitutionalized children, differences in costs per recipient were primarily attributable to differences in utilization rates, not Medicaid payment rates. Average daily costs for hospital care were high in all four States, ranging from \$696 per day in Georgia to \$846 per day in Tennessee. These rates no doubt reflect extensive utilization of intensive care nurseries for premature infants, plus high use of ancillary services. Tennessee, which had the lowest utilization levels (see Table 9), had the highest costs per day of inpatient hospital care.

TABLE 14. Medicaid Expenditures Per User: Physician and Outpatient Care, Four States, 1984-1986				
Major Expenditure Category	CA-1986	GA-1984	MI-1985	TN-1986
INSTITUTIONALIZED				
Physician Visits	\$849	\$93	\$338	\$266
Physician Surgical Procedures	669	632	202	627
Physician Other	209	133	65	190
Other Practitioner	242	188	186	49
OPD	254	398	1,006	171
Free-Standing Clinic	224	214	55	1,015
Prescriptions	485	389	388	126
Lab/X-Ray	245	52	145	180
Other ¹	1,049	203	482	238
NONINSTITUTIONALIZED				
Physician Visits	\$3,018	\$832	\$920	\$1,050
Physician Surgical Procedures	1,033	1,433	992	1,804
Physician Other	648	1,890	186	1,065
Other Practitioner	189	90	268	75
OPD	512	8,464	2,580	1,638
Free-Standing Clinic	1,269	925	68	611
Prescriptions	549	737	572	549
Lab/X-Ray	516	140	404	1,744
Other ¹	1,799	1,479	1,959	2,681
SOURCE: Tape-to-Tape Early Returns Files, Health Care Financing Administration.				
1. Other = Durable medical equipment and supplies, ambulance services, other transportation, etc.				

Medicaid expenditures per user of physician and outpatient services are displayed in Table 14. As previously noted, many physician expenditures were incurred while the recipient was either institutionalized or hospitalized. These payments are for Medicaid claims billed separately from inpatient hospital care or institutional care, so they do not necessarily represent true "outpatient" expenditures. Overall, however, payments for physician and outpatient services represented a relatively low proportion of total recipient costs. Intensive use of institutional care and inpatient hospital care are the major factors contributing to high-cost cases.

6.0 DISCUSSION

The data presented in this exploratory study of high-cost children and youth on Medicaid highlight significant variations in the Medicaid "safety net" across States. The characteristics of State Medicaid programs in regard to eligibility, service coverage, and reimbursement policy have important effects on the ability of poor families with severely ill or disabled children to gain access to Medicaid coverage for their children's medical care.

The adoption of a Ribicoff program and a medically needy program had the largest effects on broadening the Medicaid safety net for children with severe medical conditions, particularly noninstitutionalized children with extended hospital stays. The medically needy option increased the number of noninstitutionalized high-cost children by 36 percent in Michigan, 55 percent in Tennessee, and 72 percent in California. The absence of a medically needy option in Georgia in 1984 severely limited access to Medicaid coverage for newborns and infants in families that were not eligible for AFDC or SSI cash benefits. The medically needy option has less of an impact on expanding coverage of institutionalized children and youth, since other eligibility provisions extend coverage to institutionalized children not receiving cash assistance.

SSI-related children (children with severe and long-term disabilities) comprised a lower percentage of high-cost children and youth than expected, except in Georgia. In Michigan and California, SSI-related children comprised about 50 percent of the study population, and in Tennessee, about 60 percent. Other eligibility options, particularly the Ribicoff Children option, are important pathways to Medicaid coverage for high-cost children. A major advantage of "non-SSI" eligibility pathways is that children do not have to go through the SSI disability determination process in order to gain access to Medicaid coverage.

One similarity observed across the four States was in the age distribution of the study population. High-cost children in all States tended to fall into two major groups: (1) infants and very young children (under age 4) with high Medicaid costs related to extended hospital stays, and (2) teenagers and young adults with mental disabilities requiring placement in institutional facilities. Eligibility pathways to Medicaid coverage also differed across these two groups. The SSI program was the primary eligibility pathway for older children and youth, particularly those requiring institutional placement, but was an infrequent pathway for infants and young children needing extensive hospital care. Optional Medicaid eligibility groups significantly expand access to Medicaid for high-cost infants and young children with high medical costs.

Reimbursement policy, particularly reimbursement policy for inpatient hospital care, also had a significant impact on the number of high-cost children and youth on Medicaid as defined in this study. The number of "high cost" children in Georgia was confounded by its hospital reimbursement system, which spread the costs of high cost cases across all Medicaid admissions. If hospitals had been reimbursed for costs

related to each admission, the number of high cost cases in Georgia would probably have been higher. However, we do not believe the number of high-cost cases would have increased significantly. Among the welfare population--children in families which received AFDC or SSI--the number of high cost cases in Georgia did not differ much from the other three States. Rather, it was Georgia's lack of Ribicoff coverage and medically needy coverage which were the major factors limiting access to the Medicaid program among children with high hospital costs.

Tennessee's limitations on Medicaid reimbursement to hospitals were the most restrictive, since they included limits on the absolute number of days of hospital care which individuals could receive. Thus, despite its broader eligibility provisions, Tennessee's hospital reimbursement policy severely restricted the number of noninstitutionalized high-cost children.

The major service coverage option which affected high-cost children and youth was coverage of inpatient psychiatric care. Adolescents and young adults receiving extended inpatient psychiatric care comprised about 30 percent of the total study population in Michigan and Tennessee, Georgia did not cover inpatient psychiatric care in 1984.

California provided the broadest access to Medicaid program coverage for children with severe medical conditions among the four States. It had the highest number of high-cost cases per capita and the highest average cost per high-cost child. Unlike the other three States, noninstitutionalized children in California comprised the majority (60%) of high-cost cases. These children averaged 62 days of Medicaid-covered hospital care during the study year. Of all children and youth in the study with Medicaid costs in excess of \$100,000 during the study year, 86 percent were in California.

Although high-cost children and youth in California comprised only about 0.2 percent of the entire Medicaid population in 1986, they accounted for almost 8 percent of total Medicaid expenditures. Thus, although California's Medicaid program clearly provided the broadest "safety net" for children with severe medical conditions, the high utilization levels observed among the study population in California also raise the issue of whether California could improve its management of high-cost cases. For example, noninstitutionalized high-cost children in Michigan exhibited higher utilization rates of home health care services, and lower utilization rates of inpatient hospital care, suggesting that high-cost cases in Michigan may be discharged home sooner. However, this study did not examine clinical outcomes and can make no observations about the appropriateness of care provided to the study population. This is an issue for further study.

The Medicaid programs of Tennessee and Georgia clearly provided a narrower safety net for poor children with severe medical conditions than Michigan and California. Given limitations on Medicaid coverage in these States, an obvious question is what happens to these children? For example, how did the lack of access to Medicaid

coverage affect uninsured newborns with severe medical conditions in Georgia? Other studies have found an association between lack of insurance and adverse clinical outcomes among newborns in general (Braveman et al, 1989). It is assumed that hospitals in Georgia accepted many of these cases as charity care, and attempted to recover their costs through other payment sources. Apparently, the rising burden of charity care was a significant factor in the eventual adoption of a medically needy program in Georgia in 1985. In Tennessee, another obvious question is what happens to severely disabled Medicaid children who exceed their limits on Medicaid-covered hospital days? In some cases, other funding sources (e.g. Title V funds) can be accessed, but in most cases, health insurance coverage ceases altogether. How does this termination of Medicaid coverage affect the clinical outcomes of these children?

In summary, it is clear that the decisions which States make with regard to Medicaid eligibility, service coverage, and reimbursement policy have important impacts on the access of poor children with severe medical conditions to Medicaid program coverage. The data presented in this study underscore the variation which exists across States in the breadth and strength of the Medicaid safety net for severely disabled children and youth with high health care costs. At the same time, it is clear that these State Medicaid policy decisions not only impact access to Medicaid coverage among severely disabled children and youth; they also have a major impact on Medicaid program costs. Medicaid policy decisions are always made in the context of the ability of States to finance their Medicaid programs, and also in the context of trade-offs between Medicaid sub-groups. For example, increased Medicaid coverage of severely disabled children may limit a State's ability to finance prenatal care for poor pregnant women, which in turn could potentially reduce the future incidence of newborns with medical complications requiring intensive interventions.

Subsequent to the time period analyzed in this study, the Federal government has imposed substantial mandates on States to broaden Medicaid coverage for poor infants and children without other forms of health insurance. In addition, Georgia adopted a medically needy program for pregnant women and children and extended coverage to all Ribicoff children under age 18, including the medically needy, in 1985. It would be interesting to re-examine high-cost children in these four States with more recent data to assess the degree to which these mandated and voluntary eligibility changes may have broadened access to Medicaid program coverage, and reduced variation across States. However, the data presented in this study suggest that other Medicaid program policies, including service coverage and reimbursement policies, also affect Medicaid program access for children with high medical needs.

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