Medicaid and Pregnant Women: Who is Being Enrolled and When

Marilyn Rymer Ellwood, M.S.W., and Genevieve Kenney, Ph.D.

Medicaid eligibility expansions and improved enrollment procedures for pregnant women during the late 1980s are examined in this article. Results show that the number of births financed by Medicaid has increased dramatically, and that women are enrolling earlier in the course of pregnancy. Nevertheless, problems continue to exist. If substantial numbers of women continue to enroll late in pregnancy, the expansions may not promote significantly earlier use of prenatal care.

INTRODUCTION

During the late 1980s, Congress focused heavily on expanding Medicaid eligibility at the State level for low-income pregnant women. By 1990, States were required to extend Medicare coverage to all pregnant women with family incomes below 133 percent of the Federal poverty level (FPL), with the option to cover up to 185 percent of FPL. States were also permitted to drop the assets test and expedite the eligibility process in other ways. Before these changes, Medicaid coverage for pregnant women had been closely linked to the Aid to Families with Dependent Children (AFDC) program, and State AFDC programs generally used income standards for eligibility that were considerably lower than the FPL. As a result, only 4 out of 10 women of reproductive age with family income below the FPL were covered by Medicaid in 1984 (Gold and Kenney, 1985). In expanding coverage, Congress intended to enroll more low-income pregnant women in Medicaid and to improve enrollment rates during the early stages of pregnancy. The idea was to improve access to adequate prenatal care, the assumption being that early continual prenatal care would have a positive effect on birth outcomes, including the reduction of infant mortality and morbidity rates for the low-income population.

This article focuses on the effect of the Medicaid expansions on pregnant women in four States—California, Georgia, Michigan, and Tennessee—from 1987 through 1991. It is primarily a descriptive analysis based on Medicaid enrollment and claims data from these States and case study data (Dubay et al., 1995). This analysis was intended to address two major questions (and several followup questions):

- What is the extent of expansion in Medicaid-covered deliveries by eligibility group?—What proportion of Medicaid-covered deliveries can be attributed to extending Medicaid to low-income women by measuring their family income against some percentage of the poverty level, as opposed to the traditional approach of providing Medicaid coverage through eligibility for AFDC cash assistance or State programs for the medically needy? What is the impact of other eligibility changes, including the extension of Medicaid coverage to undocumented aliens? Are there differences in age, race, and geographic residence by eligibility group?

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- Were States successful in enrolling pregnant women early in their pregnancies?—What is the impact of improvements made to the enrollment system, such as the outstationing of eligibility workers or the adoption of presumptive eligibility? What proportion of poverty-related pregnant women were enrolled in Medicaid during the first trimester of pregnancy? What was the success in early enrollment with other eligibility groups?

Our report begins with a review of the legislation defining Medicaid coverage of low-income pregnant women and the reported effects of expanded eligibility. The data and methods through which we identified Medicaid deliveries are discussed, as is the development of Medicaid eligibility requirements and eligibility determination procedures in the four States over the study period. The presentation of results includes data on the number of deliveries financed by Medicaid in 1987 and 1991 for the study States; an analysis of the somewhat surprising differences in growth rates among the States, which includes an assessment of growth disaggregated by eligibility group to isolate the effects of the expansion effort; and a description of changes in the demographic characteristics of women delivering under Medicaid. The article concludes with an analysis of the timing of Medicaid enrollment for pregnant women.

BACKGROUND

The financial standards for pregnant women were first changed through the Omnibus Budget Reconciliation Act (OBRA) of 1986, which gave States the option to cover all pregnant women with family income below the FPL. In 1987, States were given the option to extend coverage to pregnant women up to 185 percent of the FPL. Subsequent laws required all States to extend Medicaid coverage to all pregnant women with family income below 133 percent of the FPL by April 1990. As a result, the financial thresholds for eligibility for pregnant women in every State have vastly increased. Many States have also chosen to expedite the eligibility determination for pregnant women through other provisions such as presumptive eligibility, guaranteed continuity of eligibility, the elimination of the assets test, and the outstationing of eligibility workers (U.S. General Accounting Office, 1991, Dubay et al., 1995).

Preliminary reports indicate that, through expanded eligibility, more births have been covered by Medicaid. State-reported estimates of Medicaid-covered deliveries suggest that Medicaid funded about 32 percent of all deliveries in 1991, compared with only 15 percent in 1985 (Singh, Gold, and Frost, 1994). Some research on individual States has identified other impacts as well. Two studies of Tennessee's Medicaid program concluded that the expansions in eligibility had the greatest impact on the subgroup of teenage mothers, and that the use of presumptive eligibility increased the proportion of women who were likely to enroll in Medicaid during the first trimester (Piper, Mitchell, and Ray, 1994a, 1994b). A California study comparing access to prenatal care for various groups of pregnant women in 1990 did not focus on eligibility issues per se, but it showed that Medicaid women were the group most likely to initiate prenatal care after the first trimester, and that problems in the State's Medicaid enrollment system were contributing to the pattern of late initiation of care (Braveman et al., 1993).

The research in this article focuses on the extent to which increased coverage of deliveries can be directly attributed to the

expansions in eligibility in four States, and determines the extent to which these States have been successful in enrolling Medicaid women in the early stages of their pregnancies.

DATA AND METHODS

The data source for this analysis is the Tape-to-Tape data set, a multi-State Medicaid data base developed by the Office of Research and Demonstrations at HCFA. The Tape-to-Tape data set for the study period includes every Medicaid enrollee and every claim processed in the Medicaid Management Information Systems (MMISs) in California, Georgia, Michigan, and Tennessee. These data have been subject to extensive editing, code mapping, and reformatting to produce uniform, person-based Medicaid records suitable for research.

The four Tape-to-Tape States were chosen for this study because their Medicaid data are readily available. Although these States are not representative of all State Medicaid programs, they are among the largest, both in terms of total enrollment and total expenditures. Data taken from the Form HCFA-2082 show that together in fiscal year 1992, they accounted for 24 percent of Medicaid recipients nationwide and 17 percent of Medicaid expenditures. The Tape-to-Tape data used in this study cover 5 years from 1987 through 1991; 1991 was the most recent year for which Tape-to-Tape data were available. Most results reported in this article are presented only for 1987 and 1991.

Identifying Medicaid Deliveries: New Methodology

A frustrating aspect of Medicaid enrollment and claims data is that State MMISs typically do not include a specific variable that identifies pregnant women. Thus, States cannot report the number of pregnant women covered by Medicaid at a given time. It is also somewhat difficult to use claims data to count the number of deliveries financed by Medicaid because a single hospital-based delivery can be associated with multiple claims, and inpatient hospital claims associated with pregnancy and delivery can also include claims for miscarriages, stillbirths, and induced abortions. The number of Medicaid-covered births in a State is sometimes estimated by counting the number of children younger than 1 year of age who are enrolled in Medicaid. This approach is also flawed, since children can be enrolled at any point during their first year of life even if their births were not financed by Medicaid. In addition, in some States, there is a lag of several months after birth before newborns are enrolled in Medicaid. Even more problems emerge when the number of Medicaid children younger than 1 year of age is used to estimate the number of pregnant women because women can deliver more than one child during a year, and a single pregnancy can result in multiple births.

As a result of these problems, data sources may differ substantially in terms of the estimated number of pregnant women and/or deliveries covered by Medicaid for a given State and year. Unless the methodology has been specified, it is difficult to ascertain how reliable or comparable the estimates are.

To improve the estimates of Medicaid-covered births, researchers on the Tape-to-Tape project developed a methodology for identifying deliveries. It allows analysts to consistently count the number of deliveries in State Medicaid programs using Medicaid claims data.[1] The methodology relies primarily on diagnosis, procedure,

[1]The Tape-to-Tape approach to the identification of deliveries in Medicaid claims data is extensively documented in Herz and Dodds (1994).

Table 1

Monthly Income Thresholds by Medicaid Eligibility Group for Pregnant Women: 1987 and 1991

Year and State	AFDC Need Standard as Percent of FPL[1]	Medically Needy Level as Percent of FPL	Poverty-Related Expansion Threshold as Percent of FPL	Percent Change 1987-91[2]
1987				
California	84	109	—	—
Georgia	48	45	—	—
Michigan	72	71	—	—
Tennessee	47	28	100 (10/87)	
1991				
California	78	103	200	183
Georgia	47	41	133	277
Michigan	65	57	185	257
Tennessee	47	28	185 (7/91)	394

[1]In 1987, the FPL for a family of three was $755 a month compared with $905 for 1991.

[2]Percent change is calculated by dividing the poverty-related income standard in 1991 by the higher of the AFDC need standard or medically needy level in 1987.

NOTES: AFDC is Aid to Families with Dependent Children. FPL is Federal povery level.

SOURCES: Agency for Children and Families, Office of Family Assistance: *Characteristics of State Plans for AFDC.* Washington, DC. Department of Health and Human Services, 1987 and 1991; National Governor's Association: *Medicaid Eligibility: Selected Program Characteristics.* Washington, DC. 1987 and 1991.

and accommodation codes (and, in some instances, diagnosis-related groups) from inpatient hospital claims to identify deliveries financed by Medicaid. Data on sex, age, and dates of service are also used to consolidate, edit, and verify the data. This methodology was used for this study.

For each mother identified as having a delivery financed by Medicaid from 1987 through 1991, a data set was compiled indicating the mother's Medicaid eligibility experience for 18 months, including 12 months before the month of delivery and 5 months after delivery. Through this approach, we were able to study Medicaid enrollment patterns during the 9 months of pregnancy as well as 4 months before and 5 months after delivery. For mothers with more than one delivery during a year, we included only the first delivery. We also obtained information on the eligibility group under which the delivering mother qualified for each month of Medicaid enrollment.

Using this monthly information, we assigned each delivering mother to one of four eligibility groups:

- Receiving Cash Assistance—Mothers who received AFDC (or Supplemental Security Insurance) cash assistance benefits and Medicaid.
- Medically Needy—Mothers who qualified for Medicaid on the basis of medically needy eligibility criteria.
- Poverty-Related—Mothers who qualified for Medicaid on the basis of family income relative to some percentage of the FPL.
- Other—Mothers who qualified for Medicaid under other mandatory or optional criteria. This is a residual group, including women who would be eligible for Medicaid if the State Medicaid program were as generous as allowed under AFDC provisions, pregnant women with no other children who were not eligible for AFDC cash assistance benefits, women who were eligible for less than $10 in AFDC cash assistance benefits, women who were eligible for cash benefits but chose not to receive them, and women exiting AFDC cash assistance because of increases in earnings or child support payments.

Even though they did not receive cash assistance benefits, most mothers in this group qualified for Medicaid based on cash assistance eligibility criteria.

Although most pregnant women stayed in one group through their period of Medicaid enrollment, the eligibility status of some mothers changed. We assigned each delivering woman to the eligibility group in which she had the greatest number of months of Medicaid enrollment during the estimated period of pregnancy.

In identifying delivering women, we omitted individuals in two groups: (1) delivering women for whom there were no inpatient claims and (2) delivering women in fully capitated managed-care plans. The latter were excluded because complete claims data on their Medicaid utilization were not available. We were able to estimate the number of deliveries for women in each of these groups (as documented in the Technical Note at the end of this article). Herz and Dodds (1994) estimated that there were no inpatient hospital claims for 2 to 3 percent of Medicaid deliveries; we used the 2 percent estimate for all four States. We also knew the number of adult women on Medicaid enrolled in capitated programs each year, and assumed that they had the same delivery rate (by eligibility group) as women in the non-capitated program.

Eligibility Policies for Pregnant Women

The study States varied substantially in their financial thresholds for eligibility coverage of low-income pregnant women in 1987, the first year of the study. Table 1 presents selected information on each State Medicaid program's financial eligibility requirements in 1987 and 1991. Both the AFDC need standards and the medically needy levels are presented as a percentage of the FPL.[2] In 1987, California had the broadest coverage: the medically needy financial threshold for Medicaid eligibility in 1987 was $825 monthly for a family of three, 109 percent of the FPL. This was the highest level in the continental United States. In the other three States, the AFDC need standard was higher than the medically needy level. Michigan's AFDC need standard was about 72 percent of the FPL, compared with 48 percent for Georgia and 47 percent for Tennessee. Only in California then did any Medicaid income threshold exceed the FPL.

While the AFDC need standard and medically needy levels for each State remained the same through 1991 relative to each other, they declined relative to the FPL except in Tennessee. This happened because, unlike the FPL, State AFDC and medically needy levels are not automatically adjusted to account for inflation each year.

Table 1 also shows how the study States changed their financial standards for pregnant women using the expansion provisions (the fourth column). Tennessee was the first study State that decided to expand Medicaid coverage for pregnant women beyond the medically needy group. Beginning in October 1987, Tennessee used a threshold of 100 percent of the FPL for pregnant women. By the end of 1991, California covered all pregnant women to 200 percent of the FPL, while Michigan and Tennessee

[2]For the study States, initial eligibility for AFDC cash assistance is generally determined by subtracting an applicant's countable income from the State's need standard. However, in 1987 and 1991, the actual AFDC payment level in Georgia, Michigan, and Tennessee was lower than the need standard.
Persons whose countable income was higher than the AFDC need standard can qualify for Medicaid (but not cash assistance) by reducing their income to the medically needy income level. Under the medically needy spend-down provisions, applicants are allowed to subtract medical expenses from their countable income. Deductions for medical expenses are not allowed in determining eligibility for AFDC cash assistance. By Federal law, the medically needy income level by family size can be no greater than 133 percent of the highest amount paid for AFDC. As a result, the medically needy level in all the study States but California was actually lower than the AFDC need standard.

Table 2

State Actions to Expand Eligibility for Pregnant Women: 1987-91

State	Dropped Assets Test	Presumptive Eligibility	Expedited Eligibility	Outstationing of Eligibility Workers	Continuous Eligibility	Shortened Application Form
California	—	—	*1/89	*5/90	1/91	11/91
Georgia	1/89	—	7/89	1/89	1/89	1/89
Michigan	10/88	**	—	10/88	10/88	1/89
Tennessee	3/88	2/89	—	***7/87	7/87	—

*County option.

**In January of 1989, Michigan adopted a variant on presumptive eligibility whereby pregnant women meeting the income criteria for eligibility would receive an automatic guarantee that the State would pay for her prenatal care and delivery.

***In hospitals with a high volume of Medicaid patients.

SOURCE: (Dubay et al., 1995).

used the 185 percent threshold, and Georgia, 133 percent.[3]

The last column in Table 1 shows the poverty-related income standard for pregnant women in 1991 in each State relative to the higher of the AFDC need standard or the medically needy level (as a percentage of the FPL) in 1987. We see enormous change in the financial standards for pregnant women over the 5-year study period—most dramatically in Tennessee. In effect, the Medicaid income threshold for pregnant women in Tennessee increased almost fourfold from 1987 to 1991, compared with about a threefold increase for Georgia and Michigan. The least amount of change occurred in California, where the income threshold did not quite double.

All the States also responded to at least some of the other options included in OBRA 1986, as shown in Table 2. All except California moved to drop the assets test for pregnant women. Tennessee adopted presumptive eligibility (issuing temporary Medicaid cards to pregnant women who meet the income standards). California and Georgia adopted expedited eligibility (quicker processing of Medicaid applications for pregnant women). Although Michigan did not officially adopt either, it used a strategy that combines these options: if a pregnant woman meets the income guidelines, she is immediately guaranteed that the State will pay for her prenatal care and delivery. To some extent, all four States outstationed eligibility workers (placed eligibility workers outside of welfare offices) and adopted continuous eligibility (the assurance of ongoing Medicaid coverage during pregnancy). Only Tennessee did not shorten the application form for pregnant women.

Although the study States differ most with regard to Medicaid eligibility for pregnant women in terms of their financial requirements, some other differences with regard to other eligibility rules are noteworthy. Until the Family Support Act of 1988, States were not required to extend AFDC cash assistance eligibility to families with an unemployed parent. This provision affected the eligibility for AFDC cash assistance of pregnant women in two-parent families. Among the study States, neither Georgia nor Tennessee extended AFDC cash assistance eligibility to families with an unemployed parent until such coverage was mandated effective October 1990.

Finally, although all the study States had optional coverage for the medically needy groups, which extended to pregnant women during the study period, Georgia's program was only implemented late in 1985. Previous research has shown that it takes several years for medically needy coverage to become fully established (Fox, 1985). Enrollment data presented later in this article reflect the relative immaturity

[3]During this period, Federal matching dollars for Medicaid were only available to 185 percent of the FPL.

Table 3

Estimated Number of Births Financed by Medicaid and Rate of Growth: 1987 and 1991

State	Medicaid-Financed Births				Percent Growth
	1987		1991		
	Actual Inpatient Deliveries	Total Births With Adjustments[1]	Actual Inpatient Deliveries	Total Births With Adjustments[1]	
California	117,676	135,418	230,423	259,575	92
Georgia	21,670	22,436	46,720	48,419	116
Michigan	33,380	39,125	47,973	57,923	48
Tennessee	19,539	21,158	31,251	33,443	[2]58

[1]Estimated total includes additional two percent of deliveries in each State for women with outpatient deliveries, an adjustment for deliveries to women in capitated plans, and an adjustment for women with multiple births. The details of these adjustments are explained in the Technical Note at the end of the article.

[2]If the deliveries in the last quarter of 1987 which were attributable to Tennessee's early poverty-related expansion are excluded, Tennessee's growth rate from 1987 to 1991 would have been 77 percent.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

of Georgia's medically needy program with regard to pregnant women at the start of the study period.

RESULTS

Deliveries Financed by Medicaid

The number of deliveries financed by Medicaid rose dramatically in each State from 1987 to 1991, as shown in Table 3. This table includes the actual number of deliveries identified in the inpatient claims data plus an estimated total number of deliveries, which includes adjustments for the excluded groups: delivering women in capitated plans, delivering women for whom there were no inpatient claims, and women who delivered multiple children. The greatest increase occurred in Georgia, where the number of Medicaid deliveries increased by 116 percent over the 5-year period. California followed, with 92 percent growth; Tennessee was next, with 58 percent growth (or 77 percent if the early expansion-related deliveries in 1987 are excluded from the denominator); and Michigan was last, with 48 percent growth. We estimated the proportion of all births that were financed by Medicaid in 1987 and 1991 by dividing the number of Medicaid-financed births (from Table 3) by the total number of births in each State. For 1991, the proportion ranged from 39 percent in Michigan to almost 45 percent in Tennessee (see Table 4).[4] This was a substantial change from 1987, when the estimated proportion of Medicaid-financed births ranged from only 22 percent (Georgia) to 31 percent (Tennessee). Only 8 years earlier, in 1983, the proportion of Medicaid-financed births was estimated to be 16 percent in Georgia, 23 percent in California, and 24 percent in Michigan (Howell and Ellwood, 1991). Clearly, these States have substantially expanded their coverage of births to low-income women over a relatively short period of time.

Our analyses did not permit us to determine the extent to which State Medicaid programs are reaching all low-income pregnant women. However, Table 4 presents data relevant to the size of the potentially eligible population in each State. Data from the 1990 census show the proportion of women of child-bearing age (15 to 44 years of age) living below 185 percent of the FPL

[4]These study results differ somewhat from the results of the Alan Guttmacher Institute (AGI), which are based on a survey of State Medicaid directors (Singh, Gold, and Frost, 1994). For California and Michigan, our estimates of the number of Medicaid-financed births are about 6 percentage points higher than State estimates. For Georgia, our estimates are about 4 percentage points lower. However, a representative from Georgia's Medicaid program has acknowledged that their estimates to AGI were probably high (Skellie, 1994). Tennessee did not respond to the AGI survey.

Table 4

Percent of Total Births Financed by Medicaid: 1983, 1987, and 1991, and Proportion of Women of Child-Bearing Age Who Were Potentially Eligible: 1990

State	1983[1]	1987[2]	1991[2]	Percentage of Women Ages 15-44 With Income Under 185 Percent of FPL[3]
California	22.5	26.9	42.5	30.1
Georgia	15.8	21.9	43.9	33.3
Michigan	24.0	27.8	38.6	29.0
Tennessee	—	31.1	44.9	37.0

[1]SOURCE: (Howell and Ellwood, 1991).

[2]SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicade Tape-to-Tape Project, 1983, 1987, and 1991.

[3]Data taken from the U.S. Bureau of the Census, 1990 Census.

NOTES: FPL is federal povery level.

in each State in 1990. Study data suggest that the proportion of Medicaid-financed births in 1991 (column 3) was greater than the estimated proportion of potentially eligible women in each State (column 4), probably because lower-income women have higher fertility rates than higher income women (Newacheck, 1988).

By far the greatest increase in Medicaid coverage of pregnant women occurred in Georgia. We did not expect to see this pattern because of the rate of increase in the income standards by State. A priori, we expected the greatest change to occur in Tennessee because its income threshold for pregnant women increased almost 400 percent during the study period. Furthermore, Tennessee both began its expansions early in the study period (Table 1) and had the greatest proportion of women potentially eligible under the expansion provisions (since it went to the full 185 percent of the FPL). Also relevant, Tennessee was earlier to implement other improvements in its enrollment system, such as worker outstationing and continuous eligibility (Table 2).

On the other hand, the total population in Georgia is about one-third greater than that in Tennessee, and the proportion of women potentially eligible in both States is not that different. It seems likely that Georgia was catching up over the study period in terms of its Medicaid enrollment of low-income pregnant women. In 1987, enrollment appears lower than expected relative to Tennessee, perhaps in part because Georgia's program for women in the medically needy group was relatively new in 1987. It is also possible that Georgia was covering more Medicaid deliveries than are reflected in the MMIS data during the early study period. During this time, hospitals in Georgia had no particular incentive to code deliveries in their Medicaid claims submissions because reimbursement was independent of the diagnosis. In any event, by 1991, the relative numbers of pregnant women on Medicaid in these two States were more congruent with expectations.

Like Georgia, Michigan's income threshold almost tripled over the 5-year study period, but the number of Medicaid-covered deliveries in Michigan increased by only 48 percent. The rate of growth in Medicaid-financed deliveries in California was also disproportionate to the change in its income threshold. The rate of growth in the number of Medicaid-financed deliveries in California was the same as in Georgia. Yet, the relative change in California's income threshold for Medicaid was considerably less.

Table 5
Delivering Women on Medicaid, by Eligibility Group: 1987 and 1991

Year and State	Total	Eligibility Group				
		Receiving Cash Assistance	Not Receiving Cash Assistance			
			Medically Needy	Poverty-Related	Other	Subtotal
1987						
California	116,417	57,604	56,718	—	2,095	58,813
Georgia	21,412	11,397	3,269	—	6,746	10,015
Michigan	32,746	25,379	5,829	—	1,538	7,367
Tennessee	19,300	10,701	5,616	2,172	811	8,599
1991						
California						
With IRCA/OBRA Aliens	227,987	68,904	53,855	23,693	81,534	159,082
Without IRCA/OBRA Aliens	124,566	68,882	40,485	11,510	3,688	55,683
Georgia	46,254	15,935	585	28,712	1,022	30,319
Michigan	47,816	29,304	2,883	14,466	1,163	18,512
Tennessee	30,919	11,454	1,120	17,824	521	19,465

NOTE: Data are for non-capitated women with hospital-based deliveries. IRCA/OBRA is Immigration Reform and Control Act/Omnibus Budget Reconciliation Act.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

Differences in Growth Rates

An analysis of the growth in Medicaid-financed deliveries by eligibility group partly explains the differences in State patterns, particularly for Michigan and California. Table 5 shows the number of delivering women by eligibility subgroup in 1987 and in 1991.[5] Table 6 presents growth rates for the number of delivering women on Medicaid receiving cash assistance compared with those not receiving cash assistance. Rates for each eligibility subgroup are not presented. We decided that this would not be meaningful because many States appear to have stopped using the medically needy and "other" groups to qualify pregnant women for coverage once the expansion groups were implemented. By 1991, most States were enrolling women in the poverty-related expansion group who would have previously qualified under the medically needy or "other" groups. It is likely that State eligibility workers found it more efficient to enroll pregnant women not eligible for cash assistance on the basis of the poverty-related provisions, since the income thresholds for these groups were higher than those for the medically needy group. In addition, in all the study States but California, there were no asset requirements. To control for the effects of switching the basis on which women were enrolled, we focused on the overall growth rate in the coverage of delivering women not receiving cash assistance.

From 1987 to 1991, the number of delivering women who received AFDC cash assistance increased in all the study States. The growth rate ranged from 7 percent in Tennessee to 40 percent in Georgia. Thus, part of the growth in Medicaid-financed deliveries was a result of an increase in the number of pregnant women covered under AFDC cash assistance provisions. This growth occurred even though there was little or no change in AFDC need standards relative to the FPL in Georgia and Tennessee, and even though there was an actual decline in the AFDC need standards in California and Michigan over this period.

[5]This analysis by eligibility group excludes a few deliveries in each State, including those for which we did not have complete eligibility information and women with multiple deliveries in a year. Also, these data do not include women in capitated plans and women whose deliveries did not result in inpatient hospital claims. As a result, the growth rates in Medicaid coverage of delivering women from 1987 to 1991 presented in Table 6 are slightly different from those shown in Table 3.

Table 6

Percent Change in Number of Delivering Women on Medicaid, by Cash Assistance Status: 1987-91

State	Total	Receiving Cash Assistance	Not Receiving Cash Assistance
California			
With IRCA/OBRA Aliens	96	20	270
Without IRCA/OBRA Aliens	7	20	-5
Georgia	116	40	303
Michigan	46	15	251
Tennessee	60	7	226

NOTE: IRCA/OBRA is Immigration Reform and Control Act/Omnibus Budget Reconcilation Act.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

The growth in AFDC cash assistance can be explained by: continuing changes in the family structure of the low-income population, including more out-of-wedlock births; Federally mandated expansions in AFDC cash assistance in 1990, which included families with unemployed or underemployed parents (this coverage was previously available in California and Michigan, but not in Georgia or Tennessee); and a poor economy and high rates of unemployment in many States. It is also possible that overall outreach efforts by States to pregnant women contributed to some growth in AFDC cash assistance enrollment.

Nevertheless, women not receiving cash assistance accounted for most of the growth in Medicaid coverage of delivering women in the study States. Table 6 shows that, from 1987 to 1991, the number of delivering women not receiving cash assistance grew substantially in every study State. The growth rate for this group ranged from 226 percent in Tennessee to 303 percent in Georgia. Michigan's growth rate for non-cash assistance pregnant woman was 251 percent, making it roughly comparable to the two Southern States. No doubt some growth would have occurred among the population not receiving cash assistance in these States, even without the expansion coverage. However, it seems unlikely that it would have been of this magnitude. Therefore, we can interpret the change in coverage as an indication that the poverty-related expansions had a significant impact on the rate of enrollment growth for low-income pregnant women in Georgia, Michigan, and Tennessee.

The explanation for the growth rate among pregnant women not receiving cash assistance in California is different. Here, the number of delivering women in the poverty-related group was only 23,693 by 1991 (Table 5). However, the size of the medically needy group remained fairly stable at just over 50,000 from 1987 to 1991, and the number of delivering women in the "other" eligibility group grew from 2,095 to 81,534 over the 5-year period. There are two reasons for this pattern. First, compared with the other three States, California more strictly interpreted the legislation regarding what Medicaid services were covered for poverty-related pregnant women. Federal law specifies that the various expansion groups of pregnant women are eligible only for pregnancy-related services, and California interpreted pregnancy-related services as excluding treatment for health care unrelated to pregnancy. For example, services for a broken leg might not be covered for pregnant women in the poverty-related group. This type of interpretation created an incentive to qualify pregnant women under the medically needy group or "other" group, if possible, so that they would receive the full range of Medicaid services, not just "pregnancy-related" coverage. Since the other three

study States interpreted the legislation to mean that pregnant women in the poverty-related group would be eligible for full coverage under Medicaid, they had no incentive to continue qualifying women under the medically needy or "other" groups.

The second reason for different trends in California is that there was considerable change during the study period in the Medicaid coverage of so-called "illegal" aliens. This change had a major impact in California, but not in the other States. The Immigration Reform and Control Act of 1986 (IRCA) created a legalization and amnesty program under which the status of certain aliens unlawfully residing in the United States could be adjusted over time to permanent resident status. Under IRCA, pregnant alien women in the amnesty program were eligible for Medicaid emergency and pregnancy-related services with Federal financial participation. OBRA 1986 addressed the needs of other undocumented and nonimmigrant aliens who are not considered to be permanent residents under the color of the law. Pregnant women to whom OBRA applies are eligible for Federal matching funds for emergency services under Medicaid, including labor, delivery, and emergency prenatal benefits. However, Federal monies are not available for their expenses for routine prenatal care services. California opted to pay for these entirely with State funds. Thus, both alien groups (hereafter referred to as IRCA/OBRA aliens) in California had access to full prenatal care and delivery benefits.

IRCA/OBRA aliens are not eligible for AFDC cash assistance under Federal law. However, they can qualify for Medicaid under any of the other eligibility groups depending on family income. It is interesting that most of the delivering women who were IRCA/OBRA aliens in California did not qualify for Medicaid under the poverty-related expansion provisions. Apparently, their family income was sufficiently low that they qualified under the provisions in the "other" eligibility group, which generally covers women whose families are poor enough to be eligible for AFDC financial assistance, although they could not receive such assistance.

California implemented the IRCA and OBRA changes as part of its Medicaid program in late 1988. By 1991, the number of delivering women covered under the IRCA/OBRA alien groups totaled 103,421.[6] They accounted for 45 percent of the Medicaid deliveries that year. Thus, expanding coverage to IRCA/OBRA aliens in California accounts for almost all of the growth in Medicaid-covered deliveries in that State since 1987.[7] Table 6 shows that without this coverage (the second row of California data), the overall number of Medicaid-financed deliveries in California would have increased not by 96 percent, but only by 7 percent from 1987 to 1991. Excluding the IRCA/OBRA-mandated coverage, only the AFDC cash assistance program in California showed growth in the number of delivering women from 1987 to 1991. Without coverage for the IRCA/OBRA aliens, the number of delivering women covered under Medicaid outside the cash assistance programs would have increased only slightly at best. This would have happened despite the increase in the FPL threshold for pregnant women from 109 percent in 1987 (for the medically needy program) to 200 percent in 1991.

[6]There is a possibility that some legal immigrants are included in study counts of pregnant women in the IRCA/OBRA alien group (Clark et al., 1994). At the time of the study, persons applying for only limited scope Medicaid benefits (i.e. pregnancy-related and emergency services) were not required to present documents regarding their citizenship or immigrant status. Thus, some legal immigrants may have been incorrectly enrolled in the IRCA/OBRA group.

[7]Some pregnant undocumented alien women may have been receiving Medicaid coverage prior to the point in 1988 when the State classified them into a separate eligibility group. However, even taking this into account, Norton, Kenney, and Ellwood (in press) estimated that over three-quarters of the increase in California's enrollment of pregnant women in Medicaid from 1987 to 1991 is attributable to the expanded coverage of IRCA/OBRA aliens.

Table 7

Selected Demographic Information on Delivering Women, by Eligibility Group: 1987 and 1991

Eligibility Group and State	1987[1] Total	1987[1] Cash	1987[1] Non-Cash	1991 Total	1991 Cash	1991 Poverty-Related	Percent Change 1987-91
California							
Average Age (Years)	24.7	24.6	24.8	25.2	25.2	25.8	0.5
Race/Ethnicity[1]				Percent			
White	25	36	18	21	36	24	-4
Black	11	24	4	9	22	2	-2
Other	57	38	68	67	41	72	10
NA	7	2	9	2	<1	1	-5
Geographic Location							
Core Urban	68	67	69	67	63	54	-1
Suburban	11	8	14	11	8	18	—
Medium Urban	11	14	9	13	16	17	2
Lesser Urban	4	4	3	4	6	5	—
Rural	6	7	6	5	7	8	-1
Georgia							
Average Age (Years)	22.7	23.3	22.1	23.1	23.4	22.9	0.4
Race/Ethnicity				Percent			
White	32	18	47	42	20	55	10
Black	67	81	52	55	78	42	-12
Other	1	<1	<1	3	1	3	2
NA	<1	<1	1	<1	1	<1	—
Geographic Location							
Core Urban	21	24	18	21	25	19	—
Suburban	12	8	15	15	10	17	3
Medium Urban	11	13	10	11	13	10	—
Lesser Urban	13	15	11	12	15	11	-1
Rural	43	41	45	41	38	43	-2
Michigan							
Average Age (Years)	23.6	23.7	23.2	23.9	23.8	24.3	0.3
Race/Ethnicity				Percent			
White	57	55	64	59	52	77	2
Black	38	41	29	34	43	14	-4
Other	4	4	6	5	4	7	1
NA	1	1	1	1	1	2	—
Geographic Location							
Core Urban	35	35	34	31	34	21	-4
Suburban	13	13	15	15	13	20	2
Medium Urban	21	22	19	23	24	21	2
Lesser Urban	11	11	9	11	12	10	—
Rural	20	19	23	20	17	28	—

See footnote at end of table.

To summarize, the results of this portion of the analysis show that Federal expansions in coverage for pregnant women in the poverty-related group had a major impact on the number of deliveries financed by Medicaid in Georgia, Michigan, and Tennessee. In these States, the number of delivering women covered by Medicaid who were not receiving cash assistance increased by two to three times over the 5-year study period. However, poverty-related expansions for this group did not seem to affect the growth in the number of pregnant women whose deliveries were financed by Medicaid in California. Instead, growth in this area is

Table 7—Continued

Selected Demographic Information on Delivering Women, by Eligibility Group: 1987 and 1991

Eligibility Group and State	1987[1] Total	1987[1] Cash	1987[1] Non-Cash	1991 Total	1991 Cash	1991 Poverty-Related	Percent Change 1987-91
Tennessee							
Average Age (Years)	22.7	23	22.4	22.9	23.2	22.9	0.2
Race/Ethnicity				Percent			
White	55	37	78	63	39	79	8
Black	44	62	21	35	60	20	-9
Other	<1	<1	<1	1	1	1	-1
NA	<1	<1	<1	<1	1	<1	—
Geographic Location							
Core Urban	—	—	—	—	—	—	—
Suburban	—	—	—	—	—	—	—
Medium Urban	65	65	74	64	74	57	-1
Lesser Urban	1	1	1	1	1	2	—
Rural	34	34	25	35	25	41	1

[1]California race/ethnicity data are for 1989 instead of 1987, since data were first available in this year.

NOTE: NA is not available.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

almost entirely attributable to expanded Medicaid coverage for aliens who were applying for permanent resident status under the amnesty provisions of IRCA and those who were not considered to be permanent residents.

Demographic Characteristics of Pregnant Women

This section examines how the shifts in enrollment across eligibility groups affect the demographic composition of delivering women under Medicaid. State Medicaid administrative files provide only limited enrollment and demographic information on enrollees. However, the data in Table 7 reveal interesting information about the changing characteristics of pregnant women covered by Medicaid:

- Age—The average age of delivering women increased slightly in all four study States from 1987 to 1991. There were not consistent differences across the States in the age distribution of women by eligibility group. In both years, delivering women in California were older on average by at least 1 year.
- Race/Ethnicity—In Georgia, Michigan, and Tennessee, there was an increase in the proportion of white women whose deliveries were financed by Medicaid from 1987 to 1991. This increase is attributable to pregnant women in the poverty-related expansion group. This result is consistent with an earlier study by the U.S. General Accounting Office (1991), which reported that because of their higher income, the women covered were more likely than the traditional female Medicaid population to come from nonminority backgrounds.

This change was most dramatic in Georgia and Tennessee, where the proportion of white delivering women increased from 32 percent to 42 percent, and from 55 percent to 63 percent, respectively. In these two States, women covered under the expansions were twice as likely to be of the white race as women receiving cash assis-

Table 8

Date of First Medicaid Enrollment for Delivering Women, by Eligibility Group: 1991

Eligibility Group and State	Total[1]	Date of First Medicaid Enrollment			
		1980 or Earlier[2]	1981-85	1986-89	1990-91
			Percent		
California[3]	100	33	20	17	30
Receiving Cash	101	42	24	19	16
Poverty-Related	100	17	15	16	52
Georgia	100	10	11	21	58
Receiving Cash	100	23	20	35	22
Poverty-Related	100	4	4	14	78
Michigan	100	37	15	18	30
Receiving Cash	100	46	18	19	17
Poverty-Related	101	19	11	16	55
Tennessee	100	10	7	22	61
Receiving Cash	100	21	14	32	33
Poverty-Related	100	3	2	14	81

[1]Totals may exceed 100 percent due to rounding.

[2]Since the Tape-to-Tape files were established in 1980, data are truncated for this year.

[3]IRCA/OBRA aliens are not included in the California data.

NOTE: IRCA/OBRA is Immigration Reform and Control Act/Omnibus Budget Reconciliation Act.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

tance. The proportion of white delivering women in Michigan increased from 57 percent to 59 percent.

California differs substantially from the other study States with regard to the distribution of pregnant women by race/ethnicity.[8] The majority of delivering women in 1989 and 1991 in California were reported to be in the "other" race/ethnicity group, which includes Hispanic, Asian and Pacific Islander, Native American, Filipino, Chinese, Cambodian, Japanese, Korean, Samoan, Asian Indian, Hawaiian, Guamanian, Laotian, and Vietnamese enrollees. The proportion of delivering women in this group increased from 57 percent in 1989 to 67 percent in 1991. Since the vast majority of IRCA/OBRA aliens were reported in this race/ethnicity category, this trend is not surprising.

- Geographic Location—In California, Georgia, and Michigan, there was a slight increase (2 to 4 percentage points) from 1987 to 1991 in the proportion of delivering women residing in suburban and/or medium-urban counties. In 1991, pregnant women receiving cash assistance in these States were more likely than pregnant women in the poverty-related group to reside in core urban areas. In Tennessee, where no counties are classified as core urban or suburban, there was a 1-percentage-point increase between 1987 and 1991 in the proportion of pregnant women on Medicaid classified as residing in rural counties. In all four States, women receiving cash assistance were less likely than women in the poverty-related group to live in rural counties.

In addition to these three characteristics, the date of first Medicaid enrollment is another element in the Tape-to-Tape data set for all the individuals. Since the data set was established in 1980, first enrollment dates are truncated in that year. Nevertheless, as shown in Table 8, the enrollment information gives us some

[8]Race/ethnicity data were not available in California's MMIS until 1989.

sense of the extent to which the population of delivering women in a given year were new participants in the Medicaid program. In California and Michigan, only 30 percent of delivering mothers in 1991 first enrolled in Medicaid in 1990 or 1991. These data exclude the IRCA/OBRA alien population for California.[9] In contrast, 58 to 61 percent of pregnant women in Georgia and Tennessee were first enrolled in the Medicaid program in 1990 or 1991. Clearly, the programs in Georgia and Tennessee were reaching a considerably larger group of new candidates for Medicaid.

It is also noteworthy that approximately one-third of delivering women in California (excluding the IRCA/OBRA alien population) and Michigan in 1991 were enrolled in the Medicaid program as early as 1980. For Georgia and Tennessee, only 10 percent of delivering mothers in 1991 were enrolled in Medicaid in 1980. This does not necessarily mean that the mothers in all four States were continuously enrolled in the program over the intervening 11 years; however, it does suggest that a large proportion of delivering women in California and Michigan in 1991 had long-term ties to the Medicaid program. Due to the higher income thresholds for Medicaid eligibility in California and Michigan prior to the expansions (and in 1980 as well), one would expect these States to have women with more attachment to the Medicaid program over time. No doubt some proportion were previously enrolled as children.

For California (excluding IRCA/OBRA aliens) and Michigan, just over one-half of the delivering women in the poverty-related group in 1991 were new to the Medicaid program. The proportion was even higher for Georgia and Tennessee—78 percent of women in this group in Georgia and 81 percent in Tennessee first enrolled in the Medicaid program in 1990 or 1991. These data indicate that the expansions in Medicaid eligibility in these States were highly effective in reaching women who had never before participated in the program.

Enrollment Timing During Pregnancy

Even with the large caseload increases documented here, all four States enrolled women in the Medicaid program earlier in pregnancy in 1991 than in 1987. As shown in Table 9, only about one-half of delivering women in 1987 were enrolled in Medicaid during the first trimester in California, Georgia, and Tennessee.[10] Michigan was much more successful: 69 percent of women enrolled during the first 3 months of pregnancy in 1987. Tennessee showed the greatest improvement between 1987 and 1991, going from 49 percent enrollment during the first trimester to 67 percent. Medicaid enrollment in Georgia during the first trimester moved from 52 percent in 1987 to 63 percent in 1991, and enrollment in Michigan increased from 69 percent to 78 percent. California showed the least improvement. Its early enrollment rate grew from 50 percent in 1987 to 56 percent in 1991.

Of the four study States, Michigan was the most successful in enrolling women early in pregnancy in 1991, while California was the least successful. Michigan's success could be attributed to the combination of outreach efforts and other improvements in enrollment procedures as well as to the fact that more pregnant women were enrolled in their first trimester in 1987 relative to the other study States.

Table 9 also shows that the eligibility determination process was working much better for pregnant women in the cash assistance group than for those qualifying under the poverty-related provisions. In all

[9]In California, the rate of new participants would have been 55 percent if the IRCA/OBRA alien population were included (data not shown).

four study States, 81 percent or more of women receiving cash assistance were enrolled in Medicaid during the first trimester in 1991. In comparison, only 51 to 61 percent of the pregnant women in the poverty-related group were enrolled in Medicaid during the first trimester. To determine whether earlier enrollment was a result of improvements in the four Medicaid enrollment systems, we tracked the timing of enrollment and the implementation of improved procedures between 1987 and 1991 for women who were not already on Medicaid at the time of conception. Table 10 shows the proportion of women not previously enrolled in Medicaid who enrolled during their first trimester between 1987 and 1991. Positive changes in the timing of enrollment in Georgia, Michigan, and Tennessee in 1991 relative to 1987 seem to track fairly closely with improvements in the enrollment systems. In all three cases, the effects of the improvements unfolded over several years.

In Georgia, the timing of enrollment improved significantly in and after 1989, after the State had outstationed eligibility workers, shorted the application form, and dropped the assets test. The proportion of women who enrolled early did not change between 1987 and 1988, but it increased by 27 percentage points between 1988 and 1991, beginning with a 7 percentage point increase in 1989.

Earlier enrollment also seemed to follow improvements in the enrollment system in Michigan. Overall, the proportion of newly enrolling women in the first trimester increased by 23 percentage points from 1987 to 1991. In late 1988 and early 1989, the State introduced a shortened application form, outstationed eligibility workers, and implemented a program that guaranteed State payment for prenatal care and delivery for pregnant women who had completed a Medicaid eligibility application form, had a Social Security card, and met the eligibility standard. While the timing of enrollment was fairly stable from 1987 to 1988, the proportion of women enrolling in their first trimester increased substantially in each subsequent year. A multimedia campaign launched in May 1990 emphasized the importance of timely prenatal care and publicized Medicaid's more liberal eligibility policy. This also may have contributed to the gains observed in 1990 and 1991 (Kenney and Norton, 1993).

In Tennessee, 51 percent of the newly eligible pregnant women enrolled in their first trimester in 1991, compared with 24 percent in 1987. More than one-half of the total increase occurred between 1987 and 1988, before presumptive eligibility was adopted and the assets test was dropped. Therefore, the outstationing of Medicaid eligibility workers at high-volume Medicaid hospitals midway through 1987 appears to have significantly facilitated earlier enrollment during pregnancy. Adopting presumptive eligibility in February 1989 and dropping the assets test in 1988 also may have contributed to progress over the period; the proportion of pregnant women enrolling in their first trimester increased another 12 percentage points between 1988 and 1991.

In California, the proportion of newly enrolled pregnant women who enrolled during their first trimester increased from 23 percent to 39 percent, the smallest increase among the four study States. The timing of enrollment during pregnancy did not improve in California until 1990, per-

[10]The first trimester was defined as including the period 6-9 months prior to delivery. Therefore, some women who deliver pre-term may have been classified as not enrolling in the first trimester when, in fact, they had. Our estimates of timely enrollment will understate the extent to which women enrolled in their first trimester. In addition, some women may have had changes in their economic or household situation during the course of their pregnancies, which made them eligible for Medicaid after the first trimester. Therefore, it is impossible for States to have achieved 100 percent enrollment in the first trimester.

Table 9

First Trimester Enrollment Rates for Women Enrolling in Medicaid, by Eligibility Group, 1987-91

Year	California			Georgia			Michigan			Tennesse		
	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related
1987	50	76	—	52	78	—	69	76	—	49	66	6
1988	47	77	—	51	76	—	69	77	26	58	74	44
1989	43	79	9	50	79	27	70	80	44	64	78	50
1990	48	79	39	55	83	42	74	83	55	66	81	55
1991	56	81	51	63	86	53	78	86	61	67	82	56

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

Table 10

First Trimester Enrollment Rates for Newly Enrolled Pregnant Women, by Eligibility Group: 1987-91

Year	California			Georgia			Michigan			Tennesse		
	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related	All Groups	Cash Assistance	Poverty-Related
1987	23	39	—	21	29	—	31	36	—	24	30	—
1988	21	39	—	21	28	—	32	39	18	39	38	41
1989	20	36	8	28	35	25	40	43	39	47	43	46
1990	29	37	36	37	40	39	49	50	50	50	46	52
1991	39	39	48	48	45	50	54	53	56	51	45	53

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape Project, 1987 and 1991.

haps because, compared with the other study States, California made fewer and later changes in the enrollment system. The effects of these changes may have just begun to be felt at that point because most of them were introduced at the end of the period of analysis. Moreover, the State may not have devoted adequate resources to outstationing eligibility workers and expedited eligibility (Dubay et al., 1995). Also, as cited earlier, other researchers have noted bureaucratic problems in California related to the Medicaid enrollment process (Braveman et al., 1993).

Rates of first trimester enrollment for IRCA/OBRA aliens were analyzed separately (data not shown) because this group makes up such a large share of the caseload in California. IRCA/OBRA aliens were first eligible in October 1989. In 1991, IRCA/OBRA aliens were only about one-half as likely (56 percent) as other groups to be enrolled during the first trimester of pregnancy.[11] This low rate of early enrollment may indicate that women enrolled under the provisions of IRCA/OBRA are finding it difficult to access timely prenatal care services.

Table 10 also shows that newly enrolling women receiving cash assistance were less likely than women in the poverty-related group to enroll in their first trimester in each State. Even by 1991, only about one-half of all newly enrolling pregnant women were determined to be eligible in their first trimester. However, it is not clear that increases in early enrollment for pregnant women had leveled off by 1991. Enrollment may still be improving.

To determine whether certain subgroups of women were consistently enrolling in Medicaid later in pregnancy, we used multivariate analysis to assess the relationship between the limited set of demographic and enrollment factors, and the timing of enrollment during pregnancy. The results (not reported here) reveal several patterns that are the same from State to State, but the differences across demographic subgroups are not large in magnitude, and the explanatory power of the models is low. We found that women who are white or between the ages of 18 and 29 were enrolled longer before delivery relative to non-white women of different ages. We also found that women in urban areas enrolled slightly later than women in rural areas, although the differences are small, ranging from only 1 to 2 weeks. Because the findings are weak, the regression analysis cannot indicate which subgroups should be considered by the State for greater outreach efforts.

To further assess variation in early enrollment within the States, we examined rates of first trimester enrollment for the largest urban counties in each State, which included the cities of Los Angeles, Oakland, San Diego, Atlanta, Detroit, and Memphis (data not shown). In general, enrollment timing was worse in large urban areas compared with the rest of the State. The counties in which Detroit, Atlanta, and Memphis are located were enrolling only about 42 percent of the women in the poverty-related group in the first trimester, 7 to 15 percentage points less than the State averages for that group. Among large counties in California, Los Angeles County had the least success reaching women early in pregnancy. Only one-quarter of newly enrolled IRCA/OBRA aliens and 43 percent of women in the poverty-related group were enrolled in the first trimester in Los Angeles County. Whether this is due to the different racial/ethnic composition in rural and urban areas or more significant problems with urban eligibility systems is unclear. However, these findings suggest

[11]It appears that only a small number of women may be coming across the border from Mexico just to deliver: 89 percent of all IRCA/OBRA aliens were enrolled a full month before they delivered (Norton, Kenney, and Ellwood, in press).

that there may be more problems in the large urban areas than elsewhere in the State in the timely enrollment of pregnant women in Medicaid.

DISCUSSION

Our analysis confirms that Medicaid eligibility expansions and improved enrollment procedures of the 1980s have had some of their intended impact. In all four study States, the number of Medicaid-financed births increased dramatically from 1987 to 1991. By 1991, the proportion of Medicaid-financed births was close to 40 percent or higher, compared with 22 percent to 31 percent only 5 years earlier. All four States also reported that more women enrolled in Medicaid early in the course of pregnancy. By 1991, Georgia and Tennessee enrolled close to two-thirds of pregnant women in Medicaid during their first trimester, compared with about one-half the caseload in 1987. Michigan achieved early enrollment for more than three-quarters of its caseload in 1991. It is very encouraging that these improvements in early enrollment occurred during a time of such tremendous growth in caseloads. Given that the effects of changes in enrollment systems and timing do not appear to emerge immediately, the situation may still be improving.

While these accomplishments are encouraging, this analysis reveals some troubling findings, which raise concerns about the efficacy of Medicaid expansions for pregnant women. By providing coverage to uninsured pregnant women, these expansions are intended to remove a major financial barrier to timely prenatal care during pregnancy. However, the analysis shows that these four States were not able to bring newly enrolled pregnant women onto Medicaid early in pregnancy. California, the least successful, enrolled 39 percent of newly eligible pregnant women in their first trimester, while Michigan, the most successful, enrolled 54 percent. If women continue to enroll late in pregnancy, the expansions may not promote significantly earlier use of prenatal care. In addition, the temporary nature of the expansions may, in itself, be problematic. That is, continuous health insurance coverage not related to pregnancy per se may be a prerequisite for improving birth outcomes. Unlike the temporary coverage provided through the expansions, continuous coverage could make it easier for women to obtain care early in pregnancy, could better promote health at the time of conception, and by ensuring access to family planning, could make it more likely that pregnancies are wanted.

This analysis shows that the poverty-related expansions have brought different types of pregnant women onto Medicaid in Georgia, Michigan, and Tennessee. Women in the poverty-related group are more likely to be white and to reside in suburban or rural areas than are women in the cash assistance group. They are also less likely to have been enrolled in Medicaid at some point before pregnancy, making them less familiar with the Medicaid system.

These results suggest that States need to persist in their efforts to reach women early in the course of pregnancy, and that special outreach efforts may be required in large urban areas, where women were not enrolled as early as they were in other areas. Since women in the poverty-related group are much more likely to be new to the Medicaid system, outreach efforts may be especially critical. To this end, States might want to consider toll-free hotlines, multimedia campaigns, and better public information materials. Early enrollment can be encouraged by informing potentially eligible women that Medicaid eligibility

rules are considerably less restrictive than they once were, and that the eligibility determination process has been simplified and generally occurs much more quickly.

This analysis also raises some issues specific to California. On the positive side, the number of Medicaid-financed births in California almost doubled over the 5-year study period, which may have greatly reduced the number of pregnant women lacking insurance coverage. The State used local monies to extend the Medicaid threshold to 200 percent of the FPL, which is greater than the 185 percent allowable for Federal Medicaid matching funds. The State also absorbed into its caseload over a 3-year period large numbers of low-income pregnant women made eligible for Medicaid under the IRCA/OBRA legislation. Many of these newly covered aliens were not eligible for Federal matching funds for prenatal care under Title XIX. However, given that so few IRCA/OBRA aliens enrolled in their first trimester, it is not clear that State coverage of prenatal care is actually prompting much earlier use of prenatal care. Proposition 187, which would eliminate the State-funded prenatal care coverage for OBRA aliens, would obviously have further negative implications for the timing and content of care received by pregnant women in this group.

The fact also remains that, if we exclude IRCA/OBRA aliens and women receiving cash assistance, the number of Medicaid-financed deliveries was very stagnant from 1987 to 1991. Furthermore, this occurred even though the Medicaid income threshold for pregnant women was raised from 109 percent in 1987 to 200 percent by 1991. This lack of growth in the number of covered deliveries in the population not receiving cash assistance in California (except for the IRCA/OBRA aliens) is puzzling. The State may need to consider some of the actions of other States in order to improve the enrollment of pregnant women who are not eligible for cash assistance. In particular, it seems possible that California's continued use of asset requirements and its failure to implement presumptive eligibility in determining Medicaid eligibility for pregnant women may be constraining growth.[12] It was found in a U.S. General Accounting Office study (1991) that dropping the assets test and implementing presumptive eligibility were most closely associated with increased enrollment of pregnant women in State Medicaid programs. The study pointed out that assets testing makes the Medicaid eligibility process more like filling out a mortgage application. Without assets testing, applicants generally only need to verify their pregnancy status and provide information on income and proof of residence. Presumptive eligibility for pregnant women also sends a much more positive message to women about the likelihood that they will qualify for Medicaid coverage, which in itself may be an incentive to apply.

Finally, there is no assurance that increased Medicaid financing and earlier enrollment of pregnant women will necessarily lead to earlier use of prenatal care or to improved birth outcomes. The timing of Medicaid enrollment during pregnancy and the use of prenatal care reflect to some extent the choices of pregnant women that are not within the direct control of Medicaid programs. Thus, the effects of improvements in the Medicaid eligibility system on the use of prenatal care, and, ultimately, on birth outcomes may be limited. Although the Medicaid expansions have the potential to reduce many barriers to prenatal care faced by low-income women, they do not address

[12]Recently released information suggests that California intends to drop its assets requirements for pregnant women at a future date (National Governors' Association, 1994).

underlying socioeconomic and behavioral factors that affect prenatal care and birth outcomes. Therefore, improving the functioning and scope of the Medicaid system may be only one of many steps needed to improve the health and well-being of America's newborns.

TECHNICAL NOTE

Computation of Births Covered by Medicaid

The number at the root of our calculations is the total number of mothers in each State who had hospital-based claims for delivery. This understates the number of births financed by Medicaid because it fails to account for Medicaid-covered women with outpatient deliveries, deliveries to women in capitated plans, and multiple births—both per delivery and per year.

We then added to this the number of women enrolled in capitated plans who were estimated to have had a delivery. We assumed that the proportion of Medicaid-covered women with a delivery in capitated plans was the same as for cash assistance Medicaid women not enrolled in capitated plans. The estimated share of women enrolled in capitated plans with deliveries in 1987 was 12 percent in California, 14 percent in Michigan, and 5 percent in Tennessee. The corresponding figures for 1991 were 9 percent for California, 17 percent for Michigan, and 3 percent for Tennessee. The data from Georgia were not adjusted, since no women in this State were enrolled in capitated plans for either time period. We then multiplied this sum by a factor that reflects the average number of births per delivery. The adjustment factor for 1987 was 1.01123, and for 1991, it was 1.01269, since the share of multiple births rose between 1987 and 1991.

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REFERENCES

Braveman, P., Bennett, T., Lewis, C., et al.: Access to Prenatal Care Following Major Medicaid Eligibility Expansions. *Journal of the American Medical Association* 269(10):1285-1288, March 10, 1993.

Clark, R.L., Passel, J.S., Zimmerman, W.N., and Fix, M.E.: Fiscal Impacts of Undocumented Aliens: Selected Estimates for Seven States. Washington, DC. The Urban Institute, September 1994.

Dubay, L.C., Kenney, G.M., Norton, S.A., and Cohen, B.C.: Local Responses to Medicaid Expansions for Pregnant Women. *The Milbank Quarterly* 73(4):535-563, 1995.

Fox, H.: The Medically Needy Option for Expanding Medicaid Eligibility. Unpublished memorandum to Maternal and Child Health and Crippled Children's Services Directors, February 1985.

Gold, R.B., and Kenney, A.M.: Paying for Maternity Care. *Family Planning Perspectives* 17(3):103-111, May/June 1985.

Herz, E.J., and Dodds, S.: Building Analysis Files to Study Medicaid-Financed Deliveries and Birth Outcomes. Washington, DC. SysteMetrics/MEDSTAT, July 1994.

Howell, E.M., and Ellwood, M.R.: Medicaid and Pregnancy: Issues in Expanding Eligibility. *Family Planning Perspectives* 23(3):123-128, May/June, 1991.

Kenney, G., and Norton, S.A.: Medicaid Expansions for Pregnant Women: The Experience of Michigan. Washington, DC. The Urban Institute, 1993.

National Governors' Association: State Coverage of Pregnant Women and Children—July 1994. Washington, DC. August 1994.

Newacheck, P.W.: Estimating Medicaid-Eligible Pregnant Women and Children Living Below 185 Percent of Poverty. Washington, DC. National Governors' Association, 1988.

Norton, S.A., Kenney, G.M., and Ellwood, M.R.: California Medicaid Coverage of Maternity Care for IRCA/OBRA Aliens. *Family Planning Perspectives*, In press.

Piper, J.M., Mitchel, E.F., and Ray, W.A.: Expanded Medicaid Coverage for Pregnant Women to 100 Percent of the Federal Poverty Level. *American Journal of Preventive Medicine* 10(2):97-102, 1994a.

Piper, J.M., Mitchel, E.F., and Ray, W.A.: Presumptive Eligibility for Pregnant Medicaid Enrollees: Its Effects on Prenatal Care and Perinatal Outcomes. *American Journal of Public Health* 84(10):1626-1630, October 1994b.

Singh, S., Gold, R.B., and Frost, J.J.: Impact of the Medicaid Eligibility Expansions on Coverage of Deliveries. *Family Planning Perspectives* 26(1):31-33, January/February 1994.

Skellie, B.: Personal communication. Georgia Department of Medical Assistance, 1994.

U.S. General Accounting Office: *Prenatal Care: Early Success in Enrolling Women Made Eligible by Medicaid Expansions.* Washington, DC. U.S. Government Printing Office, February 1991.

Reprint Requests: Marilyn Ellwood, Mathematica Policy Research, Inc., 600 Maryland Avenue, SW, Washington, DC 20024-2512.