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Discontinuous Coverage in Medicaid and the Implications of 12-Month Continuous Coverage for Children

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A C K N O W L E D G E M E N T S

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E X E C U T I V E   S U M M A R Y

M edicaid and the State Children's Health Insurance Program (SCHIP) are the two key public programs providing health insurance coverage to low-income children. While Medicaid enrolls more than 20.7 million children and SCHIP enrolls more than 3.3 million children, many eligible children fail to enroll in these programs, and among those who do enroll, a large fraction experience disruptions in coverage (Kenney and Haley 2001; Almeida and Kenney 2000; Selden, Banthin, and Cohen 1999; and Selden, Banthin, and Cohen 1998).[1] Enrollment and eligibility processes for these programs are often difficult for families; anecdotal evidence suggests that children frequently lose eligibility for program benefits because of the complexities associated with maintaining coverage (Kannel et al. 2001; Kenney and Haley 2001; Perry 2001; Bachrach, Belfort, and Lipson 2000; and Ellwood 1999). As one focus group participant mentioned, while Medicaid and SCHIP programs make establishing coverage relatively easy, maintaining coverage is difficult because of confusing and complex communications between the programs and families (Kannel et al. 2001). The temporary loss of eligibility creates gaps or discontinuous coverage among children at a time when stable coverage can be extremely beneficial. Children with stable insurance coverage are more likely to have continuous care and a medical home, and their care is more likely to comply with recommended guidelines and be less costly as conditions are identified and treated at earlier stages (Berman et al. 1999; and Kogan et al. 1995).

PURPOSE OF THE STUDY

In response to the difficulties of maintaining eligibility in public health insurance programs, the Balanced Budget Act of 1997 (BBA-97) gave states the option of providing up to 12 months of continuous coverage for children through age 18 enrolled in Medicaid and SCHIP. In order to help states assess this policy option and its impacts on Medicaid and

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[1]Based on an unpublished MPR analysis of data from the Statistical Enrollment Data System (SEDS), Medicaid programs enrolled about 20.7 million children under age 19 during federal fiscal year 2000, with six states not reporting. During the same time period, states enrolled 3.3 million children in SCHIP. During a give year some children will change coverage between the Medicaid and SCHIP programs, these enrollment figures, therefore, are not summative.

SCHIP programs, this report examines the implications of continuous coverage under Medicaid programs. While the majority of separate SCHIP programs have implemented this policy, cost concerns have made Medicaid programs reluctant to do so. State policymakers want to make sure that any costs associated with this policy are commensurate with improvements in the quality of care children receive through the Medicaid program. For example, in Minnesota some believe continuous coverage should be tested first, to demonstrate that the policy improves children's health care within 6 to 12 months of enrollment (American Health Line 2001g).

The analysis presented in this report focuses on the extent to which a policy of continuous coverage improves the continuity of Medicaid coverage and decreases the incidence of gaps in coverage that result when children temporarily lose Medicaid eligibility. This report also investigates the impacts of the policy on Medicaid payments and administrative costs, as well as the impacts on use and payments for emergency room services.

The results presented only pertain to the Medicaid program, but they reflect what separate SCHIP programs should also realize under a policy of continuous coverage. The Medicaid data are used to develop a set of conclusions for policy purposes. Because of similarities between Medicaid and separate SCHIP programs, the effects of continuous coverage are expected to be similar across these programs.

METHODOLOGY

Using 1994-1995 Medicaid enrollment and payment data from four states—California, Michigan, Missouri, and New Jersey—this study examined the implications of a policy of 12-month continuous coverage. The number and characteristics of children who experienced discontinuous coverage, as well as the health care costs and administrative savings associated with the policy were examined. In addition, claims data from one state—California—were used to analyze the implications of continuous coverage on the quality of care as it is reflected in the use and payments for emergency room services.

FINDINGS

Findings on the extent of discontinuous coverage indicate that:

- ■ *Discontinuity in coverage affects a relatively small proportion of children who would qualify for continuous coverage.* Even though the study states did not have continuous coverage during 1995, most children were already continuously enrolled in Medicaid for 12 months or longer in 1995. Presumably, similar patterns would be seen in separate SCHIP programs. Study results show that only about five to nine percent of Medicaid children who would qualify for continuous coverage in the four study states experienced gaps in their Medicaid coverage of two or more

months during 1995. It is important to note that not all Medicaid children are eligible for continuous coverage. Children qualifying for Medicaid through medically needy eligibility provisions are explicitly excluded from this type of coverage by BBA-97. We also assumed that most states would exclude children receiving benefits through the Supplemental Security Income (SSI) program, children who are refugees and undocumented aliens, and children qualifying through 100 percent state-funded programs. After applying these exclusions, we found that 74 percent of all Medicaid children in California would have qualified for continuous coverage in 1995, compared to 89 percent in Michigan, 90 percent in New Jersey, and 98 percent in Missouri.

- ■ *Some groups of children are at greater risk of discontinuous coverage.* Adolescents ages 15 to 19, Hispanics, children qualifying for Medicaid under the poverty-related eligibility provisions, and children who spend part of the year enrolled in a state's medically needy program are more likely to experience discontinuous coverage compared to other Medicaid children. Children with these characteristics have also been identified in other studies as having serious problems accessing the health care system, and a policy of continuous coverage may be especially important in helping improve their access to services (Brown et al. 2000; Newacheck et al. 1999; and Stoddard, St. Peter, and Newacheck 1994). In addition, these groups are more likely to have a greater need for health care. For example, spend down provisions suggest that children who qualify for coverage through medically need program have relatively large medical expenditures. According to data compiled by the National Center for Health Statistics, the fraction of children with any activity limitation increases with age. In addition, Hispanics are more likely than white, non-Hispanics to report their health as fair or poor, be overweight or obese, have limitations in activities of daily living, and contract acquired immunodeficiency syndrome (AIDS) (NCHS 2000).[2]

- ■ *A policy of continuous coverage would significantly lower, but not completely eliminate, the number of children with discontinuous coverage in public insurance programs.* Generally, a policy of 12-month continuous coverage would cut in half the number of children with discontinuous coverage. It is estimated that a continuous coverage policy would reduce the number of children with discontinuous coverage to two to four percent of Medicaid children who would qualify, compared to five to nine percent without the policy. Inevitably, some children will continue to experience gaps in Medicaid coverage, even with a policy change. For

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[2] The activities of daily living include eating, bathing, dressing, and getting around inside the home.

example, many families will continue to fail to meet annual renewal requirements, causing children to experience gaps in their coverage.

Findings on the impacts of 12-month continuous coverage indicate:

- *The number of children eligible for continuous coverage and ever enrolled during a year would increase.* In the Medicaid program the number of children ever enrolled during the year would increase 10 to 17 percent, similar results are expected to apply to SCHIP programs as well. This increase and its magnitude results from a sizeable number of children whose periods of enrollment would be extended into the following year. Their enrollment ended in the previous year, but 12-month continuous coverage would extend their enrollment periods into the following year. These additional children include not only those who previously had discontinuous coverage, but also those whose enrollment period was simply extended as a result of this policy.

- *The total number of months of coverage would increase.* The Medicaid administrative data indicate the increase would be 10 to 16 percent. Presumably, SCHIP programs would experience a similar increase. The impact of continuous coverage is most pronounced on the length of enrollment among discontinuously covered children. Depending on the state, these children gain an average of two to three months of additional coverage.

- *The average cost per enrollee month would decline slightly.* The percentage increase in expenditures is slightly less than the percentage increase in the number of children enrolled and the number of additional months of coverage. The findings reflect the expectation that utilization would be somewhat lower than average during the additional months of coverage. Medicaid and separate SCHIP programs adopting continuous coverage will want to refine their capitated payment rates to reflect this change.

- *Among children who would qualify, overall payments would increase.* In the study states, Medicaid payments increased by about 9 to 15 percent upon implementation of continuous coverage. Expenditures increase because more children are covered for longer periods of time and similar results are expected to apply to SCHIP programs as well. However, the overall impact on Medicaid payments for *all* children is somewhat less than these percentages suggest because the expenditures of children not eligible for 12-month continuous coverage are not included.

■ *Administrative costs associated with disenrollments, re-enrollments, and redeterminations in states using a six-month redetermination period would fall substantially.* In all states, discontinuous coverage results in administrative expense because staff resources must be devoted to processing disenrollments and reenrollments when a gap in coverage occurs. A policy of continuous coverage would reduce these expenses. In addition, the 12 state Medicaid programs and 3 separate SCHIP programs that redetermine eligibility every 6 months would experience a substantial reduction in the number of redeterminations performed during a year and realize considerable administrative savings if they implemented a policy of 12-month continuous coverage. The number of redeterminations would increase in those states that currently redetermine eligibility once every 12 months, partially offsetting the savings associated with fewer disenrollments and reenrollments.

■ *Staff costs associated with disenrollments, reenrollments, and redeterminations are only a small portion of administrative expenses associated with the costs of operating public health insurance programs.* While it is estimated that processing disenrollments, reenrollments, and redeterminations are costly, among the four study states, these administrative costs represent between 2 and 12 percent of overall Medicaid administrative costs.

■ *Effects on emergency room use and payments were not conclusive.* Continuous coverage is expected to improve children's access to appropriate and timely care, promote a more continuous relationship with primary care physicians, and, in turn, reduce the use of acute care services such as emergency room services. Most of the findings suggest that continuous coverage is unlikely to alter emergency room utilization patterns. These findings are consistent with other research showing that children will continue to face barriers to care—such as a lack of transportation or primary care providers, or difficulties understanding the complexities of the health care system—even though they may have adequate insurance coverage (Mustard et al. 1996).

DISCUSSION

These findings have important implications for states and their approach to creating a state-based system of health care for children.

Continuous coverage can be a key part of a state's multifaceted strategy to improve children's health insurance coverage. Continuous coverage is a necessary element in a states' efforts to provide children with access to care that is continuous. States must, however, take additional steps to ensure that all children fully realize the benefits of coverage that is continuous and seamless. Health status will improve as more children have stable coverage and a medical home which provides them with better access to preventive and primary care services and better management of acute and chronic conditions. Eligibility determination processes for public insurance programs continue to be complex for families; any effort to simplify these processes will increase the likelihood that all eligible children are enrolled in, and stay enrolled in, Medicaid and SCHIP. States have made tremendous efforts to improve and simplify eligibility and enrollment processes by eliminating face-to-face interviews and reducing the frequency of redeterminations (Bachrach, Belfort, and Lipson 2000; and Ross and Cox 2000). States have also simplified verification requirements and some use preprinted redetermination forms—Michigan is one example. States implementing separate state programs under SCHIP face the additional challenge of coordinating program procedures between Medicaid and SCHIP so that the system of coverage and care for children is seamless. As SCHIP matures, greater emphasis in the area of program coordination will be required, and states will need to continue to adjust their outreach and eligibility processes in order to ensure that all eligible children are enrolled and stay enrolled as long as they are eligible.

Continuous coverage can be an important component in Healthy People 2010 initiatives. Healthy People 2010 seeks to eliminate health disparities across different segments of the population (DHHS 2000). Because some children are more vulnerable to gaps in coverage, continuous coverage in Medicaid and SCHIP could be one important step states take to eliminate disparities in coverage and access. Having health insurance and a regular primary care provider are measures used by Healthy People 2010 to track improvement in the access to care. Continuous coverage is a direct policy step states can take to demonstrate measurable improvements in these measures.

Future research should monitor state experiences so that a full accounting of the costs and benefits associated with a policy of 12-month continuous coverage can be made. These findings are consistent with research that shows health insurance coverage improves access to preventive care services and any policy that improves access to Medicaid and SCHIP coverage will increase the use of and payments for preventive care services. Over time as the management and continuity of children's health care improves, children's health care costs may be less than otherwise. Further research will be needed to assess the longer-term effects of the policy, including whether it lowers overall health care costs. The study also represents a first step in understanding the impacts of this policy on the administrative processes and costs associated with eligibility and enrollment in these programs. Additional research will be needed to fully understand how Medicaid and SCHIP programs adapt administrative systems (including computer systems) and procedures when this type of simplification strategy is implemented.

DIRECTIONS FOR FUTURE RESEARCH

This study improves the general understanding of how continuous coverage affects publicly financed insurance programs and children's access to care, but a full accounting of all costs and benefits associated with this policy has yet to be made. This study faced several data limitations that affected the scope of the work, but some of these limitations could be addressed through the use of more recent data. Slowly, over time, more states have implemented continuous coverage policies and a research design that exploits this staggered adoption could compare enrollment patterns, Medicaid and SCHIP payments, and emergency room use between states that have and have not adopted the policy. More recent years of data for states that have adopted a policy of continuous coverage would at least allow for an analysis based on a pre- and post-policy design. A study of enrollment, payments, and quality of care before and after the implementation of the policy would at a minimum confirm or refute the results of this study.

CHAPTER I

INTRODUCTION

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T his report looks at the implications of 12-month continuous coverage for children in the Medicaid program. Continuous coverage is a state policy option that allows children to maintain their Medicaid coverage for 12 consecutive months, regardless of changes in income, resources, or family structure. The following discussion reviews the importance of this policy, the conceptual framework underlying the study, and the impacts that could be analyzed with available data.

THE PROBLEM OF DISCONTINUOUS COVERAGE

Health insurance provides an important gateway to the health care system. Research shows that children with insurance coverage receive more medical care services (Newacheck et al. 1999; Stoddard, St. Peter, and Newacheck 1994; St. Peter, Newacheck, and Halfon 1992; Monheit and Cunningham 1992; and Rosenbach 1989). Among children, those with insurance are more likely to have had a recent preventive check-up and receive better quality care during acute asthma episodes compared to uninsured children (Ferris et al. 2001 and Ettner 1996). Because insurance coverage is a crucial link to health care services, the lack of insurance coverage among a sizable number of children has been a priority issue for public officials and policymakers. The Census Bureau estimates that, of the more than 72 million children under 18 years of age, nearly 14 percent were uninsured in 1999 (U.S. Census Bureau 2001).

While the importance of health insurance coverage has been demonstrated, less research has been done to understand the importance of *stable insurance coverage*. As work by Czajka and Olsen (2000) demonstrates, children's health insurance status can be unstable and can change over the course of a year. They estimate that between July 1993 and June 1994, 33 percent of children under 18 years of age—approximately 23 million children—experienced a change in their insurance coverage. Approximately 8 million children lost insurance coverage during this period, but 7.8 million uninsured children gained coverage. At the same time, 5.9 million children left the Medicaid program, but 5.5 million entered the program.

Stable insurance coverage is likely to be an important prerequisite to having a usual source of care. Unstable insurance coverage makes it more difficult to establish a medical home and obtain continuous care. Research has shown that having a usual source of care and a medical home is an important element in children's access to care (Berman et al. 1999; and Kogan et al. 1995). A stable patient-provider relationship is expected to improve the timeliness of preventive care, compliance with care regimens, coordination with specialists and ancillary care providers, and satisfaction of families. Stable insurance coverage and continuous care can be particularly critical for younger children who require a series of primary care services to ensure the healthiest childhood possible.

Given the importance of stable insurance coverage, policymakers have focused increasingly on the problem of discontinuous coverage in Medicaid and the State Children's Health Insurance Program (SCHIP), the two key programs providing health insurance coverage to low-income children. Enrollment and eligibility processes in Medicaid, and to a lesser extent in SCHIP, are complex for families. Anecdotal evidence suggests that, once they are enrolled in Medicaid, children frequently lose this coverage because of the complexities associated with maintaining coverage (Kannel et al. 2001; Kenney and Haley 2001; Perry 2001; Bachrach, Belfort, and Lipson 2000; and Ellwood 1999). For example, half of the children enrolled in New York's Medicaid and SCHIP program lose coverage during their redetermination period (American Health Line 2001a). Many children in Ohio lose SCHIP coverage because of fluctuations in income or failure to reapply after an enrollment period ends (American Health Line 1999). Focus groups with parents of children recently disenrolled from the SCHIP programs in California, New Jersey, and Utah reveal that while parents find outreach helpful and enrollment processes to be relatively easy, maintaining coverage has been difficult (Kannel et al. 2001). Difficulties arise from confusing communications with the programs, misunderstanding of on-going eligibility requirements, and family circumstances.

While enrolled in Medicaid and SCHIP, families are required periodically to verify that family income remains low enough to be within program guidelines. Various complexities associated with ongoing income verification and eligibility processes are believed to cause some children to lose coverage despite being eligible. In addition, families experience fluctuations in income and family structure. These fluctuations can result in the temporary loss of coverage if income temporary exceeds program guidelines. Recent research suggests that between mid-1993 and mid-1994, nearly 45 percent of children left the Medicaid program, two-thirds of these children became uninsured. The most significant factor driving this change in coverage was not increased income but the loss of welfare benefits, which suggests that many of these children remained eligible for coverage (Czajka and Olsen 2000). In other work, Garrett and Holahan (2000) show that when children leave welfare and Medicaid, nearly half become uninsured.

One strategy available to address the problem of discontinuous coverage in Medicaid is a policy of 12-month continuous coverage. With the passage of the Balanced Budget Act of 1997 (BBA-97), states were granted greater flexibility in providing continuous coverage to children in Medicaid and SCHIP. Previously, Medicaid programs were allowed only to

I. Introduction

provide continuous coverage for pregnant women, up to 90 days postpartum, and infants to their first birthday. With the BBA-97, Medicaid and SCHIP programs are now allowed to provide up to 12 months of continuous coverage for most children through age 18. However, not all children are eligible for this policy. The BBA-97 stipulates that children enrolled through medically needy programs are not eligible. Some states also make continuous coverage conditional. For example, The Lewin Group (1999) reports that in Indiana, continuous coverage is available only to children whose families are not receiving welfare or food stamp benefits. SCHIP programs sometimes make continuous coverage conditional on payment of premium payments (Delaware, Indiana, and Washington) or enrollment in managed care (Kentucky). While Medicaid programs have been reluctant to change their policies, new separate SCHIP programs typically embrace continuous coverage and other policies that enhance children's access to coverage. As the information in Table I.1 shows, as of July 2000, 15 Medicaid programs and 22 of 32 separate SCHIP programs had a policy of 12-month continuous coverage.[1]

Reluctance to adopt continuous coverage among Medicaid programs results primarily from cost concerns. Recently, the Texas state legislature passed a bill to simplify the Medicaid eligibility and enrollment processes for children. Among other things, this bill phases in 12-month continuous coverage for children. A tight state budget and shortfalls in the Medicaid program made passage of this legislation difficult and extremely tenuous (American Health Line 2001b-f; and American Health Line 2000). States such as Minnesota, New York, and Ohio have been considering continuous coverage, but cost concerns have been paramount (American Health Line 2001a; American Health Line 2001g; and American Health Line 1999). In Minnesota, some believe continuous coverage should be tested first, to demonstrate that it improves children's health care within 6 to 12 months of enrollment (American Health Line 2001g).

What little research has been done on the cost implications of continuous coverage confirms some of these concerns. Using data from California's Medi-Cal program, The Lewin Group estimated that 12-month continuous coverage would increase the number of enrollee months by approximately 16 percent, and the state's share of annual additional costs would range from $149 to $177 million (The Lewin Group 1999). The study examined costs during the first three years after implementation of the policy, and was silent on how this policy might affect longer-term health care costs of low-income children.

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[1] States can also implement a Medicaid expansion through SCHIP. All Medicaid policies apply to these expansions.

Table I.1: Frequency of Redeterminations and 12-Month Continuous Coverage in Medicaid and Separate State Children's Health Insurance Programs (SCHIP) by State—July 2000

State	Medicaid		Separate SCHIP	
	Frequency of Redeterminations	12-Month Continuous Coverage	Frequency of Redeterminations	12-Month Continuous Coverage
Alabama	12 months	Yes	12 months	Yes
Alaska	6 months	No	NA	NA
Arizona	12 months	No	12 months	Yes
Arkansas	12 months	No	NA	NA
California	12 months	No[a]	12 months	Yes
Colorado	12 months	No	12 months	Yes
Connecticut	12 months	Yes	12 months	Yes
Delaware	12 months	No	12 months	Yes[b]
District of Columbia	12 months	No	NA	NA
Florida	12 months[c]	Yes[c]	6 months[c]	No[c]
Georgia	6 months	No	12 months	No
Hawaii	12 months	No	NA	NA
Idaho	12 months	Yes	NA	NA
Illinois	12 months	Yes	12 months	Yes
Indiana	12 months	Yes	12 months	Yes[b]
Iowa	12 months	No	12 months	Yes
Kansas	12 months	Yes	12 months	Yes
Kentucky	12 months	No	12 months	No[d]
Louisiana	12 months	Yes	NA	NA
Maine	6 months	No	6 months	No[e]
Maryland	12 months	No[f]	NA	NA
Massachusetts	12 months	No	12 months	No
Michigan	12 months	No	12 months	Yes
Minnesota	6 months	No	NA	NA
Mississippi	12 months	Yes	12 months	Yes
Missouri	12 months	No	NA	NA
Montana	12 months	No	12 months	Yes
Nebraska	12 months	Yes	NA	NA
Nevada	12 months	No	12 months	Yes
New Hampshire	12 months	No	12 months	No[e]
New Jersey	6 months	No	12 months	No
New Mexico	12 months	Yes	NA	NA
New York	12 months	Yes	12 months	No
North Carolina	12 months	Yes	12 months	Yes
North Dakota	12 months	No	12 months	Yes

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Table I.1: Frequency of Redeterminations and 12-Month Continuous Coverage in Medicaid and Separate State Children's Health Insurance Programs (SCHIP) by State—July 2000

State	Medicaid		Separate SCHIP	
	Frequency of Redeterminations	12-Month Continuous Coverage	Frequency of Redeterminations	12-Month Continuous Coverage
Ohio	12 months	No[g]	NA	NA
Oklahoma	6 months	No	NA	NA
Oregon	6 months	No	6 months	No
Pennsylvania	12 months	No	12 months	Yes
Rhode Island	12 months	No[f]	NA	NA
South Carolina	12 months	Yes	NA	NA
South Dakota	12 months	No	NA	NA
Tennessee	6 months	No	NA	NA
Texas	6 months[h]	No[h]	12 months	Yes
Utah	12 months	No	12 months	Yes
Vermont	6 months	No[f]	NA	NA
Virginia	12 months	No	12 months	No
Washington	12 months	Yes	12 months	Yes[i]
West Virginia	12 months	No	12 months	Yes
Wisconsin	12 months	No	NA	NA
Wyoming	6 months	No	12 months	Yes

Source: Ross and Cox, 2000 with updates from State Health Facts Online (Kaiser Family Foundation 2001), August 16, 2001 and SCHIP annual reports for 2000.

Note: Medicaid expansions implemented under SCHIP follow Medicaid policies.

[a]On June 28, 2001 California received a Medicaid waiver to adopt a policy of 12-month continuous coverage for children enrolled in Medi-Cal, California's Medicaid program (American Health Line 2001h).

[b]Applies only if monthly premiums are paid. In Indiana, continuous coverage does not apply when the child obtains creditable private insurance coverage.

[c]Annual redeterminations and continuous coverage are only available to children under six years of age in the Medicaid program. Twelve-month continuous coverage is also provided to children who enroll in the separate SCHIP program for children with special health care needs, Children Medical Services (CMS).

[d]Continuous coverage is provided when a child lives in a region covered by a managed care partnership.

[e]Maine and New Hampshire provide six months of continuous coverage.

[f]Upon initial enrollment, children receive six months of continuous coverage.

[g]Ohio has submitted an 1115 waiver application for 12-month continuous coverage for children with family income between 150 and 200 percent of poverty.

[h]On May 18, 2001 the state legislature in Texas passed a bill that phases in 12-month continuous coverage (American Health Line 2001f).

[i]Continuous coverage is denied when the family fails to SCHIP premiums for four months or the child becomes Medicaid eligible.
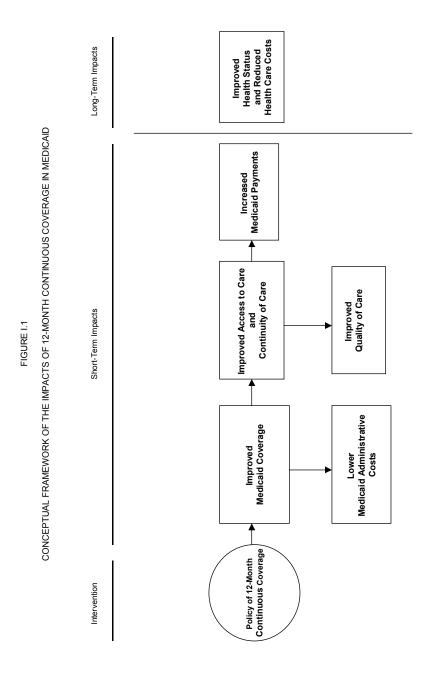
NA = Not applicable

In addition to the increased Medicaid payments associated with covering more children for longer periods, states must consider the types of administrative processes and systems that require alteration when this type of policy change is implemented. While administrative savings are likely to be realized when staff process fewer disenrollments, reenrollments, and redeterminations, information systems must be changed if these savings are to be realized. In Kansas, computer systems have been prematurely redetermining the Medicaid and SCHIP eligibility of children because the state uses a single computer system to determine eligibility for an array of programs including welfare, food stamps, and health insurance. Kansas has had to reprogram its computer system to address this problem (Allison, LaClair, and St. Peter 2001).

Although many states may be reluctant to adopt a policy of 12-month continuous coverage, many have been willing to simplify their procedures by the adoption of longer eligibility periods and less frequent redeterminations of eligibility. Medicaid programs in 40 states and separate SCHIP programs in 29 of 32 states only redetermine a child's eligibility once every 12 months (see Table I.1). Reducing the frequency of redeterminations is a first step in addressing the problem of discontinuous coverage in these programs and could be considered an *implicit* form of continuous coverage. However, without the provision that coverage is guaranteed to be continuous, families must comply with reporting requirements, and children's eligibility can be lost during the 12-month enrollment period due to fluctuations in family income and family structure.

CONCEPTUAL FRAMEWORK

The conceptual framework underlying the analysis of 12-month continuous coverage assumes that this policy will affect children's health care costs and health status through impacts on Medicaid coverage patterns and children's access to care. Figure I.1 depicts this framework. Within this framework, it is hypothesized that a policy of continuous coverage can have numerous impacts. As discussed below, available Medicaid administrative data allowed the analysis some, but not all, of these impacts.

A policy of 12-month continuous coverage can be expected to affect Medicaid coverage. Medicaid coverage patterns are likely to be affected by this policy because the policy will reduce the prevalence and risk of discontinuous coverage. More children will be enrolled for longer, more continuous periods of time. Chapter III presents the analysis of these effects. Through a simulation of the policy using Medicaid administrative data, the analysis examines the extent to which continuous coverage reduces the percentage of Medicaid children who have gaps in their coverage. The analysis also examines the prevalence of discontinuous coverage among subgroups of children, in order to better understand which groups face greater risks for coverage gaps and which groups benefit the most from a policy of continuous coverage.

FIGURE I.1

CONCEPTUAL FRAMEWORK OF THE IMPACTS OF 12-MONTH CONTINUOUS COVERAGE IN MEDICAID

Intervention	Short-Term Impacts	Long-Term Impacts

Policy of 12-Month Continuous Coverage

Improved Medicaid Coverage

Lower Medicaid Administrative Costs

Improved Access to Care and Continuity of Care

Improved Quality of Care

Increased Medicaid Payments

Improved Health Status and Reduced Health Care Costs

I. Introduction

Improved Medicaid coverage can be expected to affect children's access to care and the continuity of their care. If Medicaid coverage is more stable and fewer children experience gaps in coverage, access to care and the continuity of care will improve. Children will be more likely to have a usual source of care and a medical home they can use over time, regardless of the presence of a particular medical condition. Their care will be more likely to comply with recommended guidelines and be less costly as conditions are identified and treated at earlier stages. Unfortunately, the administrative data available for this study did not allow us to test this relationship directly. Determining whether continuous coverage affects access to care and the continuity of care requires data that capture *all* health care services used by children, not only those financed by the Medicaid program. Services obtained outside the Medicaid program while the child was enrolled in Medicaid or when the child experienced a gap in coverage could not be measured. As a result, the study could not analyze impacts on the access to care or the continuity of care.

Improved access and continuity can be expected to affect the overall quality of children's health care. Maintaining a care schedule is difficult when barriers to care exist and care is not continuous. Reporting no usual source of care and lower access to care are, in turn, associated with using fewer preventive services and having higher rates of preventable hospitalizations for chronic medical conditions (Ettner 1996; and Bindman et al. 1995). Because the data contained no direct measures of the quality of care, the analysis of this relationship was based on emergency room (ER) visits and payments. During periods of Medicaid coverage, discontinuously covered children may use more ER services and have more acute needs when they go to the ER than continuously covered children, because they may be more likely to:

- Have acute episodes that require ER services, particularly during the first few months of an enrollment period

- Enroll in Medicaid retroactively when using the ER during a period of no insurance

- Have formed the habit of using the ER for nonurgent services during periods of no insurance

The analysis presented in Chapter VI examines the number of ER visits per month, as well as ER payments per month and per visit. ER visits for all diagnoses are examined first. A second analysis examines only visits for ear, nose, and throat diagnoses, conditions more likely to be sensitive to changes in the quality of ambulatory care.

Improved access and continuity can be expected to affect Medicaid payments. When access to care improves, children's care is expected to be more timely and continuous. They are more likely to receive preventive care services and to be in compliance with preventive care guidelines. It is also likely that acute conditions will be caught and treated at earlier stages, and the management of chronic conditions will be improved. As a result, the

use of preventive and primary care services is likely to increase increase, while services used to treat subsequent acute episodes are reduced. Because the study could not measure access to care or the continuity of care, how improvements in access to care affect Medicaid payments also could not be tested directly. However, this relationship was tested indirectly by analyzing the extent to which improvements in Medicaid coverage affect Medicaid payments. The analysis of continuous coverage and Medicaid payments, presented in Chapter IV, focuses on overall Medicaid payments, as well as payments per enrollee month of coverage.

A policy of 12-month continuous coverage can be expected to affect Medicaid administrative costs. Because children are enrolled for longer periods of time and have fewer gaps in coverage, the Medicaid program is expected to process fewer disenrollments and reenrollments that occur when children lose and then regain coverage. If this policy also reduces the frequency with which eligibility must be redetermined, the program will process fewer redeterminations because enrollment periods are longer. Thus, Medicaid programs are expected to realize some administrative savings as a result of implementing continuous coverage. Chapter V examines the administrative costs associated with the time that staff devote to these processes. Because available data did not include information on when redeterminations actually occurred—and because the study had minimal information regarding administrative costs associated with disenrollments, reenrollments, and redeterminations—the estimates of administrative costs and the change in these costs are preliminary. Further research based on more detailed information is required before a full understanding of the impacts of this policy on administrative costs can be achieved.

A policy of 12-month continuous coverage can be expected to affect the long-term health status and health care costs of children. Because this policy improves children's health insurance coverage, their access to care, and the continuity of their care, children's long-term health status can be expected to improve and their overall health care to cost less than would otherwise be the case, because acute conditions are avoided or treated at earlier stages and chronic conditions are better managed. Because the data did not include information on long-term health status, this relationship was not tested and this issue is left to further research.

CHAPTER II

METHODOLOGY

T he analyses of 12-month continuous coverage and its implications for Medicaid programs presented in the following chapters are based on Medicaid administrative data. The available data dictated that the analysis be based on statistical modeling techniques that predict what enrollment, payments, and emergency room (ER) use would have been, had states implemented this policy. The data do not support an analysis of the policy based on experimental or comparison groups.

The following sections describe the study states, data, and samples used. Also presented is an overview of the methodologies used to analyze impacts of the policy. Complete methodological details are presented in Appendix A.

THE STUDY STATES

The analyses of the impacts of 12-month continuous coverage are based on Medicaid administrative data for 1994 and 1995 from four states: California, Michigan, Missouri, and New Jersey. The selection criteria for the study states included participation in the State Medicaid Research Files (SMRF) system in 1994 and 1995, the size of the Medicaid population, the degree of managed care penetration, and whether or not the state implemented 12-month continuous coverage in Medicaid or the State Children's Health Insurance Program (SCHIP). Data in Table II.1 present the number of children enrolled in 1995 in each study state, as well as information about key eligibility policies of each state's Medicaid and SCHIP programs.

None of the four states have implemented a policy of 12-month continuous coverage in their Medicaid programs.[1] California, Michigan, and Missouri redetermine eligibility once a

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[1] The Department of Health and Human Services recently approved California's application to provide 12 months of continuous coverage for children enrolled in California's Medicaid program, Medi-Cal.

year for their Medicaid programs, while New Jersey redetermines eligibility every six months. Three of these states have separate SCHIP programs, and each one redetermines eligibility annually.[2] Annual redetermination periods could be interpreted as an *implicit* form of continuous coverage. Without continuous coverage, families are responsible for reporting changes in income and family structure between redeterminations. Children lose coverage when the family reports an income increase above the Medicaid eligibility thresholds. Michigan, Missouri, and New Jersey do not use any regularly scheduled interim reporting procedures; until recently, however, California required families to submit quarterly reports regardless of any changes.[3] Failure to submit would cause the family to lose eligibility.

Table II.1: Number of Children Enrolled in Medicaid (1995) and Key Eligibility Policies for Medicaid and Separate SCHIP Programs, by Study State

	California	Michigan	Missouri	New Jersey
Number of Children Enrolled in Medicaid in 1995	2,198,066	543,287	347,712	356,618
Medicaid				
Frequency of Redeterminations	Annually	Annually	Annually	6 months
Quarterly Status Reports	Yes	No	No	No
Continuous Coverage	No	No	No	No
Separate SCHIP				
Frequency of Redeterminations	Annually	Annually	NA	Annually
Continuous Coverage	Yes	Yes	NA	No

Source: 1995 data from Health Care Financing Administration, HCFA-2082, "Medicaid Eligibles by Basis of Eligibility and by Region and State: Fiscal Year 1995."

NOTES: Missouri's SCHIP program is a Medicaid expansion. The other three states have also implemented a Medicaid expansion through SCHIP. Medicaid eligibility policies apply to these programs.

SCHIP = State Children's Health Insurance Program
NA = Not applicable

THE DATA

The data used in the analyses come from the State Medicaid Research Files (SMRF) and cover calendar years 1994 and 1995. These files contain the most current Medicaid data available in a uniform, research format. More recent Medicaid data are available, but the transformation of these data into a research format would have required considerable resources.

SMRF are uniform research files created from the Medicaid Statistical Information System (MSIS). Currently, only SMRF data for calendar years 1992 to 1995 are available,

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[2] All four states also implemented a Medicaid expansion through SCHIP and Medicaid eligibility policies presented here apply to these expansion programs.

[3] Quarterly reporting requirements ended on January 1, 2001.

and these data are available for only 33 states. Because not all states have been part of the SMRF system, the selection of states for this study was conditional on the availability of these data.

For each state in SMRF, the SMRF file system consists of a yearly person-summary file and four types of yearly claims files: inpatient, drug, long-term care, and other services. Data from the yearly person-summary file form the basis of the analysis of Medicaid coverage, payments, and administrative costs (Chapters III, IV, and V). This file contains monthly eligibility information in a single record for each individual enrolled for at least one month during the calendar year. Monthly information in this file allows the construction of enrollment histories that show which months in a calendar year a child was or was not enrolled. Eligibility information includes the eligibility group (for example, Aid to Families with Dependent Children (AFDC) or medically needy), state-specific eligibility codes, and managed care enrollment for each month of the calendar year. Some demographic information—such as gender, date of birth, and race/ethnicity—is available in this file. Also included in the yearly person-summary file are each enrollee's total Medicaid payments for the calendar year. This information was used to determine the impacts of continuous coverage on Medicaid payments (Chapter IV).

The "other services" file contains claims for ER visits (Chapter VI). Records in this file are organized by date of service and represent a variety of services delivered during the calendar year, including physician visits and durable medical equipment, as well as premium payments. Each record carries information about the date of service, type of claim, and type of provider. Records also include primary diagnosis, procedure information, and the final Medicaid payment for the service.

Records from the inpatient file were also examined (although ultimately not used) to determine when an ER visit was followed by an inpatient stay. Each inpatient record represents a single inpatient stay and contains the date of admission, the date of discharge, and the total Medicaid payment for the stay. Primary and secondary diagnoses and procedures are also included on these records.

STUDY SAMPLES

The analyses included only children who could be eligible for 12-month continuous coverage.[4] The policy regulations specifically state that only children through age 18 are eligible for continuous coverage. The study samples included all children eligible for continuous coverage and under 19 years of age as of December 31, 1994. This age cut-off

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[4] Because the Medicaid program in California served more than 3 million children during the 1994 and 1995 period, the estimates for California are based on a 20 percent sample. The work done by The Lewin Group (1999) was based on a five percent sample.

allowed the inclusion of a group of children who "age out" of continuous coverage during 1995.

The analyses exclude certain groups of children. Regulations stipulate that children covered through medically needy provisions are not eligible for continuous coverage. In addition, the analysis assumed that other types of children, such as those eligible for coverage through the Supplemental Security Insurance (SSI) program, special refugee provisions, undocumented aliens, those eligible only for prenatal care, or those covered through state-funded-only programs would not be eligible for 12 months of continuous coverage. Whenever the eligibility codes allowed the identification of these groups, they were excluded from the analysis.[5]

Children were excluded from the analysis if they were *only* eligible through one of the excluded groups—such as medically needy, SSI, special refugees, or undocumented aliens. It is relatively common for Medicaid enrollees to change eligibility categories during a calendar year. For example, children may initially be covered through welfare-related provisions, but later in the year change groups and obtain coverage through other categories such as medically needy or SSI when welfare benefits are terminated and eligibility under another category is established. As a result, the study samples include children who spend part of their enrollment periods covered through one of the excluded groups. These children are included because they had at least one month of coverage through welfare, poverty, or other provisions assumed to be eligible for continuous coverage.

After applying these restrictions, 74 percent of children in California were found to have been eligible for 12 months of continuous coverage in 1995, compared to 89 percent in Michigan, 98 percent in Missouri, and 90 percent in New Jersey. The relatively large number of children excluded in California results from the relatively large number of children covered through medically needy-related provisions and the detailed state-specific codes in California, which allow the identification of special subgroups such as refugees and those with limited benefits. Conversely, Missouri does not have a medically needy program, which partially explains why so few children from that state were excluded from the analysis. Appendix B reports the demographic characteristics of the children in the study.

MEDICAID ENROLLMENT

The first step of the analysis determined how a policy of 12-month continuous coverage could affect a child's enrollment history. The approach to this component is similar to that used by The Lewin Group and their analysis of continuous coverage in Medi-Cal, the Medicaid program in California (The Lewin Group 1999).

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[5] The study of continuous coverage by The Lewin Group (1999) assumed that children in the medically needy program would be eligible for continuous coverage because their income would be low enough to qualify. This study also assumed fewer other exclusions; as a result, their study only excluded 0.5 percent of children in the Medicaid program.

The analysis of Medicaid enrollment uses each child's actual enrollment history from 1994 and 1995, and simulates what enrollment would have been in 1995 if the state had a policy of 12-month continuous coverage in 1994 and 1995. Beginning with each child's first month of observed enrollment in 1994 or 1995, the simulation provides the child with 12 months of coverage. At the end of the 12 months, the child's actual enrollment history is checked. If the child actually is enrolled in the month after the completion of the simulated enrollment period, the simulation assigns another 12 months of coverage. If the child is not enrolled in that month, the simulation searches for the next month of observed enrollment and starts another 12-month enrollment period. Table II.2 presents the actual enrollment history for three children (A) and what their enrollment would have been under a policy of 12-month continuous coverage (S). The first example presents a child with a gap in coverage and demonstrates how this policy eliminates the gap. The second example demonstrates that, for some children, this policy will extend coverage into the next calendar year. The last example shows a child with consecutive enrollment periods.

TABLE II.2: Three Examples of Actual Enrollment (A) and Simulated Enrollment (S) Under a Policy of 12-Month Continuous Coverage (S) by Month Between January 1994 and December 1995

	Months in 1994												Months in 1995											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Example One:																								
Actual enrollment:																								
8 months in 1994 and 11 months in 1995		A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A
Simulated Enrollment:																								
11 months in 1994 and 12 months in 1995		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Example Two:																								
Actual enrollment:																								
8 months in 1994					A	A	A	A	A	A	A	A												
Simulated Enrollment:																								
8 months in 1994 and 4 months in 1995					S	S	S	S	S	S	S	S	S	S	S	S								
Example Three:																								
Actual enrollment:																								
9 months in 1994 and 7 months in 1995				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
Simulated Enrollment:																								
9 months in 1994 and 12 months in 1995				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

MEDICAID PAYMENTS

The analysis of Medicaid payments relies on the annual payments reported in the person-summary file of the SMRF data, with some adjustments. As a first step, children in managed care had to be identified. Because their payments do not reflect direct service use, their payments were estimated separately from the payments for children in fee-for-service. For children who spent part of the year in fee-for-service and the other part in managed care, fee-for-service payments were separated from managed care payments by subtracting premium payments for managed care from total Medicaid payments for the year.

The next step was to determine Medicaid payments in 1995, when a policy of 12-month continuous coverage was not in place. In Chapter IV, these payments are referred to as "*Estimated Payments*." Children in fee-for-service were divided into six groups according to the length of their actual enrollment in 1995 (1-3 months, 4-5 months, 6-7 months, 8-9 months, 10-11 months, and 12 months). Using the same regression model, a separate Medicaid payment equation was estimated for each group of children, resulting in six estimated payment equations. The six equations were used to estimate each child's 1995 fee-for-service Medicaid payments adjusted for the child's demographic characteristics, primary eligibility group in 1995, and 1994 Medicaid enrollment history, payments, and hospitalizations.

Payments for children in managed care were based on the children's actual premium payments and were not adjusted. The estimate of total 1995 payments for children who switched between fee-for-service and managed care is the sum of their estimated fee-for-service payments, which was based on the number of months they were enrolled in fee-for-service, and actual managed care payments.

After estimating total 1995 Medicaid payments for children enrolled during that year, the analysis next simulated payments under a policy of 12-month continuous coverage, referred to as "*Simulated Payments*" in Chapter IV. These payments reflect what payments would have been, had a policy of 12-month continuous coverage been in place in 1995. The set of six equations estimated in the previous step were used to simulate payments for children in fee-for-service under a policy of continuous coverage. Each child in fee-for-service was reassigned to one of the six equations, based on the child's *simulated* length of enrollment in 1995 under a policy of continuous coverage. For example, the child depicted in example 1 in Table II.2 would have *estimated payments* based on the group of children with 10 to 11 months of actual enrollment in 1995, but *simulated payments* would be based on the group of children observed to be enrolled for 12 months during 1995.

These simulated payments were estimated for children *only* in fee-for-service in 1995. Simulated payments for a child enrolled *only* in managed care were based on the child's actual monthly capitated payments and the number of months the child would have been enrolled, had a policy of 12-month continuous coverage been in place in 1995.

Estimated payments when continuous coverage is not implemented for children who switched between fee-for-service and managed care during the year were estimated by taking

a weighted average of their estimated payments in fee-for-service and in managed care. The weights in this calculation represented the proportion of time in fee-for-service and managed care, respectively. Simulated payments were also weighted to reflect the proportion of time spent in managed care and the proportion of time in fee-for-service. For example, if a child was observed to spend one-quarter of the enrolled period in 1995 in managed care and three-quarters in fee-for-service, it was assumed that one-quarter of his or her simulated months of enrollment would be in managed care and that the other three-quarters would be fee-for-service.

ADMINISTRATIVE COSTS

Minimal data on administrative costs were available for this analysis. Typically, states do not track administrative costs at the level required for this research, and SMRF data do not include information that indicates when a child's eligibility was redetermined. To try to understand how continuous coverage is likely to affect administrative costs, rough estimates of administrative costs for disenrollments, reenrollments, and redeterminations were constructed based on a market valuation of staff time required to process these events.

To determine administrative costs, the analysis first counted the number of disenrollments, reenrollments, and redeterminations each child had. A disenrollment was counted every time an enrollment period was followed by at least two months of ineligibility. A reenrollment was counted every time an enrollment period started after a break in coverage, as long as that break lasted at least two months. A redetermination was counted after 12 consecutive months of enrollment in California, Michigan, and Missouri and 6 consecutive months in New Jersey. These counts were first calculated using the actual enrollment of children in 1994 and 1995, then recalculated using the simulated enrollment histories under a policy of 12-month continuous coverage.

After the number of disenrollments, reenrollments, and redeterminations that actually occurred and would have occurred if a policy of 12-month continuous coverage had been in place were determined, the amount of time administrative staff spend completing each of these events was estimated. Estimates of staff time were based on a range of times that reflects information gathered during telephone interviews with Medicaid and SCHIP eligibility staff in the four study states. Staff time was valued across a range of hourly wage rates.

As a last step, costs were aggregated across all disenrollments, reenrollments, and redeterminations and compared these costs with and without a policy of 12-month continuous coverage. The difference between these two cost estimates reflects the administrative savings associated with the policy. While these estimates are relatively crude, they do provide a range of savings that states are likely to realize from this policy.

EMERGENCY ROOM UTILIZATION AND PAYMENTS

The analysis also examined the use of ER services and compared use between continuously covered and discontinuously covered children. ER service use is only one of many possible indicators of how continuous coverage affects service use patterns and, indirectly, the quality of care.

California was the focus for this analysis. This state was chosen because of the size of its Medicaid program relative to other states and because of the diversity of its population. In fiscal year 1998, the 3.5 million children age 20 and under who were receiving Medicaid in California accounted for 17 percent of all children receiving Medicaid (HCFA 2000). With millions of children receiving care through Medi-Cal, this state offered the greatest statistical power to the analysis of the four states. Statistical power was a concern because, compared to other services such as physician visits, ER use is a rare event.

The analysis of ER services further restricted the analysis sample to children who were enrolled only in fee-for-service Medicaid in 1994 or 1995.[6] Children with any Medicaid months covered by Primary Care Case Management (PCCM) or managed care arrangements are not included in the sample because capitated payments preclude us from observing the total number of ER visits and their associated payments.[7]

To gain better insight into how a policy of 12-month continuous coverage might affect use of the ER, the analysis focused on how ER use and payments would be expected to change if discontinuously covered children obtained continuous coverage. ER use is measured as the number of ER visits per month enrolled in Medicaid, to control for different lengths of enrollment across children. Intensity of need is measured by outpatient ER payments per enrollee month and per visit.

The analyses of ER use and payments employed regression techniques to estimate how a policy of continuous coverage would alter the patterns of ER service use and payments among discontinuously covered children. Using ordinary least squares regression models, the number of ER visits per enrollee month, ER payments per enrollee month, and the payment per ER visit were estimated.[8] The models controlled for demographic

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[6] The analysis of ER use is based on a 20 percent sample of children enrolled in Medi-Cal during 1994 and 1995.

[7] Limiting the sample to fee-for-service children is unlikely to have affected our results. Children in fee-for-service may have lower health status than children in managed care arrangements, potentially resulting in more ER visits. There is no reason to believe, however, that this will differentially affect the estimates for either continuously or discontinuously covered children. See Appendix Table C.2 for details on the sample characteristics.

[8] The analyses of payments are based on the natural logarithm of payments per month or per visit. Payments typically are transformed in this manner because their distribution is frequently skewed. To derive predicted payments, we exponentiate the predicted value of log-dollars and multiply by the smearing factor.

characteristics, primary eligibility group during 1995, and 1994 Medicaid enrollment histories, payments, and ER use.

Three main analyses of ER use and payments were conducted. In the first analysis, all ER records were used to estimate ER use and payments. In the second analysis, the analysis was refined by exploring differences in the number of visits and payments for emergency room claims for ear, nose, and throat (ENT) diagnoses. Based on the results of previous research, ENT-related ER visits were expected to be more sensitive to the quality of ambulatory care relative to ER visits for other diagnoses (Parker and Schoendorf 2000; Gadomski et al. 1998; and Hadley and Steinberg 1993). In both analyses, the ER patterns of continuously covered children were used to estimate how discontinuously covered children would use the ER if they had continuous coverage, controlling for observed characteristics of the children.

Because the first two analyses may not adequately control for important differences between continuously and discontinuously covered children, the third analysis further restricted the sample to only discontinuously covered children, to better control for important, unobservable differences. This third analysis also served as a robustness test for the previous analyses. This last analysis investigated the impact on ER use and payments of reducing the length of the gap in Medicaid coverage to two months. This analysis focused on ER use and payments upon reenrollment after a gap in coverage and compares discontinuously covered children with longer coverage gaps to discontinuously covered children with gaps of only two months.[9] ER use and payments were examined in the first three months after the gap. This analysis was based on the hypothesis that reducing the average length of the gap in coverage would increase the provision of appropriate ambulatory care and result in lower and less costly ER use upon reenrollment.

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[9] We found that the average gap for *all* discontinuously covered children was 6.3 months long; but among those *with any ER visits,* the average gap in coverage was 5.9 months.

CHAPTER III

IMPACTS ON MEDICAID ENROLLMENT

A policy of 12-month continuous coverage in Medicaid is expected to prevent gaps in Medicaid coverage and reduce the prevalence of discontinuous coverage. Without continuous coverage, gaps in enrollment may result from temporary changes in income and family structure. In addition, children may temporarily lose coverage if families do not comply with reporting and redetermination procedures which can be complex and burdensome. In this section, the extent to which the introduction of 12-month continuous coverage reduces the prevalence of discontinuous Medicaid coverage and the types of children most at risk for discontinuous coverage is analyzed. Overall impacts on program enrollment are also explored.

IMPACTS ON THE PREVALENCE OF DISCONTINUOUS COVERAGE

Actual enrollment histories show that 5.6 to 8.8 percent of children eligible for continuous coverage in the four states had discontinuous Medicaid coverage in 1995 (see top panel of Table III.1). A child was considered to be discontinuously covered if an enrollment gap of two or more months was observed in 1995.[1] These children had two or more periods of enrollment. Of the remaining children, between 57.2 and 66.3 percent were continuously covered for all 12 months of 1995. Between 26.2 and 36.7 percent were continuously covered for less than 12 months, these children had only one period of enrollment, which lasted less than 2 months.[2]

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[1]Our definition includes gaps in coverage that began in 1994 and ended in 1995. It does not include gaps that started in 1995 but ended in 1996 because we did not have data from 1996.

[2]Among children with less than 12 months of continuous coverage *in 1995*, enrollment could have started in 1994, but ended in 1995, or started and ended in 1995, or started in 1995 and ended in 1996 or beyond. As a result, many of these children most likely had 12 or more months of continuous coverage, but did not have coverage for all 12 months in 1995.

Table III.1: Impacts of 12-Month Continuous Coverage on the Prevalence of Discontinuous Coverage for 1995

State	Total (Number)	Total (Percentage)	Continuously Covered for 12 Months (Percentage)	Continuously Covered for Less than 12 Months (Percentage)	Discontinuously Covered (Percentage)
			Without Policy (Actual Enrollment)		
California	2,712,590	100.0	66.3	26.2	7.5
Michigan	710,879	100.0	57.2	34.0	8.8
Missouri	451,175	100.0	61.2	33.1	5.7
New Jersey	423,092	100.0	57.7	36.7	5.6
			With Policy (Simulated Enrollment)		
California	2,987,545	100.0	71.4	25.0	3.6
Michigan	781,601	100.0	67.6	28.9	3.5
Missouri	495,398	100.0	69.0	28.6	2.4
New Jersey	493,783	100.0	62.4	35.5	2.1

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Samples included only children eligible for a policy of 12-month continuous coverage. Children were defined as discontinuously covered if they had a gap in coverage in 1995 that was at least two months long. Due to the size of the Medicaid program in California, the analysis was based on a 20 percent sample of children.

When a policy of 12-month continuous coverage is simulated, the prevalence of discontinuous coverage drops markedly. In California, the prevalence drops from 7.5 to 3.6 percent, and in Michigan the drop is from 8.8 to 3.5 percent. In Missouri and New Jersey, the policy reduces the prevalence of discontinuous coverage from 5.7 and 5.6 percent, to 2.4 and 2.1 percent, respectively. While the policy reduces the extent of discontinuous coverage markedly, 2.1 to 3.6 percent of children remain discontinuously covered in each state.

In the absence of a policy of continuous coverage, the risk of discontinuous coverage varies across demographic groups (see Table III.2). With regard to age, adolescents ages 15 to 19 in Michigan and Missouri are far more likely to experience discontinuous coverage relative to other age groups in their states. Ethnicity appears to be a risk factor for discontinuous coverage in two states. Hispanic children in California and Michigan are more likely than children of other racial/ethnic groups to experience discontinuous coverage. In California, 9.5 percent of Hispanic children are discontinuously covered; in Michigan, 19.1 percent of Hispanic children experience discontinuous coverage.

Table III.2: Impacts of 12-Month Continuous Coverage on the Risk of Discontinuous Coverage, by Selected Demographics

	Percentage of Children Discontinuously Covered			
State	California	Michigan	Missouri	New Jersey
	Without Policy (Actual)			
Number	2,712,590	710,879	451,175	423,092
Overall	7.5	8.8	5.7	5.6
Gender				
Females	7.5	9.0	5.9	5.8
Males	7.6	8.6	5.5	5.4
Age as of December 31, 1995				
Less than 1	1.2	0.9	0.5	0.5
1 to 6 years	9.0	9.7	5.8	6.4
6 to 15 years	6.5	8.6	5.8	5.4
15 to 19 years	8.8	11.5	7.7	6.7
Race/Ethnicity				
White	7.4	9.6	6.7	6.8
Black	4.9	6.8	3.7	5.3
Hispanic	9.5	19.1	0.4	5.4
Other	3.6	6.1	2.2	4.0
Primary Eligibility Group				
AFDC	4.8	7.3	5.0	5.1
Poverty-Related	29.2	11.0	6.4	6.4
Medically Needy/Disabled	25.5	17.5	7.1	5.3
Other	9.0	11.4	6.7	6.8
	With Policy (Simulated)			
Number	2,987,545	781,601	495,398	493,783
Overall	3.6	3.5	2.4	2.1
Gender				
Females	3.7	3.6	2.6	2.2
Males	3.6	3.3	2.3	2.0
Age as of December 31, 1995				
Less than 1	0.7	0.0	0.0	0.0
1 to 6 years	4.1	3.5	2.3	2.6
6 to 15 years	3.3	3.5	2.5	2.5
15 to 19 years	4.5	5.3	3.5	3.4
Race/Ethnicity				
White	3.4	3.9	2.8	2.5
Black	2.2	2.7	1.6	2.1
Hispanic	4.7	5.5	0.1	2.0
Other	1.8	2.7	0.7	1.3
Primary Eligibility Group				
AFDC	2.1	2.8	2.1	2.0
Poverty-Related	7.3	3.8	2.7	2.1
Medically Needy/Disabled	17.7	11.1	3.4	3.0
Other	3.3	4.2	3.0	2.6

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. Children switching eligibility groups during the year are classified according to the group in which they have the greatest number of enrollee months during 1995. The California data are based on a 20 percent sample of children.

III. Impacts on Medicaid Enrollment

Children covered primarily through the poverty-related or medically needy programs in California and Michigan face greater risk for discontinuous coverage than other children.[3] In California, 29.2 percent of children primarily eligible through poverty-related provisions, and 25.5 percent eligible through the medically needy program, experience discontinuous coverage. In Michigan, 11.0 and 17.5 percent of the children eligible through poverty-related and medically needy provisions, respectively, have discontinuous coverage. Children covered through other programs, such as Foster Care, also are at increased risk of discontinuous coverage: 9.0 percent in California and 11.4 percent in Michigan.

As seen in the lower panel of Table III.2, a policy of 12-month continuous coverage reduces the magnitude of disparities in the risk of discontinuous coverage. The policy minimizes age-related differences, although adolescents ages 15 to 19 continue to be at greater risk for discontinuous coverage compared with other age groups. Hispanics in California and Michigan also continue to be more likely to experience discontinuous coverage relative to other children (4.7 percent in California and 5.5 percent in Michigan), but the policy reduces differences across racial/ethnic groups.

Children who are covered primarily through the poverty-related and medically needy programs in California and Michigan face a lower risk of discontinuous coverage with a policy of 12-month continuous coverage in place. In California, the percentage of children in the poverty-related group experiencing discontinuous coverage is cut by 21.9 percentage points, from 29.2 to 7.3 percent. Among children in the medically needy program, the reduction is 7.8 percentage points, from 25.5 to 17.7 percent. Similarly, in Michigan, among children in the poverty-related program, a policy of 12-month continuous coverage reduces the percent experiencing discontinuous coverage by 7.2 percentage points, from 11.0 to 3.8 percent. Among children in the medically needy program, the prevalence falls 6.4 percentage points, from 17.5 to 11.1 percent.

IMPACTS ON NUMBER OF CHILDREN ENROLLED AND MONTHS OF COVERAGE

With a policy of continuous coverage in place, the Medicaid programs in these four states would serve more children during the calendar year and provide more total months of coverage (see Table III.3). Each state has a group of children with enrollment episodes that end in the previous year. However, as a result of the policy, these children would receive additional months of coverage, extending their enrollment episodes into the next calendar year. These children, referred to in this study as "spillover" children, would increase the number of children ever enrolled in Medicaid during the year from between 9.8 and 16.7 percent across the study states.

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[3] Because children can switch eligibility groups during a 12-month period, children are classified according to the eligibility group in which they had the greatest number of enrolled months. Children who were primarily covered by medically needy provisions were also covered through another category eligible for continuous coverage.

Table III.3: Impacts of 12-Month Continuous Coverage on the Number of Children Ever Enrolled, Total Number of Enrollee Months, and Average Length of Enrollment

State	Without Policy	With Policy	Difference Absolute	Percentage
California				
Number	2,712,590	2,987,545	274,955	10.1
Total Number of Enrollee Months	27,554,135 months	30,379,300 months	2,825,165 months	10.3
Average Length of Enrollment	10.2 months	10.2 months	0.0 months	0.0
Michigan				
Number	710,879	781,601	70,722	9.9
Total Number of Enrollee Months	6,831,804 months	7,749,149 months	917,345 months	13.4
Average Length of Enrollment	9.6 months	9.9 months	0.3 months	3.1
Missouri				
Number	451,175	495,398	44,223	9.8
Total Number of Enrollee Months	4,416,874 months	4,916,843 months	499,969 months	11.3
Average Length of Enrollment	9.8 months	9.9 months	0.1 months	1.0
New Jersey				
Number	423,092	493,783	70,691	16.7
Total Number of Enrollee Months	4,016,260 months	4,650,260 months	634,000 months	15.8
Average Length of Enrollment	9.5 months	9.4 months	-0.1 months	-1.1

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of children.

A policy of 12-month continuous coverage both increases the number of children enrolled during the year and provides children already enrolled with additional months of coverage. As a result, the policy increases the number of enrollee months covered by these Medicaid programs, from between 10.3 and 15.8 percent. However, the impact of continuous coverage is most pronounced on the length of enrollment among children who would be otherwise discontinuously covered (see Table III.4). Depending on the state, these children gain an average of two to three months of additional coverage—from roughly seven months on average to more than nine months on average. Even more important, in each state the policy provides roughly half of these children with continuous coverage. This finding suggests that a policy of 12-month continuous coverage greatly improves the stability of coverage for a group of children who may be most at risk of experiencing discontinuous care.

Table III.4: Impacts on the 12-Month Continuous Coverage on the Length of Enrollment Among Discontinuously Covered Children

State	Total Number of Discontinuously Covered Children in 1995	Average Number of Months Enrolled		Percentage of Discontinuously Covered Children Who Become Continuously Covered
		Without Policy	With Policy	
California	203,535	7.0 months	9.3 months	46.5
Michigan	62,291	6.8 months	9.6 months	56.7
Missouri	25,721	7.0 months	9.5 months	53.2
New Jersey	23,780	6.7 months	9.6 months	55.8

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. The California data are based on a 20 percent sample of children.

CONCLUSIONS

A policy of 12-month continuous coverage will reduce, but not eliminate, the problem of discontinuous coverage. The policy extends coverage to more than half of all children who otherwise would have experienced discontinuous coverage. The largest drop is seen in New Jersey, where the prevalence drops from 5.6 to 2.1 percent, which represents a 63 percent decline in the prevalence of discontinuous coverage.

The policy also reduces the disparities in the risk for discontinuous coverage across different groups of children. Depending on the state, these at-risk children include adolescents ages 15 to 19, Hispanics, and children covered primarily by the state's poverty-related and medically needy programs. While the policy reduces these disparities, some children will continue to face a greater risk of discontinuous coverage. Continuous coverage appears to address the elevated risk faced by children in poverty-related programs, but children who are covered at any time through medically needy programs remain particularly vulnerable to discontinuous coverage, primarily because they are ineligible for continuous coverage. In addition, continuous coverage through the medically needy program is difficult to maintain in a state such as California, where eligibility is based on the child's ability to meet monthly spend-down requirements.

Even with a policy of 12-month continuous coverage in place, states that adopt a continuous coverage policy will continue to observe a small group of children lose Medicaid coverage, only to reenroll within a few months, unless other steps are taken. In addition to those children not eligible for continuous coverage, children will continue to experience gaps in coverage that result from temporary fluctuations in income or family structure that occur during the redetermination period. Children also will continue to experience discontinuous coverage when families do not comply with reporting and redetermination processes. As suggested by other research, if states wish to effect changes beyond those that result from continuous coverage, efforts will have to be made to reduce the complexity and burden of these processes (Bachrach, Belfort, and Lipson 2000; and Ellwood 1999).

CHAPTER IV

IMPACTS ON MEDICAID PAYMENTS

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Children with stable insurance coverage are more likely to have a medical home and continuous care. Their care is more likely to comply with recommended guidelines and be less costly as conditions are identified and treated at earlier stages (Berman et al. 1999; and Kogan et al. 1995). These relationships suggest that when efforts are made to improve children's continuity of insurance coverage, the short-term costs of care will increase as the use of appropriate preventive and primary care services increases. Longer-term, overall health care costs can be expected to drop as acute conditions are avoided or treated at earlier stages and as the management of chronic conditions is improved.

The analysis of the impact of 12-month continuous coverage on Medicaid payments describes what payments would have been during calendar year 1995, had Medicaid programs in the four study states adopted a policy of 12-month continuous coverage. The analysis examines the impacts of the policy on total Medicaid payments, payments per child, and payments per enrollee month. Data on the overall impacts, as well as those specific to discontinuously covered children are presented. Ideally, we would have analyzed data on states that have adopted the policy, but these data were not available.

IMPACTS ON MEDICAID PAYMENTS

The data in Table IV.1 indicate that, under a policy of 12-month continuous coverage, total Medicaid payments for all children would have been 9 to 15 percent higher in 1995 in the study states. Total payments in Missouri increase to $512 million from $471 million, a 9 percent increase; whereas in New Jersey, payments under this policy increase 15 percent, from $522 million to $600 million.

Table IV.1: Impacts of 12-Month Continuous Coverage on Medicaid Payments: Total Payments, Payments per Child, and Payments per Enrollee Month (All Children)

State	California	Michigan	Missouri	New Jersey
	Without Policy (Estimated Payments)			
Total Payments	$1,941,185,825	$647,412,292	$470,680,198	$521,725,746
Payments per Child Enrolled	$716	$911	$1,043	$1,233
Payments per Enrollee Month	$70	$95	$107	$130
	With Policy (Simulated Payments)			
Total Payments	$2,138,537,890	$709,865,582	$512,364,072	$599,503,895
Payments per Child Enrolled	$716	$908	$1,034	$1,217
Payments per Enrollee Month	$70	$92	$104	$129
	Absolute Change			
Total Payments	$197,352,065	$62,453,290	$41,683,874	$77,778,149
Payments per Child Enrolled	$0	-$3	-$9	-$16
Payments per Enrollee Month	$0	-$3	-$3	-$1
	Percentage Change			
Total Payments	10.2	9.7	8.9	14.9
Payments per Child Enrolled	0.0	-0.3	-0.9	-1.3
Payments per Enrollee Month	0.0	-3.2	-2.8	-0.8

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of eligible children. Reported results include "spillover" children.

"Spillover" children, children whose enrollment episode in the prior year is extended into the next calendar year as a result of the policy, are one reason for the increase in total payments. When "spillover" children are excluded from the analysis, so as to focus on the effects of this policy among children already enrolled during the year, total Medicaid payments increase only 7 to 10 percent (see Table IV.2). "Spillover" children contribute between one and five percentage points to the increase in total Medicaid payments.

Estimated annual Medicaid payments per child range from $716 in California to $1,233 in New Jersey. Average annual payments per child do not change after implementation of a policy of 12-month continuous coverage. Payments per child either are not affected by the policy or they drop by approximately one percent. When "spillover" children are excluded, and the analysis focuses only on those children already covered during the year, annual payments per child under a policy of 12-month continuous coverage increase between 7 to 10 percent. "Spillover" children gain only a few additional months of coverage in the next year (1995), and payments for those additional months are relatively small. Inclusion of this group in the analysis, while important for understanding overall program impacts, masks the increase in annual payments among children who are enrolled regardless of the policy.

Medicaid payments per enrollee month are either the same or as much as three percent less when a policy of 12-month continuous coverage is implemented. The results are fundamentally the same if "spillover" children are excluded. This result suggests that the additional months of coverage resulting from this policy are somewhat less costly relative to the months Medicaid programs already cover without this policy.

Table IV.2: Impacts of 12-Month Continuous Coverage on Medicaid Payments: Total Payments, Payments per Child, and Payments per Enrollee Month (Only Children Enrolled in 1995 Regardless of the Policy)

State	California	Michigan	Missouri	New Jersey
	Without Policy (Estimated Payments)			
Total Payments	$1,941,185,825	$647,412,292	$470,680,198	$521,725,746
Payments per Child Enrolled	$716	$911	$1,043	$1,233
Payments per Enrollee Month	$70	$95	$107	$130
	With Policy (Simulated Payments)			
Total Payments	$2,070,512,080	$697,978,252	$508,369,552	$575,311,194
Payments per Child Enrolled	$763	$982	$1,127	$1,360
Payments per Enrollee Month	$70	$92	$106	$129
	Absolute Change			
Total Payments	$129,326,255	$50,565,960	$37,689,354	$53,585,448
Payments per Child Enrolled	$47	$71	$84	$127
Payments per Enrollee Month	$0	-$3	-$1	-$1
	Percentage Change			
Total Payments	6.7	7.8	8.0	10.3
Payments per Child Enrolled	6.6	7.8	8.1	10.3
Payments per Enrollee Month	0.0	-3.2	-0.9	-0.8

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of eligible children. Reported results exclude "spillover" children.

Although most of the increased payments associated with continuous coverage would result from increasing the length of enrollment for children, the increase in annual Medicaid payments is most pronounced for children who would otherwise be discontinuously covered (see Table IV.3). Across the four states, average annual Medicaid payments in 1995 among discontinuously covered children range from $535 to $841 (top panel). Their monthly payments range from $77 per month in California to $122 per month in New Jersey. Under a policy of 12-month continuous coverage, the annual Medicaid payments for these children increase 22 to 35 percent (bottom panel). This increase in payments reflects the two to three additional months of coverage, on average, that these children receive under this policy. It is notable, however, that their monthly payments decline between one and eight percent, a decline which suggests that the increase in additional months of coverage is greater than the increase in payments.

IV. Impacts on Medicaid Payments

Table IV.3: Impacts of 12-Month Continuous Coverage on Medicaid Payments Among Discontinuously Enrolled Children: Total Payments, Payments per Child, and Payment per Enrollee Month

State	California	Michigan	Missouri	New Jersey
Number of Children	203,535	62,291	25,721	23,780
	Without Policy (Estimated Payments)			
Total Payments	$109,665,345	$33,297,771	$15,591,791	$20,005,227
Payments per Child Enrolled	$539	$535	$606	$841
Payments per Enrollee Month	$77	$79	$87	$122
	With Policy (Simulated Payments)			
Total Payments	$134,064,235	$44,849,078	$20,858,077	$26,952,628
Payments per Child Enrolled	$659	$720	$811	$1,133
Payments per Enrollee Month	$71	$75	$86	$118
	Absolute Change			
Total Payments	$24,398,890	$11,551,307	$5,266,286	$6,947,401
Payments per Child Enrolled	$120	$185	$205	$292
Payments per Enrollee Month	-$6	-$4	-$1	-$4
	Percentage Change			
Total Payments	22.3	34.7	33.8	34.7
Payments per Child Enrolled	22.3	34.6	33.8	34.7
Payments per Enrollee Month	-7.8	-5.1	-1.2	-3.3

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. The California data are based on a 20 percent sample of eligible children.

IMPLICATIONS FOR MONTHLY CAPITATED PAYMENTS

The analysis above has implications for monthly capitated payments that states pay for coverage. It suggests that each additional month of coverage is either no more costly, and in some cases slightly less costly, than the months Medicaid programs cover when they do not provide continuous coverage. This finding is consistent with the expectation that utilization would be somewhat lower than average during the additional months of coverage.

Estimates of the payments for an additional month of coverage show the extent to which these new months cost less (see Table IV.4). While additional months of coverage in California cost the same as existing months of coverage ($70), in the other three states, additional months of coverage are less costly. In Michigan, each additional month of coverage is only $68, compared with the $95 per month for months the state already provides. An additional month of coverage in Missouri is $83, compared with $107; and, in New Jersey, an additional month of coverage is $123 compared with $130 for a month of coverage without a policy of continuous coverage.

IV. Impacts on Medicaid Payments

Table IV.4: Payments for Additional Months of Coverage for All Children (Children Enrolled Pre-Policy and Spillovers)

State	Without Policy (Estimated Payments)	With Policy (Simulated Payments and Enrollee Months)
California		
Total Payment	$1,941,185,825	$197,352,065
Total Number of Enrollee Months	27,554,135 months	2,825,165 months
Payments per Enrollee Month	$70	$70
Michigan		
Total Payment	$647,412,292	$62,453,290
Total Number of Enrollee Months	6,831,804 months	917,345 months
Payments per Enrollee Month	$95	$68
Missouri		
Total Payment	$470,680,198	$41,683,874
Total Number of Enrollee Months	4,416,874 months	499,969 months
Payments per Enrollee Month	$107	$83
New Jersey		
Total Payment	$521,725,746	$77,778,149
Total Number of Enrollee Months	4,016,260 months	634,000 months
Payments per Enrollee Month	$130	$123

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of eligible children. Reported results include "spillover" children.

CONCLUSIONS

Continuous coverage would increase total Medicaid payments. Total payments increase 9 to 15 percent in the four states studied, but payments per child and payments per enrollee month either do not change or drop by as much as 3 percent. The increase results from the additional months of coverage provided by a policy of 12-month continuous coverage. Over time, this policy might be expected to decrease overall health care costs as acute episodes are prevented or treated at an earlier stage and the management of chronic conditions is improved.

The evidence of lower payments per enrollee month illustrates the need for states to refine capitation rates under a policy of continuous coverage. The analyses demonstrate that the additional months of coverage resulting from this policy are less expensive than the months of coverage Medicaid programs provide without continuous coverage. Medicaid programs may also want to refine their capitated payment rates if they do not have age-specific rates. If rates reflect a blend of payments for care provided to children and adults, then rates could be adjusted downward to reflect an increase in the number of months of coverage provided to children relative to adults.[1]

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[1] As of 1999, child-specific capitation rates had not been developed for all aid categories in California (The Lewin Group 1999).

Managed care plans contracting with Medicaid programs should be able to accommodate slightly lower monthly per-member, per-month capitated rates because they will be covering children for longer periods, and longer enrollment periods should enhance their revenues. Plans should also realize some administrative savings from the reduction in processing of enrollments and disenrollments. If states are able to adjust capitated payment rates downward as a result of continuous coverage, then the estimates presented in this chapter overstate the actual impact of the continuous coverage on Medicaid payments.

CHAPTER V

IMPACTS ON MEDICAID ADMINISTRATIVE COSTS

A s discussed in Chapter III, a policy of 12-month continuous coverage reduces the prevalence of discontinuous coverage and provides more months of coverage. Fewer gaps in enrollment are expected to translate into a reduction in the number of disenrollments and reenrollments, thus reducing the associated administrative burdens and costs. This policy should also reduce family burden associated with gaps in coverage and the complex processes of establishing eligibility and maintaining coverage.

The findings show that continuous coverage dramatically reduces the number of disenrollments and reenrollments processed by Medicaid programs. The impact this policy has on the number of redeterminations performed depends on the frequency of redeterminations prior to implementation of this policy. If Medicaid programs were redetermining eligibility every six months, then the number of redeterminations done during the year will drop and Medicaid programs will realize significant savings in administrative costs upon implementation of 12-month continuous coverage. If a state uses an annual redetermination period, administrative costs will increase with a policy of continuous coverage. This increase occurs simply because fewer children will disenroll prior to redetermination.

Among children who would have been discontinuously covered without this policy, continuous coverage will increase the number of times the eligibility of these children is redetermined because this policy achieves its goals of preventing gaps in enrollment and providing longer enrollment periods. Compared with other children, discontinuously covered children are more likely to have short enrollment periods that end before a redetermination can occur. With a policy of continuous coverage, these children are enrolled for longer periods and are more likely to experience a redetermination.

IMPACTS ON DISENROLLMENTS AND REENROLLMENTS

For the Medicaid programs in the four study states, a policy of 12-month continuous coverage reduces the number of enrollment gaps and provides more months of coverage. As a result, fewer disenrollments and reenrollments occur during a calendar year. As shown in Table V.1, the drop in the number of disenrollments ranges from 2 percent in New Jersey to 31 percent in Michigan.

The number of reenrollments also drops dramatically under a policy of 12-month continuous coverage. In California, reenrollments drop by 50 percent. They drop by 63 percent in Michigan, 57 percent in Missouri, and 60 percent in New Jersey.

Table V.1: Number of Disenrollments and Reenrollments (All Children)			
State	Without Policy (Estimated Number)	With Policy (Simulated Number)	Percent Change
		Disenrollments	
California	623,520	540,355	-13.3
Michigan	207,593	143,150	-31.0
Missouri	106,265	81,953	-22.9
New Jersey	109,438	107,460	-1.8
		Reenrollments	
California	307,235	153,765	-50.0
Michigan	98,802	36,931	-62.6
Missouri	34,232	14,847	-56.6
New Jersey	34,846	13,930	-60.0

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of children.

The reduction in disenrollments and reenrollments produced by the policy, in turn, reduces the burden faced by families of discontinuously covered children. When a child loses coverage, the family faces the process of reestablishing eligibility. To the extent that a policy of 12-month continuous coverage eliminates gaps in coverage, this policy eliminates the burden families face when reestablishing eligibility. Table V.2 shows that the average number of disenrollments and reenrollments per child among children who would otherwise be discontinuously enrolled without a policy of continuous coverage. Among these children, the average number of disenrollments drops between 25 and 41 percent. The average number of reenrollments drops between 45 and 54 percent.

Table V.2: The Average Number of Disenrollments and Reenrollments per Discontinuously Covered Child

State	Without Policy (Estimated Number)	With Policy (Simulated Number)	Percent Change
	Disenrollments		
California	0.83	0.57	-31.3
Michigan	0.78	0.46	-41.0
Missouri	0.65	0.49	-24.6
New Jersey	0.69	0.48	-30.4
	Reenrollments		
California	1.1	0.6	-45.5
Michigan	1.1	0.5	-54.5
Missouri	1.0	0.5	-50.0
New Jersey	1.0	0.5	-50.0

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. The California data are based on a 20 percent sample of children. Not all discontinuously covered children have a disenrollment in the analysis year. Some children had their gap in coverage begin in the previous year, but end in the subsequent year without another disenrollment.

IMPACTS ON REDETERMINATIONS

Whether a policy of 12-month continuous coverage results in a reduction in the number of redeterminations depends on the frequency of redeterminations prior to the implementation of the policy. Table V.3 presents the aggregate number of redeterminations in each state before and after the simulation of 12-month continuous coverage. The number of redeterminations in such states as New Jersey, which redetermines eligibility every six months, is reduced by 35 percent. In states that redetermine eligibility every 12 months, the simulation shows that the number of redeterminations increases. In California, the number of redeterminations increases by 24 percent, in Michigan the increase is 29 percent, and in Missouri redeterminations increase by 25 percent.

"Spillover" children are one reason for the increase in the number of redeterminations. As a result of continuous coverage, the enrollment periods of these children are extended into the next calendar year. For these children, the timing of their redetermination period also is shifted from one year to the next. When "spillover" children are excluded from the analysis to understand the impact of these children, the drop in the number of redeterminations in New Jersey is more pronounced, increasing from 35 to 46 percent. In the other states, excluding "spillover" children reduces the increase in the number of redeterminations. In California, the number of redeterminations increases only 11 percent, whereas, in Michigan and Missouri, the increases are 16 and 12 percent, respectively.

Table V.3: Number of Redeterminations

State	Without Policy (Estimated Number)	With Policy (Simulated Number)	Percent Change
	Including "Spillover" Children		
California	2,110,650	2,607,390	23.5
Michigan	512,976	663,059	29.3
Missouri	339,145	422,270	24.5
New Jersey	639,193	413,451	-35.3
	Excluding "Spillover" Children		
California	2,110,650	2,342,370	11.0
Michigan	512,976	593,912	15.8
Missouri	339,145	378,037	11.5
New Jersey	639,193	344,253	-46.1

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of children.

The number of redeterminations also increases because the policy covers more children for longer periods of time. Without the policy in place, the enrollment periods of discontinuously covered children are shorter, and frequently these children are not enrolled long enough to have their eligibility redetermined. As a result of the policy, discontinuously covered children are more likely to have enrollment periods that are long enough for a redetermination to occur.

The average rate of redeterminations per child were estimated to better understand the impacts of this policy on families. The estimates in Table V.4 indicate that the average rate of redeterminations increases in three states—California, Michigan, and Missouri—ranging from 12 to 18 percent. Conversely, in New Jersey, the average number of redeterminations per child drops by 44 percent.

Table V.4: Average Number of Redeterminations per Child

State	Without Policy (Estimated Number)	With Policy (Simulated Number)	Percent Change
	Among All Children		
California	0.78	0.87	11.5
Michigan	0.72	0.85	18.1
Missouri	0.75	0.85	13.3
New Jersey	1.51	0.84	-44.4
	Among Discontinuously Covered Children Only		
California	0.23	0.76	230.4
Michigan	0.24	0.85	254.2
Missouri	0.27	0.90	233.3
New Jersey	0.78	0.87	11.5

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. The California data are based on a 20 percent sample of children.

A policy of 12-month continuous coverage has a dramatic impact on the number of redeterminations among children who otherwise would have discontinuous coverage. Among these children, the average number of redeterminations dramatically increases in three of the states. In California, Michigan, and Missouri, the number of redeterminations among these children increases more than threefold. In New Jersey, the increase is much smaller at only 12 percent.

IMPACTS ON ADMINISTRATIVE COSTS

A range of administrative cost savings associated with the changes in disenrollments, reenrollments, and redeterminations are estimated based the effort required of administrative staff to process these events and a range of wage rates. Effort is measured in minutes of time required for personnel to complete the processing of each administrative event. Each disenrollment is assumed to require an average of 15 minutes to process. In addition, the reenrollment of a child after the loss of eligibility is assumed to require the same amount of time as the redetermination of eligibility for current enrollees. The estimates are based on a range of time, from 30 minutes up to 60. The wage rate used in the analysis represents the median hourly wage rate for eligibility interviewers for government programs as reported by the Bureau of Labor Statistics. The wage rate was deflated from 1999 to 1995 dollars, using the Consumer Price Index.

Table V.5 reports the total estimated administrative costs associated with all disenrollments, reenrollments, and redeterminations that is estimated to have occurred in 1995. Depending on the assumptions used, administrative costs vary widely. This variation highlights the relationship between the level of effort required of staff to process various aspects of the eligibility and enrollment processes and program costs.

Table V.5: Total 1995 Administrative Costs for Disenrollments, Reenrollments, and Redeterminations

State	Estimated Administrative Costs
California	$3.3 - $6.2 million
Michigan	$4.3 - $8.0 million
Missouri	$2.5 - $4.8 million
New Jersey	$4.4 - $8.5 million

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of children. Administrative costs were based on the following calculation [number of disenrollments*15 minutes + number of reenrollments*staff time + number of redeterminations*staff time]*[12.06/60]. Staff time for reenrollments and redeterminations was varied between 30 and 60 minutes. The average hourly wage rate for eligibility interviewers for government programs was $12.06 in 1995 dollars.

These costs are relatively small when compared to the total administrative costs of Medicaid programs. Based on data reported by the states, these estimated costs represent between 2 and 12 percent of total Medicaid administrative costs reported for fiscal year 1995.[1] New Jersey, with its greater frequency of redeterminations, devotes the greatest proportion of administrative costs to disenrollments, reenrollments, and redeterminations—between 6 and 12 percent.

In the three states that realize an increase in the number of redeterminations when 12-month continuous coverage is implemented, administrative costs will also increase (see Table V.6). The increase ranges from 11 to 13 percent in California, 8 to 11 percent in Michigan, and 12 to 14 percent in Missouri. Conversely, in New Jersey, administrative costs drop by 48 percent.

Evidently, the reductions in the number of disenrollments and reenrollments do not offset the increase in the number of redeterminations. "Spillover" children, those children whose enrollment period is extended into the next year, are one reason. When "spillover"

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[1]Each quarter, states are required to submit expenditures information to the federal government. For this reporting, they use Form HCFA-64 which shows the disposition of funds. Reported administrative costs for the Medicaid program in California in fiscal year 1995 were $805,031,546. Michigan reported costs of $224,130,657, while Missouri and New Jersey each reported administrative costs of $92,041,861 and $68,882,183, respectively (CMS 2001).

V. Impacts on Medicaid Administrative Costs

children are excluded from the analysis to understand the impact of these children, administrative costs drop slightly in the three states experiencing an increase in redeterminations. Among children who would have been enrolled during the year regardless of the policy, administrative costs drop slightly under most circumstances. These results indicate that among some children the reduction in disenrollments and reenrollments offset the increase in the number of redeterminations. In California, for example, the overall impact of the policy is to increase administrative costs between 11.1 and 12.5 percent. However, when the analysis is limited to those children who would have been enrolled during the year regardless of the policy, administrative costs drop between 0.4 and 3.7 percent.

Table V.6: The Introduction of 12-Month Continuous Coverage and the Percentage Change in Administrative Costs

	Average Length of Redeterminations and Reenrollments		
State	30 minutes	45 minutes	60 minutes
	Percentage Change in Administrative Costs: Including "Spillover" Children		
California	11.1	12.0	12.5
Michigan	7.8	9.8	10.9
Missouri	12.1	13.6	14.4
New Jersey	-34.0	-34.8	-35.2
	Percentage Change in Administrative Costs: Excluding "Spillover" Children		
California	-3.7	-1.6	-0.4
Michigan	-6.8	-3.8	-2.2
Missouri	-3.5	-0.8	0.6
New Jersey	-48.2	-47.8	-47.6

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. The California data are based on a 20 percent sample of children. Staff time required for disenrollments was assumed to be constant at 15 minutes per disenrollment.

CAVEATS

How Medicaid programs actually manage the eligibility and enrollment of children will have a large influence on the administrative costs incurred by states. The estimates assume that *all* children enrolled in Medicaid are treated as separate cases because Medicaid is an individual benefit. Frequently, children are managed as part of a family group because other family members are eligible and enrolled. In these instances, the policy may have little impact on the number of disenrollments, reenrollments, and redeterminations. Parents and

other family members not eligible for continuous coverage will continue to lose eligibility when they fail to comply with reporting requirements or whenever income increases. Currently, California estimates that it costs $126.90 to enroll *a family* into Medi-Cal and that subsequent management of the family costs $22.07 a month. The ongoing costs of managing a family include costs associated with quarterly reports that families must submit. These reports are mandatory and must be submitted every quarter, or four times over a 12-month period.[2]

Many states will probably have to adjust computer systems to accommodate this policy. In phone interviews with state personnel, it was learned that the computer system used to track eligibility would automatically disenroll *all* family members whenever anyone in the family loses eligibility. Staff must process those family members who continue to be eligible to ensure that their coverage is maintained. Staff noted that the costs associated with changing the computer system would be considerable. After Kansas implemented continuous coverage in 1999, the state found that the computer system, which is used by a variety of different public programs, were prematurely redetermining the Medicaid and SCHIP eligibility of children who participate in the welfare or food stamp programs. Kansas has had to reprogram its computer system to address this problem (Allison, LaClair, and St. Peter 2001). The estimates of administrative costs do not include costs related to such system changes. However, these costs should occur only once upon implementation of the policy.

CONCLUSIONS

Because continuous coverage eliminates many gaps in coverage, it reduces the number of disenrollments and reenrollments programs must process and families must experience. However, the impacts of this policy on the number of redeterminiations are mixed and depend on the redetermination process prior to implementation of 12-month continuous coverage. Among states that redetermine eligibility more than once a year, 12-month continuous coverage will significantly reduce the number of redeterminations processed. As a result, these states are likely to realize significant administrative savings. States that have already taken the initial step of implementing an *implicit* form of continuous coverage and redetermine eligibility only once a year will actually experience an increase in the number of redeterminations when they take the next step and provide continuous coverage. This increase results from a policy that effectively closes gaps in coverage and extends coverage so that more children are covered long enough for an eligibility redetermination to occur. These states will realize an increase in administrative costs because the reduction in the number of disenrollments and reenrollments do not fully offset the increase in the number of redeterminations.

Regardless of the frequency of redetermination policies prior to implementation of the policy, the focus of the policy is to eliminate coverage gaps and provide more months of

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[2]As of January 1, 2001, quarterly reports were no longer required for Medi-Cal.

coverage. The simulation indicates that this policy achieves these goals. Without this policy, discontinuously covered children face short enrollment periods, separated by gaps in coverage and the need to reestablish eligibility. Because it extends coverage, continuous coverage increases the need to redetermine eligibility among children otherwise discontinuously covered. For most families, the expense of an increased likelihood of a redetermination is probably small compared with the benefit of obtaining continuous coverage.

CHAPTER VI

IMPACTS ON EMERGENCY ROOM
USE AND PAYMENTS

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I mproved quality of care is a potential benefit of a policy of 12-month continuous coverage. As discussed in Chapter I, previous literature suggests that providing children with continuous coverage may improve access to appropriate and timely care, as well as promote a more continuous relationship with primary care physicians. Better access to care, in turn, may reduce the use of acute care services such as emergency room (ER) services as children switch to outpatient care for non-urgent needs and prevent avoidable ER visits by using more preventive care.

In this chapter, a comparison of ER services and payments of discontinuously and continuously covered children based on Medicaid administrative data for California, is presented first. Presented next are the estimated impacts of continuous coverage on ER services for discontinuously covered children, based on multivariate regressions. ER use and payments are predicted for all diagnoses and again for only for ear, nose, and throat (ENT) diagnoses, which are more sensitive to appropriate ambulatory care. Finally, as a sensitivity test, the impacts of shorter gaps in coverage on ER use and payments are estimated.

DESCRIPTIVE COMPARISON OF ER SERVICES AND PAYMENTS BETWEEN DISCONTINUOUSLY AND CONTINUOUSLY COVERED CHILDREN

The analysis begins by comparing the level of ER service use and payments between the discontinuously and continuously covered children in the full ER sample and the subsample with ENT-related ER visits. Using both samples, children with discontinuous coverage are found to use more ER services than children with 12-month continuous coverage. Children with discontinuous coverage have both more ER visits per month and higher ER payments per month of enrollment (see Table VI.1).

Examining the full ER sample, the discontinuously covered children use an average of 90 ER visits per thousand months on Medicaid, whereas continuously covered children use a lower average of 70 visits per thousand months on Medicaid. The payment per visit for both groups of children is comparable: less than $70 per visit. ER payments per month of enrollment are higher for discontinuously covered children: $5.90 versus $4.60 for continuously covered children.

TableVI.1: Emergency Room Service Use and Payments in 1995 for California	Continuously Covered	Discontinuously Covered
	Full Sample	
ER Use and Payments for All Diagnoses		
Total Number of Children	245,956	33,923
Percentage with Any ER Visits	34.3 percent	25.9 percent
Average Number of ER Visits	0.9 visits	0.6 visits
Average Number of ER Visits per 1,000 Enrollee Months	70 visits	90 visits
Average Annual ER Payments	$56.00	$37.00
Average ER Payment per Month Enrolled	$4.60	$5.90
Average ER Payment per ER visit	$67.99	$69.35
Average Number of Months Enrolled	12.0 months	6.8 months
	ENT Sample	
ER Use and Payments for ENT-Related Diagnoses		
Total Number of Children	26,970	2,649
Percentage with Any ER Visits	100 percent	100 percent
Average Number of ER Visits	1.6 visits	1.5 visits
Average Number of ER Visits per 1,000 Enrollee Months	13 visits	24 visits
Average Annual ER Payments	$73.00	$68.00
Average ER Payment per Month Enrolled	$6.10	$10.90
Average ER Payment per ER visit	$47.10	$46.80
Average Number of Months Enrolled	12.0 months	7.6 months

SOURCE: Mathematica Policy Research, Inc. analysis of California SMRF data from calendar year 1995.

NOTES: The samples are based on a 20 percent sample of children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage in 1995 that is at least two months long. ER payments are for outpatient care only.

A similar pattern holds when ER use for ENT-related diagnoses is examined. Discontinuously covered children have more ENT-related ER visits per enrollee month, and higher monthly payments for the visits, than do continuously covered children. Payments per visit are comparable between the two groups.

These claims-based estimates are consistent with other published data. When the proportion of Medicaid FFS children with any ER visits *reimbursed by Medicaid* that we find using 1995 claims data is compared to the proportion of all Medicaid children in California reporting ER use (whether or not it was reimbursed by Medicaid) reported in the 1997

National Survey of America's Families (NSAF). NSAF data indicates that 29.0 percent of children with public insurance had any ER visits in 1997; a comparable 30.1 percent of the children in the study sample had any ER visits in 1995 (Haley and Zuckerman 2000, Table 16; the study data available upon request).[1]

MULTIVARIATE ANALYSES OF ER USE

The lower number of ER visits and level of payments per month for the continuously covered children seems to suggest that continuous coverage would improve the quality of care for discontinuously covered children. Drawing this conclusion from the descriptive data would, however, be misleading if the differences in service use and payment between the discontinuously and continuously covered children reflect systematic differences in the demographic characteristics, reasons for Medicaid entitlement, and health status of the two groups of children, rather than the effect of continuity of coverage. As shown in Appendix Table C.2, the two groups of children differ along important dimensions. For example, more continuously covered than discontinuously covered children are eligible for Medicaid through Aid to Families with Dependent Children (AFDC) (89 versus 50 percent). Discontinuously covered children are, instead, more likely to be eligible through Medically Needy/Disabled categories than the continuously covered children (27 versus 6 percent). Similarly, the two groups of children differ substantially in terms of their mean total Medicaid payments per enrollee month, a measure of health status. Monthly payments for all health care for continuously and discontinuously covered children were $54 and $62, respectively, suggesting that the children with discontinuous coverage may have health care needs that are more acute. Therefore, the means are adjusted to control for such differences between the two groups, using multivariate regression techniques. As described in Chapter II, what ER use by discontinuously covered children would be if they had continuous coverage is based on the ER use of continuously covered children with similar observed characteristics.

Discontinuous coverage appears to have no statistically significant effect on ER use per month after controlling for observed characteristics.[2] Table VI.2 presents adjusted mean values of ER use for discontinuously covered children with and without 12-month

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[1]According to NSAF data, prevalence of ER use among Medicaid enrollees in California in 1997 (during periods on and off Medicaid) is 29 percent, substantially higher than it is for privately insured and uninsured children (19.5 and 18.9 percent, respectively). Prevalence of ER use by children in California is slightly lower than by children nationwide in 1997. Nationwide, 21.9 percent of privately insured children, 39.0 percent of publicly insured children, and 23.0 percent of uninsured children reported any ER visits (Haley and Zuckerman 2000, Table 16).

[2] These include demographic characteristics; reason for Medicaid eligibility in 1995; Medicaid payments, length of coverage, the presence of a gap, and ER use in 1994.

VI. Impacts on Emergency Room Use and Payments

continuous coverage.[3] With or without continuous coverage, the discontinuously covered children have an average of 80 ER visits per thousand months of enrollment for all diagnoses. Similarly, no statistically significant differences in ENT-related ER use—which remains at about 17 visits per 1,000 enrollee months—is observed, regardless of continuity of coverage.

Any differences in unadjusted means of ER use between the discontinuously and continuously covered children appear to be due to differences in observable characteristics of the two groups—such as age, race, and enrollment history, rather than discontinuous coverage itself.

Table VI.2: Estimated Effects of 12-Month Continuous Coverage on ER Use for California		
Adjusted Number of ER Visits Per 1,000 Enrollee Months	**Without Policy**	**With Policy**
All Diagnoses	81	79 n.s.
ENT-Related Diagnoses	18	17 n.s.

SOURCE: Mathematica Policy Research, Inc. analysis of California SMRF data from calendar years 1994 and 1995.

NOTES: All predicted means are evaluated at the sample mean. The analysis of ER visits for all diagnoses includes 245,956 continuously covered and 33,923 discontinuously covered children. The analysis of ENT-related ER visits uses a subsample of 26,970 continuously covered and 2,649 discontinuously covered children with an ENT-related ER visit in 1995.

n.s. = not statistically significant (p < 0.10).

MULTIVARIATE ANALYSES OF ER PAYMENTS

Having shown that 12-month continuous coverage is unlikely to affect the number of ER visits per enrollee month, the analysis now turns to an examination of how the policy might affect the intensity of medical need of children treated at the ER. The analysis uses two measures of intensity: payments per enrollee month and per visit in 1995. While the number of ER visits does not change with continuous coverage, the policy could still improve quality of care by reducing the intensity of medical need for children who use ER services. If this were the case, the payments per ER visit should remain the same or should decrease, and payments per enrollee month should fall. Whether continuous coverage would reduce ER payments is tested by a regression model that predicts ER payments of discontinuously covered children with and without continuous coverage, controlling for observed characteristics (described in Chapter II). Like the model used to estimate ER use, the payment model predicts ER payments for discontinuously covered children who obtain

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[3] These estimates are evaluated using the full sample's means. Note that the first two analyses in this chapter assume that all discontinuously covered children obtain 12 months of continuous coverage, which overstates the actual coverage the policy would have provided the children in 1995.

continuous coverage based on the payments for continuously covered children with similar observed characteristics.

A statistically significant relationship is found between discontinuous coverage and ER payments per month and per visit. As shown in Table VI.3, providing discontinuously covered children with 12-month continuous coverage would reduce the cost of ER services per enrollee month for all care and for ENT-related care. Continuous coverage would reduce ER payments per month for the discontinuously enrolled children by 28 percent for all diagnoses, from $20 to $14, and by 33 percent for ENT-related care, from $10 to $7. On the other hand, continuous coverage is expected to increase payments per ER visit for all diagnoses and ENT-related diagnoses by a minor amount, from $68 to $69 for all diagnoses, and from $46 to $47 for ENT-related care (under 2 percent).

Table VI.3: Estimated Effects of 12-Month Continuous Coverage on ER Payments for California

ER Payments for Children	Without Policy	With Policy
All Diagnoses		
Per Month Enrolled	$20.07	$14.42***
Per Visit	$68.13	$69.33**
ENT-Related Diagnoses		
Per Month Enrolled	$9.94	$6.63***
Per Visit	$46.47	$47.35**

SOURCE: Mathematica Policy Research, Inc. analysis of California SMRF data from calendar years 1994 and 1995.

NOTES All predicted means are evaluated at the sample mean. ER payments cover outpatient care only. The analysis of ER payments for all diagnoses includes 84,242 continuously covered and 8,756 discontinuously covered children with one or more ER visit in 1995. The analysis of payments for ENT-related ER visits uses a sample of 26,969 continuously covered and 2,646 discontinuously covered children with an ENT-related ER visit in 1995.

*** = significant at the 0.001 level;
 ** = significant at 0.05 level.

SENSITIVITY TEST

While these results suggest that the policy would improve the quality of care, as measured by significantly reduced ER payments per enrollee month, there may be important unobservable differences between the discontinuously and continuously covered children that limit the validity of these results. An additional problem arises because data quality problems appear to be more prevalent among the discontinuously covered children than the continuously covered children. Specifically, sometimes the administrative claims files show that Medicaid payments for ER services are made for the discontinuously covered children

in periods when they are not reported to be enrolled in Medicaid.[4]   Hence providing additional months of coverage would reduce the payments *per enrollee month*, even if there were no change in the overall payments during the year.

As a sensitivity test, the effect of reducing the average gap in enrollment from its actual length to two months is estimated. As described in Chapter II, ER use and payments in the first three months after the gap ends is compared with the existing gap, and with the shortened gap. As shown in Table VI.4, this sensitivity test is consistent with the other analyses in finding no effect of continuous coverage on service use. In contrast with the other analyses, which found a large effect on payments per month, this analysis finds no statistically significant effect of reducing the length of gap to two months on the payment per month.[5]

This analysis suggests that continuous coverage will not alter ER use and payments. The results of this analysis are stronger than the results of the other two. As stated before, fewer unobserved differences across children who have different lengths of gaps in enrollment but are all discontinuously covered than between the continuously and discontinuously covered children are expected.

Table VI.4: Estimated Effects of Reducing the Gap in Coverage on ER Use and Payments During the First Three Months After a Gap – California

	Actual Gap	**2-Month Gap**
ER Visits per 1,000 Enrollee Months	71 visits	79 visits n.s.
ER Payment per Month Enrolled	$33.11	$32.51 n.s.
ER Payment per Visit	$20.71	$20.91 n.s.

SOURCE: Mathematica Policy Research, Inc. analysis of California SMRF data from calendar years 1994 and 1995.

NOTES   All predicted means are evaluated at the sample mean. ER payments cover outpatient care only. The analysis of ER use after a gap uses the subsample of 33,923 discontinuously covered children. The analysis of ER payments after a gap in coverage uses the 4,898 discontinuously covered children with an ER visit during the first three months after the gap in coverage ends.

n.s. = not significant at the 0.1 level.

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[4] California Medicaid officials have indicated that sometimes their automated eligibility records are not updated for retroactive coverage, even though claims during the retroactive period have been paid.

[5] The average gap for all discontinuously covered children is 6.3 months, so the estimates of ER use reduce this gap to 2.0 months. The average gap for discontinuously covered children *with any ER visits* is 5.9 months, so the payment estimates reduce the gap length from 5.9 to 2 months. For the estimates of number of visits and payments, we also test the effect of reducing the length of the gap in coverage on visits per month, payment per visit, and payment per enrollee month using a dummy specification and find no effect. These results are available upon request.

CONCLUSIONS

This analysis was unable to find a convincing link between discontinuous coverage and quality of care, as measured by ER use and payment per month, in this preliminary analysis. The findings suggest that continuous coverage may increase the payment per ER visit slightly, by about two percent. The evidence is conflicting, however, on whether continuous coverage improves quality of care by reducing the ER payment per enrollee month, which serves as a measure of intensity of medical need. In two analyses that use the experience of continuously covered children to represent what would happen to discontinuously covered children if they were continuously covered, the policy decreases the ER payment per enrollee month by an amount that is significant, both statistically and in terms of policy. The policy decreases the payment per month for ER visits for all diagnoses 28 percent, from $20 to $14, and ENT-related ER visits 33 percent, from $10 to $7. However, these analyses may not accurately predict ER use under the policy because the continuously covered children may not be a good proxy for the discontinuously covered children. Using an alternative, more robust approach that examines whether shortening gaps in enrollment lowers payments for ER services after the gap, finds no such effect. Based on the analyses conducted here, evidence that providing continuous coverage alone will alter quality of care, measured by ER use and payments, for children who were previously discontinuously covered is not found.

While the analysis does not find evidence to support the hypothesis that providing continuous coverage alone will improve the quality of care, it is possible that continuous coverage actually would improve the quality of care without this analysis having detected such. First, the analytical methods may not adequately control for unobservable differences between the discontinuously and continuously covered children that affect ER use. Second, ER use may not be a good measure of quality of care. Continuous coverage might increase the use of appropriate ambulatory care—hence, quality of care—without altering ER use and payments. For example, ER use might reflect unavoidable medical events and care-seeking habits, rather than inappropriate ambulatory care. In addition, reimbursement rules may cause Medicaid payments for ER services not to accurately reflect the true costs of providing care to the child, or the child's health status.

Finally, estimates of payments per enrollee month may be systematically overstated for the discontinuously covered children due to inconsistencies between the person-summary file and the claims files. Specifically, Medicaid sometimes pays for services in months when children are reportedly not covered It is unclear whether the claims were erroneously paid, or whether the person-summary file understates enrollment; therefore, corrections to the data were not made. This data problem does not affect the payment per enrollee month for the 12-month continuously covered children, but is likely to overstate the payment per enrollee month for the discontinuously covered children. As a result, the apparent reductions in payments from moving children from discontinuous to continuous coverage predicted by the first two analyses may be an artifact of the data.

One important factor that could not be examined in this study is how the provision of continuous coverage might affect continuity of care with a provider and access to care. It is

possible that providing continuous coverage is a prerequisite for continuity of care and access to care, but that coverage alone may not increase continuity and access, and hence quality of care. Instead, a combination of continuous coverage and interventions to promote a continuous relationship with a provider and appropriate use of the ER may be most effective at improving the quality of care. Previous research demonstrated that interventions promoting the use of a primary care provider among children covered by Medicaid can decrease their ER visits (Grossman et al. 1998; and Hurley, Freund, and Taylor 1991). Further research on the many determinants of ER utilization patterns and evaluations of interventions geared at reducing ER utilization is warranted.

CHAPTER VII

DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

S imulated results show that a policy of 12-month continuous coverage effectively reduces gaps in coverage and the disparities in the risk of discontinuous coverage, but this policy does not completely eliminate the problem of discontinuous coverage. The benefits of the policy come at some cost to Medicaid programs. Total annual Medicaid payments will increase, but payments per enrollee month will either not change or will fall by as much as three percent. Monthly payments drop slightly because the additional months of coverage are less costly than the existing months—the months Medicaid programs already cover without this type of policy. Continuous coverage is expected to simplify administrative processes associated with eligibility and enrollment, which in turn should generate savings in administrative costs. However, the estimates indicate that this result occurs only in states that redetermine eligibility more than once a year. In states that previously implemented an *implicit* form of continuous coverage and redetermine eligibility only once every 12 months, this policy will increase the number of redeterminations and lead to a modest increase in administrative costs of Medicaid programs. More children are covered for longer periods, and more are likely to have a redetermination. In particular, discontinuously covered children are more likely to have a redetermination as a result of continuous coverage because, without this policy, their enrollment periods frequently end before their eligibility can be redetermined. In addition, continuous coverage also is expected to improve access to preventive and primary care services. If it does, the improvement should be reflected in measures of the quality of care such as emergency room (ER) use and payments. However, the examination of ER service use and costs resulted in inconclusive findings.

DISCUSSION

The primary impetus for continuous coverage is to improve children's access to a medical home and to promote stable, continuous care. A policy of continuous coverage promotes stable insurance coverage by reducing the prevalence of discontinuous coverage. A policy of continuous coverage is also consistent with the goals of Healthy People 2010 and

may be an important component of a state's efforts to eliminate health disparities across different segments of the population (DHHS 2000). The findings demonstrate that some children are more likely to experience discontinuous coverage relative to other children. These children—older adolescents and Hispanics—are known to experience difficulties accessing the health care system (Brown et al. 2000; Newacheck et al. 1999; and Stoddard, St. Peter, and Newacheck 1994). In addition, these groups are more likely to have a greater need for health care. According to data compiled by the National Center for Health Statistics, the fraction of children with any activity limitation increases with age and substance and alcohol abuse also increase with age. In addition, Hisptanics are more likely than white, non-Hipsanic individuals to report their health as fair or poor, be overweight or obsess, have limiations in activities of daily living, and contract acquired immunodeficiency syndrome (AIDS) (NCHS 2000).[1] Continuous coverage eliminates some of these disparities and enhances the access of these vulnerable populations. Having health insurance and a regular primary care provider are measures used by Healthy People 2010 to track improvement in access to care. Continuous coverage can be a direct policy step states take to demonstrate measurable improvements in these measures.

However, even under a policy of continuous coverage, between two and four percent of children will continue to experience temporary coverage gaps. Children will continue to lose coverage either because of temporary fluctuations in income and family structure that occur during redetermination periods, or when families are unable to comply with eligibility and enrollment processes. This result suggests that to go beyond what continuous coverage can do to eliminate coverage gaps, states will have to take additional measures that directly address temporary fluctuations and the complexity of eligibility and enrollment processes. The problem of fluctuating income may be addressed through policies that seek to base eligibility on average income over a given period of time—for example, six months to a year. Policies could also be developed that would require eligibility staff to assess whether the increase in income or change in family structure is likely to be temporary, and if so, whether eligibility would be continued under certain circumstances.

As a result of welfare reform, states have already taken other steps to simplify eligibility and enrollment processes so as to ensure that all eligible children are enrolled in Medicaid and SCHIP programs. These efforts provide important lessons on effective strategies for reducing the complexity of establishing eligibility and maintaining coverage. To date, these measures have included:

- Simplified and streamlined applications and other forms, including Web-based applications

- Mail-in and online applications

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[1] The activities of daily living include eating, bathing, dressing, and getting around inside the home.

VII. Discussion and Directions for Future Research

- Preprinted redetermination forms that only require families to report changes that have occurred since the establishment of eligibility or the last redetermination

- Self-declaration of income and resources

- Assistance and educational efforts by community-based organizations

- Enrollment facilitators

- Enhanced follow-up efforts when families do not respond

In order to realize the full benefits of continuous coverage, publicly financed health insurance programs, whenever possible, will need to employ consistent eligibility policies between parents and children; they will also need to coordinate their policies with other programs that provide support services to families and children. Because children covered through welfare programs typically are part of a family receiving coverage, continuous coverage is likely to have little impact if other family members must redetermine their eligibility more frequently than every 12 months, as well as report income and family structure changes when they occur. From both the family's perspective and that of the Medicaid program, the number and frequency of redeterminations will not change if parents must comply with redetermination policies that are at variance with 12 months of continuous coverage for children. Coherent, consistent policies for the entire family will be key to the success of continuous coverage among children whose parents are also covered by the program.

In addition to coordinating eligibility and enrollment policies across different family members, Medicaid and SCHIP programs should explore how their eligibility and enrollment policies correspond with those of other social support programs. It is likely that different eligibility and enrollment policies across different programs can lead to confusion among families, increasing the risk that children experience discontinuous coverage. As the examples reported by Schott, Dean, and Guyer (2001) demonstrate, coordination across social support programs—such as Medicaid and food stamps—can be extremely beneficial for families and insure children's enrollment in Medicaid and SCHIP.

States could also further enhance the benefits of continuous coverage by improving provider participation. Any effort to improve provider participation rates in Medicaid and SCHIP programs can be expected to improve the likelihood that children will access their provider of choice, regardless of the type of insurance coverage they have. In addition, efforts that promote close patient-provider relationships, such as requiring families to choose a primary care provider, should promote attachment to a medical home—a key element in care that is both continuous and anticipatory.

DIRECTIONS FOR FUTURE RESEARCH

This study improves the general understanding of how continuous coverage affects publicly financed insurance programs and children's access to care, but a full accounting of all costs and benefits associated with this policy has yet to be made. The findings are consistent with research that shows health insurance coverage improves access to preventive care services. Policies—such as continuous coverage or simplified redetermination processes—that improve access to Medicaid and SCHIP coverage will increase the use of services and thereby increase health care payments. However, the long-term impacts of improved access to a medical home and continuous care is likely to improve children's health status, thereby reducing health care costs. Only further research will show the extent to which this policy over the long term reduces health care costs and improves the health status of children.

This study faced several data limitations that affected the scope of work. Some of these limitations could be addressed through the use of more recent data. Slowly, over time, more states have implemented continuous coverage policies. Staggered adoption of this policy across states and over time offers a natural experiment. To measure the results of this natural experiment, the change over time in enrollment patterns, Medicaid payments, and ER use in a state that adopted continuous coverage could be compared with similar changes in a state that has not adopted the policy. This approach requires more recent SMRF data which are now becoming available.

More recent years of data for some states would at least allow for an analysis based on a pre- and post-policy design. A study of enrollment, payments, and quality of care before and after implementation of the policy would, at a minimum, confirm or refute the simulated results presented in this report.

Any analysis that relies on more recent data will face the challenge of measuring outcomes during a time when enrollment in Medicaid programs was unstable and undergoing significant changes as a result of welfare reform. However, it is important to understand whether continuous coverage has been able to mitigate inappropriate disenrollments that result when welfare benefits end. Follow-on studies that analyze the impacts of continuous coverage during the initial period of welfare reform, and after Medicaid programs have adjusted to new welfare policies, would facilitate this understanding.

Another limitation of the data was the lack of information regarding children's health care during gaps in coverage. When children were observed to disenroll, the type of coverage they had *while* disenrolled or the types of services that they used during this period could not be observed. This is a serious limitation in terms of understanding the nature of coverage gaps and the implications of care once eligibility has been reestablished.

In order to track children and their use of services regardless of the type of coverage, data other than administrative data are required. Possible data sources that are based on representative national samples include the National Health Interview Survey (NHIS),

Medical Expenditure Panel Survey (MEPS), Survey of Income and Program Participation (SIPP), and the National Longitudinal Survey of Youth (NLSY). All four data sources have their strengths and weaknesses. While these data are known to underestimate Medicaid participation, all have been collecting data over time and offer the possibility of longitudinal analyses. The first three surveys (NHIS, MEPS, and SIPP) are designed to provide national estimates of health insurance coverage for children of all ages, while the NLSY collects data on a cohort of women—age 14 to 21 in 1979—and their children. In addition to health insurance information, NHIS, MEPS, and NLSY collect information on use of medical services among children. The MEPS provides the richest information because it collects health insurance information and service utilization four times a year. As a result, these data support more in-depth analyses of changes in health insurance coverage and resulting changes in service use. In addition, the MEPS is the only survey of the four that collects information on medical expenditures. Because MEPS collects information for adults and children, the sample of children has been relatively small. There are plans to increase the number of children sampled; but if these plans are implemented, the data are not expected to be available for several years.

This study represents a first step in understanding the impacts of this policy on the administrative processes and costs associated with eligibility and enrollment in these programs. Because administrative costs can be affected by how the policy is implemented and the extent to which children's eligibility is separate from other family members, further research is required to fully understand how Medicaid programs adapt administrative systems (including computer systems) and procedures when this type of simplification strategy is implemented. In addition, how programs coordinate eligibility and enrollment policies across child and adult populations and how processes are coordinated between social programs will play an important role in the extent to which continuous coverage reduces administrative costs. A full accounting would include these changes.

Regardless of which research avenues are pursued next, further research is required to understand more fully the implications of continuous coverage. The analysis provides important preliminary findings which can be refined in future analyses. While a policy of continuous coverage can reduce the prevalence of continuous coverage, this analysis is only the first step in understanding the implications of continuous coverage for costs and the quality of care over the long term. It is these implications that require further investigation and analysis.

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APPENDIX A

METHODOLOGY

APPENDIX A

METHODOLOGY

T his technical appendix describes our approach to simulating the impacts of 12-month continuous coverage. The data available for this type of analysis, as well as the resource constraints, dictated the use of simulation methods, rather than a design based on experimental or comparison groups. The following sections discuss the study states, data, and samples used. Also discussed are the approaches used to simulate the impact of this policy on the prevalence of discontinuous coverage and children's enrollment, Medicaid payments, administrative costs, and emergency room (ER) use and payments.

THE STUDY STATES

To identify the appropriate states for the study, we looked at whether the state was part of the State Medicaid Research Files (SMRF) system in 1994 and 1995; the size of the Medicaid population; the degree of managed care penetration; and whether or not the state implemented 12-month continuous coverage in Medicaid or the State Children's Health Insurance Program (SCHIP). Implementation of a 12-month continuous coverage policy was especially important for the qualitative component of our study.

Based on these criteria, along with a desire for geographic diversity, we selected California, Michigan, Missouri, and New Jersey. The number of children enrolled in 1995 in each study state, as well as information about key eligibility policies of each state's Medicaid and SCHIP programs, are presented in Table A.1. None of the Medicaid programs has formally implemented a policy of 12-month continuous coverage.[1] However, California, Michigan, and Missouri use an *implicit* form of continuous coverage. Programs in these states redetermine eligibility once a year, between redeterminations, families are responsible

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[1] The Department of Health and Human Services recently approved California's application to provide 12 months of continuous coverage for children enrolled in California's Medicaid program, Medi-Cal.

for reporting changes in income and family structure. Michigan and Missouri do not use any regularly scheduled interim reporting procedure for reporting changes, but California requires families to submit quarterly reports.[2] California and Michigan implemented 12-month continuous coverage at the inception of their separate SCHIP programs; the separate SCHIP program in New Jersey uses an implicit form of the policy.[3]

Table A.1: Number of Children Enrolled in Medicaid (1995) and Key Eligibility Policies for Medicaid and Separate SCHIP Programs, by Study State

	California	Michigan	Missouri	New Jersey
Number of Children Enrolled in Medicaid in 1995	2,198,066	543,287	347,712	356,618
Medicaid				
Frequency of Redeterminations	Annually	Annually	Annually	6 months
Quarterly Status Reports	Yes	No	No	No
Continuous Coverage	No	No	No	No
Separate SCHIP				
Frequency of Redeterminations	Annually	Annually	NA	Annually
Continuous Coverage	Yes	Yes	NA	No

Source: 1995 data from Health Care Financing Administration, HCFA-2082, "Medicaid Eligibles by Basis of Eligibility and by Region and State: Fiscal Year 1995."

NOTES: Missouri's SCHIP program is a Medicaid expansion. The other three states have also implemented a Medicaid expansion through SCHIP. Medicaid eligibility policies apply to these programs.

SCHIP = State Children's Health Insurance Program
NA = Not applicable

THE DATA

Medicaid data from the State Medicaid Research Files (SMRF) are the basis for the analysis of 12-month continuous coverage. The data are from calendar years 1994 and 1995. At the beginning of this study, these were the most recent data available in a uniform, research format. Currently, only 1992 to 1995 SMRF data are available, and these data are available for only 33 states.

SMRF are uniform research files created from the Medicaid Statistical Information System (MSIS). For each state in SMRF, the SMRF system consists of four types of yearly claims files (inpatient, drug, long-term care, and other services) and a yearly person-summary file. The yearly person-summary file was the source file for the analysis of enrollment and Medicaid payments. Data from this file were also used in the analysis of administrative costs. Claims from the other services files were used in the analysis of ER use and

[2] Quarterly reporting requirements ended on January 1, 2001.

[3] All four states also implemented a Medicaid expansion through SCHIP and Medicaid eligibility policies presented here apply to these expansion programs.

Appendix A: Methodology

payments, where all such claims are recorded. To determine whether an ER visit was followed by an inpatient stay, we matched service dates for ER visits to admission dates in the inpatient file.

The SMRF data have several desirable features: files are organized by calendar year and date of service; claims are adjusted to reflect final bills, including a single record for a hospital stay; a person-summary file contains monthly eligibility information in a single record, together with each enrollee's total Medicaid payments for the year; analytic variables, such as type of service indicators and eligibility categories, have already been created; and enhanced editing and verification procedures are performed to identify and document problems and to ascertain the validity of data for particular applications.

Alternative data sources considered were files from the Medicaid Statistical Information System (MSIS). SMRF data are created from MSIS data. MSIS files are desirable because they are available for years as recent as 1999. However, a substantial amount of effort is required to convert MSIS files into analytical research files. States submit MSIS files on a quarterly basis. In order to determine enrollment histories, files from several quarters must be combined and person-level records must be developed. In addition, these files are organized by payment date and they include intermediate bills. To obtain an analytical file based on final bills, claims must be reorganized by service date, and initial and interim bills must be combined into one record that represents a final bill. Because of lags in reporting and the posting of claims for adjustments to earlier bills, MSIS files from the next year must be obtained and processed in order to capture all bills and adjustments. For example, if we had the resources to analyze the 1999 MSIS files, we would have had to process all 1999 files, as well as all 2000 files, to capture retroactive eligibility cases and adjustment claims.

Although HCFA performs data quality checks on SMRF and MSIS data, it is the states that ultimately are responsible for data quality and data quality varies from state to state. In the study states, we identified three problems that required correction before the data could be analyzed.

1) In the California data, identifying children enrolled in managed care and the months of managed care coverage was challenging. Managed care enrollment for each month of the year is reported in the person-summary file. However, in California, this information is not recorded, even though California offered managed care plans in their Medicaid program during the study years 1994 and 1995. Determining whether the child had a premium payment during the year was not an optional proxy measure of managed care enrollment, because almost all Medicaid enrollees have a premium payment. Dental benefits are available through a separate-capitated plan, the premium payments for these plans are included in the SMRF data. We had to pull all the claims for premium payments from the other services file. Using provider identification numbers obtained from the state, we eliminated all premium payments for dental benefits. The remaining premium payment

claims were used to determine which children were enrolled in managed care. The service dates of these claims were used to determine which months these children were covered by a managed care plan.

2) Also in California, we noticed a marked decline, beginning in June 1995, in the number of claims for services. The number of claims for June through December 1995 were approximately half that of the January through May 1995 period. Upon inspection, we found that, beginning in June 1995, premium payments for the capitated dental payments were no longer reported in the file. For these months, we imputed these capitated payments based on the payments in the January through May period.

3) The 1994 Michigan data showed a problem with the mapping of state-specific eligibility codes to the SMRF uniform eligibility codes, codes that are important to the analyses. As a result of this mapping problem, some children were not mapped to appropriate SMRF eligibility codes, while some adults were mapped to a code for children. These problems were corrected by applying the mapping procedures used in the 1995 data to the 1994 data.

Although the analysis uses two years of data, we report only results for the second year, calendar year 1995; the data from 1994 are used as baseline information. We assume that the policy was implemented some time in 1993, so that the enrollment patterns seen in 1995 reflect the first period after implementation of the policy, rather than the start-up phase. For the analysis of Medicaid payments, data from 1994 are used as a baseline control for previous enrollment and payment patterns.

STUDY SAMPLES

The analyses included only children eligible for 12-month continuous coverage. The policy regulations specifically state that only children through age 18 are eligible for continuous coverage. The study samples included all children eligible for continuous coverage and under 19 years of age as of December 31, 1994. This age cut-off allows the inclusion of a group of children who "age out" of continuous coverage during 1995.

When creating estimates for the California program we used a 20 percent sample of children. This sample was based on a random sample of Medicaid identification numbers for all children enrolled at least one month during the 1994 and 1995 calendar years. We used a sample rather than all children because during the 1994 and 1995 period the California Medicaid program served more than three million children. The Lewin Group did an analysis of continuous coverage based on a five percent sample of children from the Medicaid program in California (The Lewin Group 1999). The estimates presented for California are based on an extrapolation from the 20 percent sample.

The analyses exclude certain groups of children. Regulations stipulate that children covered through medically needy provisions are not eligible for continuous coverage. In addition, we assumed that other types of children—such as those eligible for coverage through the Supplemental Security Insurance (SSI) program; special refugee provisions; only eligible for prenatal care; or covered only through state-funded programs—would not be eligible for 12-monthd continuous coverage. Whenever the state-specific eligibility codes allowed the identification of these groups, we excluded them from the analysis.[4]

Children were excluded from the analysis if they were *only* eligible through one of the excluded groups—such as medically needy, SSI, special refugees, or undocumented aliens. It is relatively common for Medicaid recipients to change eligibility groups during a calendar year. For example, some children may initially be covered through welfare provisions, but later in the year change groups and obtain coverage through other categories such as medically needy or SSI when welfare benefits are terminated and eligibility under another category is established. As a result, the study samples include children who spend part of their enrollment periods covered through one of the excluded groups. These children are included, because they had at least one month of coverage through welfare, poverty, or other provisions assumed to be eligible for continuous coverage.

After applying these restrictions, we found that 74 percent of children in California would have been eligible for 12 months of continuous coverage in 1995, compared to 89 percent in Michigan, 98 percent in Missouri, and 90 percent in New Jersey. The relatively large number of children excluded in California results from the relatively large number of children covered through medically needy-related provisions and the detailed state-specific codes in California, which allow the identification of special subgroups such as refugees and those with limited benefits. Conversely, Missouri does not have a medically need program, which partially explains why so few children from that state were excluded from the analysis. Tables of demographic characteristics of the children in the study are presented in Appendix B.

To determine whether discontinuous coverage was more or less prevalent among children eligible for continuous coverage relative to other children, we compared the rate of discontinuous coverage among all enrollees ever enrolled during 1995 to that of children eligible for continuous coverage. In California, the rate of discontinuous coverage among all children is approximately one percentage point higher compared with the group of children eligible for continuous coverage (see Table A.2). In the other three states, eligible children are slightly more likely to have experienced discontinuous coverage compared with all enrolled children, but the difference in the three states is less than one percentage point. In all states except California, eligible children had the same average length of enrollment in

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[4] The study of continuous coverage by The Lewin Group (1999) assumed that children in the medically needy program would be eligible for continuous coverage because their income would be low enough to qualify. This study also assumed fewer other exclusions; as a result, their study only excluded 0.5 percent of children in the Medicaid program.

1995, compared with all children ever enrolled during the year (data not presented). In California, eligible children had 0.7 more months of coverage, compared with all children ever enrolled—10.2 months compared with 9.5 months.

Table A.2: Percent Discontinuously Covered in 1995				
	All Children Ever Enrolled in Medicaid in 1995		All Children Ever Enrolled and Eligible for Continuous Coverage in 1995	
State	Number	Percent Discontinuously Covered	Number	Percent Discontinuously Covered
California	3,644,825	8.6	2,712,590	7.5
Michigan	794,378	8.5	710,879	8.8
Missouri	462,231	5.6	451,175	5.7
New Jersey	470,481	5.3	423,092	5.6

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

Notes: Children are defined as discontinuously covered if they have a gap in coverage that is at least two months long. The California data are based on a 20 percent sample of children.

Our ability to identify the children states are likely to exclude from 12-month continuous coverage depends on the quality of state-specific codes. To develop uniform categories for the SMRF data, maps have been developed that assign state-specific eligibility codes to the SMRF uniform codes. Some states, such as California, have numerous, detailed state-specific eligibility codes. In these states, the mapping of children into the uniform SMRF codes for the medically needy program is relatively accurate. In addition, distinguishing children in various small groups that are eligible, including very small groups such as refugees, is relatively easy.

Other states, such as Michigan and Missouri, state-specific eligibility codes are not as detailed. In these states it is more difficult to identify children in other types of eligibility groups likely to be ineligible for continuous coverage. It is likely that we did not identify all ineligible children and that an unknown percentage of these children are included in the analyses. Without more information about which ineligible children could not be identified, and what their enrollment patterns are, it is difficult to know how this problem affects the analyses.

MEDICAID ENROLLMENT

The first step of our analysis determined how a policy of 12-month continuous coverage affects a child's enrollment history. Our approach to this component is similar to that used

by The Lewin Group and their analysis of continuous coverage in Medi-Cal, the Medicaid program in California (The Lewin Group 1999).

The analysis of Medicaid enrollment uses each child's actual enrollment history from 1994 and 1995, and simulates what enrollment would have been in 1995 if the state had a policy of 12-month continuous coverage in 1994 and 1995. Only children through age 18 are eligible for 12 months of continuous coverage. Beginning with each child's first month of observed enrollment in 1994 or 1995, the simulation provides the child with 12 months of coverage. At the end of the 12 months, the child's actual enrollment history is checked. If the child actually is enrolled in the month after the completion of the simulated enrollment period, the simulation assigns another 12 months of coverage. If the child is not enrolled in that month, the simulation searches for the next month of observed enrollment and starts another 12-month enrollment period. Table A.3 presents the actual enrollment history for three children (A) and what their enrollment would have been under a policy of 12-month continuous coverage (S). The first example presents a child with a gap in coverage and demonstrates how this policy eliminates the gap. The second example demonstrates that, for some children, this policy will extend coverage into the next calendar year. The last example shows a child with consecutive enrollment periods.

TABLE IA.3: Three Examples of Actual Enrollment (A) and Simulated Enrollment (S) Under a Policy of 12-Month Continuous Coverage (S) by Month Between January 1994 and December 1995

	Months in 1994												Months in 1995											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Example One:																								
Actual enrollment:																								
8 months in 1994 and 11 months in 1995		A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A
Simulated Enrollment:																								
11 months in 1994 and 12 months in 1995		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Example Two:																								
Actual enrollment:																								
8 months in 1994					A	A	A	A	A	A	A	A												
Simulated Enrollment:																								
8 months in 1994 and 4 months in 1995					S	S	S	S	S	S	S	S	S	S	S	S								
Example Three:																								
Actual enrollment:																								
9 months in 1994 and 7 months in 1995				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
Simulated Enrollment:																								
9 months in 1994 and 12 months in 1995				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

The simulation of enrollment faced two important methodological challenges: (1) when to start enrollment when the first month of observed enrollment was January 1994, and (2) how to handle children who switch eligibility groups and are ineligible for continuous coverage during one part of the year but are eligible for continuous coverage during another part of the year. We addressed the first challenge—how to determine the start of enrollment when the first month of observed enrollment was January 1994—by assigning a month in 1993. The assignment of months was designed to reflect the distribution of months in which enrollment began among children enrolled during January 1995. Whatever month was assigned, that was the month in which 12-month continuous coverage would begin. The only exception was the few infants born in January 1994.

The second challenge—how to handle children who are ineligible for continuous coverage part of the year but are eligible during another part of the year—was addressed by starting 12-month continuous coverage during the first month the child was *eligible* for continuous coverage, and not checking the child's eligibility again until month 12 of the enrollment period. In effect, the simulation ignores changes in eligibility groups until the end of the 12 months of continuous coverage. If, during the initial months of observed enrollment, the child was in a group not eligible for continuous coverage—such as the medically needy program—the simulation ignores those months and searches for the first month the child is enrolled in a program eligible for continuous coverage. The simulation starts 12 months of continuous coverage during the first month the child is eligible for the policy. The simulation does not check the child's actual eligibility group until the end of the continuous coverage period. If, at that time, the child is in a group eligible for continuous coverage, the simulation provides another 12 months of coverage; otherwise, it searches for the next month the child is enrolled and eligible for continuous coverage. This methodology reflects how continuous coverage is likely to work in practice. Under this policy, until the child's eligibility is redetermined, Medicaid programs will likely not know about changes that would cause the child's eligibility group to change.

MEDICAID PAYMENTS

Our analysis of Medicaid payments relied on the annual payments reported in the person-summary file of the SMRF data. As a first step, children in managed care had to be identified. Because their payments do not reflect direct service use, their payments were estimated separately from the payments for children in fee-for-service. For children who spent part of the year in fee-for-service and the other part in managed care, we separated fee-for-service payments from managed care payments by subtracting premium payments from total Medicaid payments for the year.

The next step was to estimate Medicaid payments in 1995, when a policy of 12-month continuous coverage was not in place. These payments are referred to in the report as *"Estimated Payments."* This component of the analysis relied only on children in the fee-for-service system and their fee-for-service payments.

To estimate Medicaid payments in 1995, children in fee-for-service were divided into six groups according to their length of actual enrollment in 1995 (1-3 months, 4-5 months, 6-7 months, 8-9 months, 10-11 months, and 12 months). Using the same regression model, a separate Medicaid payment equation was estimated for each group of children, resulting in six estimated payment equations. Each estimated equation was based on the two-part model of health care expenditures developed by the Rand Insurance Experiment (Manning, et al, 1988). The first part uses the logistic regression model to estimate the probability that the child had any payments during 1995. The second part used ordinary least squares to estimate the natural logarithm of monthly Medicaid payments among children with any payments during the year. The predictions from each part were combined to derive each child's estimated monthly Medicaid payment during 1995.[5] The monthly payment estimated was annualized based on the child's actual length of enrollment in 1995 (monthly payment multiplied by the actual number of months enrolled in 1995).

All the estimated equations controlled for demographic characteristics, primary eligibility group during 1995, and 1994 Medicaid enrollment histories, payments, and hospitalizations of the children in each group.

- Demographic characteristics included age, race/ethnicity, and gender. Age groups by race/ethnicity were included to improve the simulation's ability to capture race/ethnicity differences within age groups.

- The child's primary eligibility group was included, as well as whether the child was ever eligible in 1994 or 1995 through the Supplemental Security Income program (SSI).

- Enrollment history in 1994 was captured through flags for the length of enrollment during that year and whether the child had a gap in enrollment during 1994.

- A flag for any hospital admission in 1994 was included as a control for health status.

- Because prior payments frequently are the best predictors of current payments, the equations contained a variety of controls for 1994 Medicaid fee-for-service payments. Besides total payments and the square of total payments, the simulation used several flags to indicate where the child's total payments fell on the overall distribution of 1994 payments (none, average, high, or very high). These flags were crossed with the flags indicating the length of enrollment in 1994. Splines, defined by length of enrollment in

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[5]The simulation followed the standard methodology of Duan (1983) to retransform the predictions from the logarithmic equation. A smearing estimate was used to adjust the predicted value from the logarithmic equation to account for the difference between the geometric mean of the logarithmic scale and the arithmetic mean that an ordinary least squares regression estimates.

1994 and level of 1994 payments, were used to improve the simulation's ability to predict payments in 1995.

These equations estimated only fee-for-service payments. Estimated payments for children in fee-for-service *only* were based on the above methodology. Payments for children in managed care were based on the children's actual premium payments and were not adjusted. The estimate of total 1995 payments for children who switched between fee-for-service and managed care was estimated as the sum of their estimated fee-for-service payments, which was based on the number of months they were enrolled in fee-for-service, and their actual managed care payments.[6]

After estimating total 1995 Medicaid payments for children enrolled during that year, the analysis next simulated payments under a policy of 12-month continuous coverage. In the report these estimates are called *"Simulated Payments."* To estimate simulated payments for children in fee-for-service we used the set of six equations estimated in the previous step. The equations used to develop the estimated payments for 1995. Each child in fee-for-service was re-assigned to one of the six equations based on the child's *simulated* length of enrollment in 1995, what the child's enrollment would have been had a policy of 12-month continuous coverage been in place at that time. For example, the child depicted in example 1 in Table A.3 would have *estimated payments* based on the group of children with 10 to 11 months of actual enrollment in 1995, but *simulated payments* would be based on the group of children observed to be enrolled for 12 months during 1995. The child in the second example of Table A.3 would have no estimated payments, but simulated payments would be based on the group of children observed to be enrolled for four to five months. The child in the third example would have estimated payments based on the group of children observed to be enrolled for six to seven months, but simulated payments would be based on the groups of children observed to be enrolled for 12 months.

The predictions produced were used for children *only* in fee-for-service in 1995. Simulated payments for a child *only* enrolled in managed care were based on the child's actual monthly capitated payments and the number of months the child would have been enrolled, had a policy of 12-month continuous coverage been in place in 1995.[7] These monthly capitated payments were annualized using the simulated months of enrollment.

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[6]Children in Primary Care Case Management (PCCM) plans were treated as if they were in fee-for-service. These programs typically pay for services on a fee-for-service basis and they pay a small monthly management fee to the child's primary care provider. In California, the PCCM programs in many counties capitate some services. After investigating different approaches for estimating the payments for children in this program, difficulties identifying the capitated payments and resource constraints caused us to abandon this effort. In addition, based on 1999 data from the Medicaid Statistical Information System (MSIS), California is no longer enrolling children in PCCM plans.

[7]The other services claims files include premium payments. For each child in managed care we used the average payment on premium payment claims to determine each child's average monthly capitated payment.

Payments for children who switched between fee-for-service and managed care were based on the child's actual monthly capitated payments and the number of months the child would have been enrolled, had a policy of 12-month continuous coverage been in place in 1995. Payments for children who switched between fee-for-service and managed care during the year were estimated by taking a weighted average of their estimated payments in fee-for-service and in managed care. The weights in this calculation represented the proportion of time in fee-for-service and managed care, respectively. Simulated payments were also weighted to reflect the proportion of time spent in managed care and the proportion of time in fee-for-service. For example, if a child was observed to spend one-quarter of the enrolled period in 1995 in managed care and three-quarters in fee-for-service, we assumed that one-quarter of his or her simulated months of enrollment would be in managed care and the other three-quarters would be fee-for-service.

ADMINISTRATIVE COSTS

Minimal data on administrative costs were available for this analysis. Typically, states do not track administrative costs at the level required for this research, and SMRF data do not include information that indicates when a child's eligibility was redetermined. We used a market-valuation approach to construct estimates of administrative savings. Using the actual and simulated enrollment histories of each child, we counted the number of disenrollments, reenrollments, and redeterminations. Telephone interviews with Medicaid and SCHIP eligibility staff in the four study states provided data on the amount of time required for administrative staff to complete these processes. The cost of staff time was valued over a range of hourly wage rates for government eligibility workers.

To determine administrative costs the analysis first counted the number of disenrollments, reenrollments, and redeterminations each child had. Counts of these events were constructed using both enrollment histories, the actual and simulated enrollment histories developed for the enrollment and payment analyses. A disenrollment was counted every time an enrollment period was followed by at least two months of ineligibility. A reenrollment was counted every time an enrollment period started after a break in coverage, as long as that break lasted at least two months. Reenrollments also included the first time we observed a child enroll.[8] A redetermination was counted after 12 consecutive months of enrollment in California, Michigan, and Missouri, and 6 consecutive months in New Jersey. These counts were first calculated using the actual enrollment of children in 1994 and 1995 and then recalculated using the simulated enrollment histories.

The data do not identify when redeterminations occur. To address this problem, we developed a methodology for surmising when a child's eligibility was likely to be redetermined. The programs in California, Michigan, and Missouri redetermine eligibility

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[8]State staff indicated that determining initial eligibility frequently requires about the same level of effort as re-establishing eligibility. In addition, the data did not indicate whether the first month of observed enrollment represents a new enrollee or a child re-enrolling after being disenrolled for an unobserved period of time.

every 12 months—an *implicit* form of continuous coverage. However, families are required to report changes in income and family structure whenever they occur during the 12-month period. New Jersey, on the other hand, redetermines eligibility every six months. For each child, we identified the first month of enrollment and began counting the months of coverage at that month. The sixth or twelfth month after the beginning of the enrollment period was designated a redetermination month, as long as the child was continuously enrolled up to that month. If the enrollment period ended prior to the sixth or twelfth month, then we searched for the first month of the next enrollment period and started the process over, until the count reached the sixth or twelfth month, which was counted as a redetermination month.

The construction of administrative costs assigned each disenrollment, reenrollment, and redetermination an average amount of time required for program staff to complete the processing of the event. The administrative costs were based on the total time required to complete these events, valued over a range of hourly wage rates. Based on interviews with program personnel, reenrollments and redeterminations typically require 30 to 45 minutes for program personnel to complete. However, complex cases can require an hour or more. A range of estimates for administrative cost savings were constructed by assuming three different amounts of time required to complete a reenrollment and redetermination (30 minutes, 45 minutes, and 60 minutes). We assumed the same amount of time for both types of events. In all cases, we assumed that a disenrollment requires 15 minutes to complete.

We valued the estimates of staff time over a range of hourly wage rates. These valuations were based on three different wage rates ($10.52, $12.06, and $14.83) that represent the 25th percentile, median, and 75th percentile hourly wage for government eligibility interviewers. We used 1999 hourly wage rates and deflate them to 1995 dollars using the Consumer Price Index (Bureau of Labor Statistics, 2001).

There are four important caveats to this component of the study. First, the counts of redeterminations are likely to contain inaccuracies. Information about the actual occurrence of redeterminations was not available in the administrative data files used for the analysis. As a result, we had to surmise when redeterminations actually occurred by starting with the first month of observed enrollment and counting the sixth or twelfth month as a redetermination month. In at least one state that redetermines eligibility yearly, we know that our methodology overestimates the number of redeterminations. In our telephone interviews with state personnel, it was noted that staff shortages force the Medicaid program to redetermine eligibility selectively, it is not possible to redetermine the eligibility of all children upon the 12-month anniversary of their enrollment into the program. As a result, the eligibility of some children had not been redetermined for two years or more. Staff believe that most families follow program policies and report changes in income and family structure when they occur. They also believe that a policy of 12-month continuous coverage would probably increase administrative costs because, unlike now, eligibility staff would be *required* to redetermine eligibility every 12 months. Based on this information, our methodology overestimates the number of redeterminations that occurred in 1995 and

underestimates the increase in the number of redeterminations that result from a policy of 12-month continuous coverage.

Second, our methodology does not reflect exceptions to eligibility and enrollment policies. While some children may initially be eligible for continuous coverage, events may occur during the coverage period that terminate their eligibility for continuing coverage. A review of evaluations and annual reports for SCHIP reveals that continuous coverage does not apply in all circumstances. For example, in California's Healthy Families program, children lose their eligibility for 12-month continuous coverage if premiums are not paid. In Kentucky, continuous coverage is only available to children enrolled in managed care plans. Children in the Food Stamps program in Ohio effectively do not have continuous coverage because their Medicaid eligibility is redetermined every three months when their Foods Stamps eligibility is redetermined. Exceptions like the ones cited here suggest that our methodology may underestimate the number of redeterminations that would occur in practice, once a policy of 12-month continuous coverage is in place.

Third, states typically do not manage the enrollment and eligibility of children and parents separately and our methodology does not reflect this distinction. While children may be eligible for 12-month continuous coverage, their parents are not. Upon implementation of this policy, the burden of reporting and redetermination requirements will not be reduced for parents so that the reduction realized for children will not be realized at the level of the family. Programs such as California manage enrollment at the level of the family unit. Staff report this approach makes sense for most families. As a result, their computer system is designed to manage eligibility at the family level which means that when one member of the family loses eligibility, the computer will disenroll the entire family and eligibility for the other family members must be re-established. The data do not allow the identification of family units and we could not detect which children would actually experience a change in the number redeterminations. Consequently, the methodology likely overestimates the number of redeterminations before and after the policy in at least one study state.

Fourth, it is also possible that our methodology did not include all relevant administrative costs. For example, in California, we did not include costs associated with the quarterly reports families are required to submit. We estimated that in 1995 California processed 1,799,685 quarterly reports during the year.[9] If each report required 15 minutes of time to process, the administrative costs at the median hourly wage of $12.06 are $5,426,050. Presumably a policy of 12-month continuous coverage would eliminate these costs. By not including this savings, our estimates overstate the increase in costs associated with this policy.

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[9] Based on a 20 percent sample of enrolled children.

EMERGENCY ROOM UTILIZATION AND PAYMENTS

We selected California as a focal state for intensive study of the impact of continuous coverage on emergency room (ER) utilization and payments. In fiscal year 1998, the 3.5 million children age 20 and under receiving Medicaid in California accounted for 17 percent of all children receiving Medicaid (HCFA 2000). In addition to containing a large share of the Medicaid population, California offers two additional advantages: its large size provides statistical power to the analyses, and its diversity allows us to study important subgroups.

The sample used in the analysis of emergency room use and payments contains all children in California who were enrolled in fee-for-service Medicaid at any time in 1994 or 1995.[10] Children with any Medicaid months covered by Primary Care Case Management (PCCM) or managed care arrangements were not included in the sample because capitated payments preclude us from observing their total number and payments for ER services.[11]

Limiting the sample to fee-for-service children is not expected to affect our results. Children in fee-for-service may have lower health status than those in managed care arrangements, potentially resulting in more ER visits. There is no reason to believe, however, that this will differentially affect the estimates for either continuously or discontinuously covered children.

This ER sample is similar to the one used in the analyses of enrollment, payments, and administrative costs. Appendix Table C.1 reports the demographic characteristics of the ER sample, which excludes roughly a quarter of eligible children because they are insured under capitated arrangements. The ER sample has a similar composition to the sample used earlier in terms of age, race/ethnicity, eligibility group, and average length of enrollment.

Outcomes. To gain insight into how a policy of 12-month continuous coverage might affect quality of care, we focused on how ER use and payments would be expected to change if discontinuously covered children obtained continuous coverage. We analyzed ER service use, payment per visit, and payment per enrollee month in 1995. ER use and payments were measured per month enrolled in Medicaid, to control for different lengths of enrollment across the two groups of children. Intensity of medical need (or health status) was measured by outpatient ER payment per enrollee month and per visit.

- *ER visits per month*: We identified ER claims using the "Other" SMRF claims file for California. We categorized a claim as ER-related if it had one of the following CPT-4 procedure codes in the "proccode" field: 99281, 99282, 99283, 99284, 99285, 99288, Z7500, Z7502, Z7504, Z7506, Z7508, Z7510, Z7512, Z7514, Z7610, Z7612. We counted at most one ER visit per

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[10]The analysis of ER use is based on a 20 percent sample of children enrolled at least one month during 1994 and 1995.

[11]The capitated payment to PCCM plans in California includes ER care.

child per calendar day. The total number of ER visits in 1995 were divided by the number of months enrolled in Medicaid for each child. It is possible that some ER services were not identified due to inadequate coding by the health care provider. There is no reason, however, to believe that underreporting would differ systematically for the discontinuously or continuously covered children.

- *ER payment per visit:* Once we identified an ER visit, we cumulated all payments, except inpatient payments, that incurred on the day of the ER visit. We then calculated each child's average payment across all visits in 1995.

- *ER payment per month:* We calculated total ER payments as all non-inpatient payments made on the day of each ER visit during 1995, and divided by the total number of months of Medicaid enrollment reported on the 1995 person-summary file for each child.

Analytical Approach. We conducted three main analyses of ER utilization and paymens. In our first analysis, we compared ER use and payments for all diagnoses between continuously and discontinuously covered children. In our second analysis, we refined this comparison by exploring differences in the level and payment of ER claims for ear, nose, and throat (ENT) diagnoses (ICD-9-CM codes 382, 462, 463, 465, and 4721) between discontinuously and continuously covered children. Based on previous literature, we expected these ENT-related ER visits to be more sensitive to the quality of ambulatory care than ER visits for all diagnoses (Parker et al. 2000; Gadomski et al. 1998; and Hadley and Steinberg 1993). In both analyses, we used the ER patterns of continuously covered children to estimate how discontinuously covered children would use the ER if they had continuous coverage, controlling for observed characteristics of the children.

These first two analyses may be flawed if there are unobservable differences between the continuously and discontinuously covered children that affect ER use. For example, discontinuously covered children could have poorer health status on average than continuously covered children; as a result, they may require more ER services, regardless of their discontinuous coverage. While we adjusted for prior Medicaid expenditures and reasons for Medicaid eligibility, it is possible that prior expenditures and eligibility do not completely capture the differences in health status between the two groups. Not controlling for such differences might cause us to erroneously conclude that continuous coverage would alter ER use when, in fact, it would not. In addition, the analyses assumed that the policy will completely eliminate gaps in coverage and provide all children with 12-month continuous coverage. However, results we present in Chapter III show that the average length of enrollment with the policy in place would be between 10 and 11 months in the study states.

In our third analysis, we investigated the effect of reducing the length of the gap in Medicaid coverage to two months on ER use and payments upon reenrollment for the

subgroup of discontinuously covered children. The average gap for all discontinuously covered children is 6.3 months, so the estimates of ER use under a policy of continuous coverage reduce this gap to 2 months. The average gap for discontinuously covered children *with any ER visits* is 5.9 months, so the estimate of payment for children with ER visits under the policy reduces the gap length from 5.9 to 2 months. ER use and payments were examined in the first three months after the gap. We hypothesize that reducing the average length of the gap in coverage will increase the provision of appropriate ambulatory care and result in lower and less costly ER use upon reenrollment. This analysis has the advantage of comparing two samples—children with shorter gaps and children with longer gaps—that are less likely to differ in important, unobserved ways. Thus it served as a good test of the robustness for the analysis of the full sample.

Statistical Methods. Unlike the analyses of enrollment and payments, the quality of care analysis did not use simulations. Instead, we employed regression techniques to estimate how a policy of continuous coverage would alter ER service use and payments for discontinuously covered children. To estimate the number of visits per enrollee month for the first two analyses, we used the following ordinary least squares regression:

(1) $Y_i = a_0 + a_1 DISCONTINUOUS_i + \sum a_j X_{ji} + e_i,$

where Y_i is the number of ER visits per enrollee month for the *i*th individual, $DISCONTINUOUS_i$ indicates whether the child has discontinuous or continuous coverage (a binary variable equal to 1 if child *i* has discontinuous coverage and 0 if he or she has continuous coverage), X_{ji} is a set of *j* individual characteristics that we expected also to affect ER use (such as age, gender, and past Medicaid expenditures), and e_i is a random disturbance term. Under this simple specification, a_1 estimates the effect of discontinuous coverage on the number of ER visits per enrollee month, adjusting for an individual's characteristics. We then predicted average ER use for the discontinuously covered children with and without 12-month continuous coverage, evaluated at the full sample's means.

For the third analysis, we estimated the following equation for discontinuously covered children:

(2) $Y_i = a_0 + a_1 LENGTH\ OF\ GAP\ IN\ COVERAGE_i + \sum a_j X_{ji} + e_i.$

Under this simple specification, a_1 estimates the effect of the length of the gap in coverage on the number of ER visits per enrollee month in the first three months after a gap, adjusting for an individual's characteristics. We then predicted average ER use for the discontinuously covered children, evaluated at the full sample's means, when they have their

average length of gap in coverage and again when the gap in coverage is reduced to two months.[12]

All three analyses also estimate the outpatient ER payment per enrollee month and the payment per visit for children who had an ER visit. These payment regressions estimated equation (1) or (2), where Y_i was the natural logarithm of ER payments per month or per visit. The logarithmic specification was used to minimize the effect of outliers. To obtain the predicted estimates shown in Table VI.3, we exponentiated the predicted value of log-dollars and multiplied it by the smearing factor.

All the estimated equations reported in Chapter VI controlled for demographic characteristics; primary eligibility group during 1995; and 1994 Medicaid enrollment histories, payments, and ER use of the children in each group.

- Demographic characteristics included age, race/ethnicity, and gender. Age groups by race/ethnicity were included to improve the ability to capture race/ethnicity differences within age groups.

- The child's primary eligibility group was included, as well as whether the child was ever eligible in 1994 or 1995 through the Supplemental Security Income program (SSI).

- Enrollment history in 1994 was captured through flags for the length of enrollment during that year and whether the child had a gap in enrollment during 1994.

- A flag for any ER use in 1994 was included as a control for habits of using the ER.[13]

- Because prior Medicaid payments are a reflection of underlying health status and use of care, the equations contained a variety of controls for 1994 Medicaid fee-for-service payments. Besides total payments, the simulation used several flags to indicate where the child's total payments fell on the overall distribution of 1994 payments (none, average, high, or very high). These flags were crossed with the flags indicating the length of enrollment in 1994. Splines defined by length of enrollment in 1994 and level of 1994 payments were used to better capture prior expenditures by length of enrollment.

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[12]We also tested a non-linear effect of the length of the gap in coverage by using a set of categorical variables to represent different lengths.

[13] Omitting this variable did not change the results reported in Chapter VI.

- To account for variation in aggregate monthly ER use over the 1994-1995 period, the analyses of use and payment of ER services after a gap in Medicaid coverage included a set of categorical variables for the month the gap started and another set for the month the gap ended and the reenrollment period started.

Appendix B

Demographic Characteristics

APPENDIX TABLE B.1

ACTUAL DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN
ELIGIBLE FOR 12-MONTH CONTINUOUS COVERAGE IN CALIFORNIA IN 1995

	Full Sample	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	2,712,590	1,799,685	709,370	203,535
Female	1,353,515	902,065	349,175	102,275
Age as of December 31, 1995				
Less than 1	148,235	7,385	139,015	1,835
1 to 6 years	1,040,500	697,545	249,390	93,565
6 to 15 years	1,137,540	849,670	213,720	74,150
15 to 19 years	386,315	245,085	107,245	33,985
Race/Ethnicity				
White	756,890	470,030	230,715	56,145
Black	449,800	327,005	100,655	22,140
Hispanic	1,201,780	766,670	320,850	114,260
Other	304,120	235,980	57,150	10,990
Primary Eligibility Group[b]				
AFDC	2,259,400	1,629,105	520,790	109,505
Medically Needy/Disabled	207,915	85,190	69,800	52,925
Poverty-Related	94,250	13,700	53,070	27,480
Other	151,025	71,690	65,710	13,625
Enrollment				
Total number of enrollee months	27,554,135 months	21,596,220 months	4,529,515 months	1,428,400 months
Average length of enrollment	10.2 months	12.0 months	6.4 months	7.0 months
Row Percent				
Total	100.0	66.3	26.2	7.5
Female	100.0	66.6	25.8	7.6
Age as of December 31, 1995				
Less than 1	100.0	5.0	93.8[c]	1.2
1 to 6 years	100.0	67.0	24.0	9.0
6 to 15 years	100.0	74.7	18.8	6.5
15 to 19 years	100.0	63.4	27.8	8.8
Race/Ethnicity				
White	100.0	62.1	30.5	7.4
Black	100.0	72.7	22.4	4.9
Hispanic	100.0	63.8	26.7	9.5
Other	100.0	77.6	18.8	3.6
Primary Eligibility Group[b]				
AFDC	100.0	72.1	23.0	4.8
Medically Needy/Disabled	100.0	41.0	33.6	25.5
Poverty-Related	100.0	14.5	56.3	29.2
Other	100.0	47.5	43.5	9.0
Column Percent				
Total	100.0	100.0	100.0	100.0
Female	49.9	50.1	49.2	50.2
Age as of December 31, 1995				
Less than 1	5.5	0.4	19.6	0.9
1 to 6 years	38.4	38.8	35.2	46.0
6 to 15 years	41.9	47.2	30.1	36.4
15 to 19 years	14.2	13.6	15.1	16.7
Race/Ethnicity				
White	27.9	26.1	32.5	27.6
Black	16.6	18.2	14.2	10.9
Hispanic	44.3	42.6	45.2	56.1
Other	11.2	13.1	8.1	5.4
Primary Eligibility Group[b]				
AFDC	83.3	90.5	73.4	53.8
Medically Needy/Disabled	7.7	4.7	9.8	26.0
Poverty-Related	3.5	0.8	7.5	13.5
Other	5.6	4.0	9.3	6.7

SOURCE: 1995 State Medicaid Research Files from California.
NOTES: Based on a 20 percent sample of children eligible for 12-month continuous coverage.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.2
DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN UNDER A SIMULATED
POLICY OF 12-MONTH CONTINUOUS COVERAGE IN CALIFORNIA DURING CALENDAR YEAR 1995

	Children Projected to Be Covered	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	2,987,545	2,132,400	746,175	108,970
Female	1,486,825	1,064,035	367,180	55,610
Age as of December 31, 1995				
Less than 1	148,285	8,820	138,455	1,010
1 to 6 years	1,187,845	836,155	303,160	48,530
6 to 15 years	1,226,875	982,635	204,100	40,140
15 to 19 years	424,540	304,790	100,460	19,290
Race/Ethnicity				
White	844,040	576,205	238,790	29,045
Black	480,805	373,045	97,030	10,730
Hispanic	1,336,530	924,215	349,095	63,220
Other	326,170	258,935	61,260	5,975
Primary Eligibility Group[b]				
AFDC	2,403,630	1,875,820	476,895	50,915
Medically Needy/Disabled	219,215	109,640	70,735	38,840
Poverty-Related	177,010	38,620	125,395	12,995
Other	187,690	108,320	73,150	6,220
Enrollment				
Total number of enrollee months	30,379,300 months	25,588,750 months	3,992,225 months	798,275 months
Average length of enrollment	10.2 months	12.0 months	5.4 months	7.3 months
Row Percent				
Total	100.0	71.4	25.0	3.6
Female	100.0	71.6	24.7	3.7
Age as of December 31, 1995				
Less than 1	100.0	5.9	93.4	0.7
1 to 6 years	100.0	70.4	25.5	4.1
6 to 15 years	100.0	80.1	16.6	3.3
15 to 19 years	100.0	71.8	23.7	4.5
Race/Ethnicity				
White	100.0	68.3	28.3	3.4
Black	100.0	77.6	20.2	2.2
Hispanic	100.0	69.2	26.1	4.7
Other	100.0	79.4	18.8	1.8
Primary Eligibility Group[b]				
AFDC	100.0	78.0	19.8	2.1
Medically Needy/Disabled	100.0	50.0	32.3	17.7
Poverty-Related	100.0	21.8	70.8	7.3
Other	100.0	57.7	39.0	3.3
Column Percent				
Total	100.0	100.0	100.0	100.0
Female	49.8	49.9	49.2	51.0
Age as of December 31, 1995				
Less than 1	5.0	0.4	18.6	0.9
1 to 6 years	39.8	39.2	40.6	44.5
6 to 15 years	41.1	46.1	27.4	36.8
15 to 19 years	14.2	14.3	13.5	17.7
Race/Ethnicity				
White	28.3	27.0	32.0	26.7
Black	16.1	17.5	13.0	9.8
Hispanic	44.7	43.3	46.8	58.0
Other	10.9	12.1	8.2	5.5
Primary Eligibility Group[b]				
AFDC	80.5	88.0	63.9	46.7
Medically Needy/Disabled	7.3	5.1	9.5	35.6
Poverty-Related	5.9	1.8	16.8	11.9
Other	6.3	5.1	9.8	5.7

SOURCE: 1994 and 1995 State Medicaid Research Files from California.
NOTES: Based on a 20 percent sample of children eligible for 12-month continuous coverage.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.3
ACTUAL DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN
ELIGIBLE FOR 12-MONTH CONTINUOUS COVERAGE IN MICHIGAN IN 1995

	Total Population	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	710,879	406,892	241,696	62,291
Female	359,893	205,063	122,565	32,265
Age as of December 31, 1995				
Less than 1	58,607	4,064	53,996	547
1 to 6 years	273,139	171,367	75,406	26,366
6 to 15 years	288,972	186,720	77,276	24,976
15 to 19 years	90,161	44,741	35,018	10,402
Race/Ethnicity				
White	365,256	182,243	148,049	34,964
Black	294,927	201,181	73,666	20,080
Hispanic	31,944	13,112	12,735	6,097
Other	18,752	10,356	7,246	1,150
Primary Eligibility Group[b]				
AFDC	495,907	329,217	130,483	36,207
Medically Needy/Disabled	34,877	19,553	9,223	6,101
Poverty-Related	142,700	45,070	81,924	15,706
Other	37,395	13,052	20,066	4,277
Enrollment				
Total number of enrollee months	6,831,804 months	4,882,704 months	1,527,602 months	421,498 months
Average length of enrollment	9.6 months	12.0 months	6.3 months	6.8 months
		Row Percent		
Total	100.0	57.2	34.0	8.8
Female	100.0	57.0	34.1	9.0
Age as of December 31, 1995				
Less than 1	100.0	6.9	92.1	0.9
1 to 6 years	100.0	62.7	27.6	9.7
6 to 15 years	100.0	64.6	26.7	8.6
15 to 19 years	100.0	49.6	38.8	11.5
Race/Ethnicity				
White	100.0	49.9	40.5	9.6
Black	100.0	68.2	25.0	6.8
Hispanic	100.0	41.0	39.9	19.1
Other	100.0	55.2	38.6	6.1
Primary Eligibility Group[b]				
AFDC	100.0	66.4	26.3	7.3
Medically Needy/Disabled	100.0	56.1	26.4	17.5
Poverty-Related	100.0	31.6	57.4	11.0
Other	100.0	34.9	53.7	11.4
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	50.6	50.4	50.7	51.8
Age as of December 31, 1995				
Less than 1	8.2	1.0	22.3	0.9
1 to 6 years	38.4	42.1	31.2	42.3
6 to 15 years	40.6	45.9	32.0	40.1
15 to 19 years	12.7	11.0	14.5	16.7
Race/Ethnicity				
White	51.4	44.8	61.3	56.1
Black	41.5	49.4	30.5	32.2
Hispanic	4.5	3.2	5.3	9.8
Other	2.6	2.5	3.0	1.8
Primary Eligibility Group[b]				
AFDC	69.8	80.9	54.0	58.1
Medically Needy/Disabled	4.9	4.8	3.8	9.8
Poverty-Related	20.1	11.1	33.9	25.2
Other	5.3	3.2	8.3	6.9

SOURCE: 1995 State Medicaid Research Files from Michigan.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.4

DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN UNDER A SIMULATED
POLICY OF 12-MONTH CONTINUOUS COVERAGE IN MICHIGAN DURING CALENDAR YEAR 1995

	Children Projected to Be Enrolled	Continuously Enrolled: 12 Months	Continuously Enrolled: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	781,601	528,580	226,021	27,000
Female	394,212	265,988	114,075	14,149
Age as of December 31, 1995				
Less than 1	58,607	5,029	53,559	19
1 to 6 years	302,230	224,499	67,211	10,520
6 to 15 years	317,626	236,085	70,547	10,994
15 to 19 years	103,138	62,967	34,704	5,467
Race/Ethnicity				
White	411,423	253,503	142,061	15,859
Black	313,201	242,262	62,359	8,580
Hispanic	36,413	19,878	14,523	2,012
Other	20,564	12,937	7,078	549
Primary Eligibility Group[b]				
AFDC	538,866	400,365	123,527	14,974
Medically Needy/Disabled	37,131	22,548	10,458	4,125
Poverty-Related	166,600	74,958	85,394	6,248
Other	39,004	30,709	6,642	1,653
Enrollment				
Total number of enrollee months	7,749,149 months	6,342,960 months	1,217,805 months	188,384 months
Average length of enrollment	9.9 months	12.0 months	5.4 months	7.0 months
		Row Percent		
Total	100.0	67.6	28.9	3.5
Female	100.0	67.5	28.9	3.6
Age as of December 31, 1995				
Less than 1	100.0	8.6	91.4	0.0
1 to 6 years	100.0	74.3	22.2	3.5
6 to 15 years	100.0	74.3	22.2	3.5
15 to 19 years	100.0	61.1	33.6	5.3
Race/Ethnicity				
White	100.0	61.6	34.5	3.9
Black	100.0	77.4	19.9	2.7
Hispanic	100.0	54.6	39.9	5.5
Other	100.0	62.9	34.4	2.7
Primary Eligibility Group[b]				
AFDC	100.0	74.3	22.9	2.8
Medically Needy/Disabled	100.0	60.7	28.2	11.1
Poverty-Related	100.0	45.0	51.3	3.8
Other	100.0	78.7	17.0	4.2
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	50.4	50.3	50.5	52.4
Age as of December 31, 1995				
Less than 1	7.5	1.0	23.7	0.1
1 to 6 years	38.7	42.5	29.7	39.0
6 to 15 years	40.6	44.7	31.2	40.7
15 to 19 years	13.2	11.9	15.4	20.2
Race/Ethnicity				
White	52.6	48.0	62.9	58.7
Black	40.1	45.8	27.6	31.8
Hispanic	4.7	3.8	6.4	7.5
Other	2.6	2.4	3.1	2.0
Primary Eligibility Group[b]				
AFDC	68.9	75.7	54.7	55.5
Medically Needy/Disabled	4.8	4.3	4.6	15.3
Poverty-Related	21.3	14.2	37.8	23.1
Other	5.0	5.8	2.9	6.1

SOURCE: 1994 and 1995 State Medicaid Research Files from Michigan.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.5
ACTUAL DEMOGRAPHIC AND ENROLLMENT PATTERNS OF CHILDREN ELIGIBLE FOR
12-MONTH CONTINUOUS COVERAGE IN MISSOURI IN 1995

	Total Population	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	451,175	276,007	149,447	25,721
Female	224,997	137,918	73,758	13,321
Age as of December 31, 1995				
Less than 1	31,572	2,446	28,971	155
1 to 6 years	166,275	112,864	43,722	9,689
6 to 15 years	187,993	124,921	52,241	10,831
15 to 19 years	65,335	35,776	24,513	5,046
Race/Ethnicity				
White	296,167	160,757	115,455	19,955
Black	153,365	114,400	33,226	5,739
Hispanic	496	282	212	2
Other	1,147	568	554	25
Primary Eligibility Group[b]				
AFDC	220,770	155,560	54,214	10,996
Medically Needy/Disabled	3,222	2,091	901	230
Poverty-Related	207,783	108,730	85,837	13,216
Other	19,400	9,626	8,495	1,279
Enrollment				
Total number of enrollee months	4,416,874 months	3,312,084 months	925,927 months	178,863 months
Average length of enrollment	9.8 months	12.0 months	6.2 months	7.0 months
		Row Percent		
Total	100.0	61.2	33.1	5.7
Female	100.0	61.3	32.8	5.9
Age as of December 31, 1995				
Less than 1	100.0	7.7	91.8[c]	0.5
1 to 6 years	100.0	67.9	26.3	5.8
6 to 15 years	100.0	66.4	27.8	5.8
15 to 19 years	100.0	54.8	37.5	7.7
Race/Ethnicity				
White	100.0	54.3	39.0	6.7
Black	100.0	74.6	21.7	3.7
Hispanic	100.0	56.9	42.7	0.4
Other	100.0	49.5	48.3	2.2
Primary Eligibility Group[b]				
AFDC	100.0	70.5	24.6	5.0
Medically Needy/Disabled	100.0	64.9	28.0	7.1
Poverty-Related	100.0	52.3	41.3	6.4
Other	100.0	49.6	43.8	6.7
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	49.9	50.0	49.4	51.8
Age as December 31, 1995				
Less than 1	7.0	0.9	19.4	0.6
1 to 6 years	36.9	40.9	29.3	37.7
6 to 15 years	41.7	45.3	35.0	42.1
15 to 19 years	14.5	13.0	16.4	19.6
Race/Ethnicity				
White	65.6	58.2	77.3	77.6
Black	34.0	41.4	22.2	22.3
Hispanic	0.1	0.1	0.1	0.0
Other	0.3	0.2	0.4	0.1
Primary Eligibility Group[b]				
AFDC	48.9	56.4	36.3	42.8
Medically Needy/Disabled	0.7	0.8	0.6	0.9
Poverty-Related	46.1	39.4	57.4	51.4
Other	4.3	3.5	5.7	5.0

SOURCE: 1995 State Medicaid Research Files from Missouri.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.6

DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN UNDER A SIMULATED
POLICY OF 12-MONTH CONTINUOUS COVERAGE IN MISSOURI DURING CALENDAR YEAR 1995

	Children Projected to Be Covered	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	495,398	341,862	141,489	12,047
Female	246,183	170,292	69,560	6,331
Age as of December 31, 1995				
Less than 1	31,572	2,777	28,795	0
1 to 6 years	181,871	138,908	38,798	4,165
6 to 15 years	208,556	153,992	49,269	5,295
15 to 19 years	73,399	46,185	24,627	2,587
Race/Ethnicity				
White	331,635	212,205	110,022	9,408
Black	161,205	128,478	30,101	2,626
Hispanic	752	370	381	1
Other	1,806	809	985	12
Primary Eligibility Group[b]				
AFDC	236,850	180,600	51,201	5,049
Medically Needy/Disabled	3,454	2,414	923	117
Poverty-Related	232,307	146,677	79,431	6,199
Other	22,787	12,171	9,934	682
Enrollment				
Total Number of Enrollee Months	4,916,843 months	4,102,344 months	730,820 months	83,679 months
Average Length of Enrollment	9.9 months	12.0 months	5.2 months	7.0 months
		Row Percent		
Total	100.0	69.0	28.6	2.4
Female	100.0	69.2	28.3	2.6
Age as of December 31, 1995				
Less than 1	100.0	8.8	91.2	0.0
1 to 6 years	100.0	76.4	21.3	2.3
6 to 15 years	100.0	73.8	23.6	2.5
15 to 19 years	100.0	62.9	33.6	3.5
Race/Ethnicity				
White	100.0	64.0	33.2	2.8
Black	100.0	79.7	18.7	1.6
Hispanic	100.0	49.2	50.7	0.1
Other	100.0	44.8	54.5	0.7
Primary Eligibility Group[b]				
AFDC	100.0	76.3	21.6	2.1
Medically Needy/Disabled	100.0	69.9	26.7	3.4
Poverty-Related	100.0	63.1	34.2	2.7
Other	100.0	53.4	43.6	3.0
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	49.7	49.8	49.2	52.6
Age as of December 31, 1995				
Less than 1	6.4	0.8	20.4	0.0
1 to 6 years	36.7	40.6	27.4	34.6
6 to 15 years	42.1	45.0	34.8	44.0
15 to 19 years	14.8	13.5	17.4	21.5
Race/Ethnicity				
White	66.9	62.1	77.8	78.1
Black	32.5	37.6	21.3	21.8
Hispanic	0.2	0.1	0.3	0.0
Other	0.4	0.2	0.7	0.1
Primary Eligibility Group[b]				
AFDC	47.8	52.8	36.2	41.9
Medically Needy/Disabled	0.7	0.7	0.7	1.0
Poverty-Related	46.9	42.9	56.1	51.5
Other	4.6	3.6	7.0	5.7

SOURCE: 1994 and 1995 State Medicaid Research Files from Missouri.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.7
ACTUAL DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN
ELIGIBLE FOR 12-MONTH CONTINUOUS COVERAGE IN NEW JERSEY IN 1995

	Total Population	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	423,092	244,202	155,110	23,780
Female	215,572	123,319	79,710	12,543
Age as of December 31, 1995				
Less than 1	30,155	1,826	28,181	148
1 to 6 years	161,470	93,362	57,849	10,259
6 to 15 years	170,618	114,530	46,812	9,276
15 to 19 years	60,849	34,484	22,268	4,097
Race/Ethnicity				
White	100,155	47,571	45,744	6,840
Black	183,556	119,794	54,077	9,685
Hispanic	122,971	68,776	47,600	6,595
Other	16,410	8,061	7,689	660
Primary Eligibility Group[b]				
AFDC	269,455	177,925	77,737	13,793
Medically Needy/Disabled	3,808	3,073	535	200
Poverty-Related	88,198	30,487	52,086	5,625
Other	61,631	32,717	24,752	4,162
Enrollment				
Total number of enrollee months	4,016,260 months	2,930,424 months	922,245 months	163,591 months
Average length of enrollment	9.5 months	12.0 months	6.0 months	6.7 months
		Row Percent		
Total	100.0	57.7	36.7	5.6
Female	100.0	57.2	37.0	5.8
Age as of December 31, 1995				
Less than 1	100.0	6.1	93.5[c]	0.5
1 to 6 years	100.0	57.8	35.8	6.4
6 to 15 years	100.0	67.1	27.4	5.4
15 to 19 years	100.0	56.7	36.6	6.7
Race/Ethnicity				
White	100.0	47.5	45.7	6.8
Black	100.0	65.3	29.5	5.3
Hispanic	100.0	55.9	38.7	5.4
Other	100.0	49.1	46.9	4.0
Primary Eligibility Group[b]				
AFDC	100.0	66.0	28.8	5.1
Medically Needy/Disabled	100.0	80.7	14.0	5.3
Poverty-Related	100.0	34.6	59.1	6.4
Other	100.0	53.1	40.2	6.8
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	51.0	50.5	51.4	52.7
Age as of December 31, 1995				
Less than 1	7.1	0.7	18.2	0.6
1 to 6 years	38.2	38.2	37.3	43.1
6 to 15 years	40.3	46.9	30.2	39.0
15 to 19 years	14.4	14.1	14.4	17.2
Race/Ethnicity				
White	23.7	19.5	29.5	28.8
Black	43.4	49.1	34.9	40.7
Hispanic	29.1	28.2	30.7	27.7
Other	3.9	3.3	5.0	2.8
Primary Eligibility Group[b]				
AFDC	63.7	72.9	50.1	58.0
Medically Needy/Disabled	0.9	1.3	0.3	0.8
Poverty-Related	20.8	12.5	33.6	23.7
Other	14.6	13.4	16.0	17.5

SOURCE: 1995 State Medicaid Research Files from New Jersey.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

APPENDIX TABLE B.8
DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT PATTERNS OF CHILDREN UNDER A SIMULATED
POLICY OF 12-MONTH CONTINUOUS COVERAGE IN NEW JERSEY DURING CALENDAR YEAR 1995

	Children Projected to Be Covered	Continuously Covered: 12 Months	Continuously Covered: Less than 12 Months	Have at Least One Gap in Enrollment[a]
Total Number of Enrollees	493,783	307,969	175,289	10,525
Female	250,928	155,006	90,331	5,591
Age as of December 31, 1995				
Less than 1	30,171	2,264	27,897	10
1 to 6 years	194,570	123,205	67,202	4,163
6 to 15 years	196,720	138,721	53,699	4,300
15 to 19 years	72,322	43,779	26,491	2,052
Race/Ethnicity				
White	122,112	66,092	52,980	3,040
Black	208,439	144,404	59,729	4,306
Hispanic	143,803	86,868	54,003	2,932
Other	19,429	10,605	85,77	247
Primary Eligibility Group[b]				
AFDC	305,831	211,118	88,482	6,231
Medically Needy/Disabled	3,939	3,226	594	119
Poverty-Related	109,292	48,699	58,342	2,251
Other	74,721	44,926	27,871	1,924
Enrollment				
Total number of enrollee months	4,650,260 months	3,695,628 months	879,843 months	74,789 months
Average length of enrollment	9.4 months	12.0 months	5.0 months	7.1 months
		Row Percent		
Total	100.0	62.4	35.5	2.1
Female	100.0	61.8	36.0	2.2
Age				
Less than 1	100.0	2.2	97.7	0.0
1 to 6 years	100.0	76.3	21.1	2.6
6 to 15 years	100.0	81.3	16.2	2.5
15 to 19 years	100.0	71.9	24.7	3.4
Race/Ethnicity				
White	100.0	54.1	43.4	2.5
Black	100.0	69.3	28.7	2.1
Hispanic	100.0	60.4	37.6	2.0
Other	100.0	54.6	44.1	1.3
Primary Eligibility Group[b]				
AFDC	100.0	69.0	28.9	2.0
Medically Needy/Disabled	100.0	81.9	15.1	3.0
Poverty-Related	100.0	44.6	53.4	2.1
Other	100.0	60.1	37.3	2.6
		Column Percent		
Total	100.0	100.0	100.0	100.0
Female	50.8	50.3	51.5	53.1
Age as of December 31, 1995				
Less than 1	6.1	0.7	15.9	0.1
1 to 6 years	39.4	40.0	38.3	39.6
6 to 15 years	39.8	45.0	30.6	40.9
15 to 19 years	14.6	14.2	15.1	19.5
Race/Ethnicity				
White	24.7	21.5	30.2	28.9
Black	42.2	46.9	34.1	40.9
Hispanic	29.1	28.2	30.8	27.9
Other	3.9	3.4	4.9	2.3
Primary Eligibility Group[b]				
AFDC	61.9	68.6	50.5	59.2
Medically Needy/Disabled	0.8	1.0	0.3	1.1
Poverty-Related	22.1	15.8	33.3	21.4
Other	15.1	14.6	15.9	18.3

SOURCE: 1994 and 1995 State Medicaid Research Files from New Jersey.

[a] Enrollment gaps are at least two months long.
[b] If a child changes eligibility groups during the year, the child is in the group in which he or she spent the most time.

Appendix B. Demographic Characteristics

Appendix C

Demographic Characteristics of the Study Sample for the Analysis of Emergency Room Use and Payments

APPENDIX TABLE C.1

DEMOGRAPHIC CHARACTERISTICS OF SAMPLE WITH EMERGENCY ROOM VISITS
BY CONTINUOUS AND DISCONTINUOUS COVERAGE
1995 SMRF DATA FOR CALIFORNIA

	Continuously Covered		Discontinuously Covered
	12 Months	Less than 12 Months	
Number of children	245,956	113,737	33,923
Percent female	50.1	50.8	50.0
Age as of December 31,1995			
Less than 1	0.5	21.3	0.9
1 to 6 years	37.7	34.9	46.2
6 to 15 years	47.4	29.2	36.0
15 to 19 years	14.4	14.7	16.8
Average age	8.1	6.2	7.6
Race/Ethnicity			
White	27.9	33.6	28.3
Black	15.3	12.8	9.4
Hispanic	40.8	44.9	56.7
Other	16.0	8.7	5.6
Primary Eligibility Group			
AFDC	88.6	70.9	50.3
Poverty-Related	1.0	9.0	15.6
Medically Needy/Disabled	5.5	10.5	27.4
Other	1.5	7.1	6.1
Mean Medicaid expenditures for ER services	$99.80	$84.59	$75.62
Median Medicaid expenditures for ER services	$0.00	$0.00	$0.00
Mean total Medicaid expenditures (FFS)	$643.73	$478.49	$422.23
Median total Medicaid expenditures (FFS)	$210.00	$64.00	$87.00
Average length of enrollment in 1995	12.0	6.2	6.8

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage that is at least two months long. Children switching eligibility groups during the year are classified according to the group in which they have the greatest number of enrollee months during 1995. The California data are based on a 20 percent sample of children.

Appendix C: Demographic Characteristics of the Study Sample for the
Analysis of Emergency Room Use and Payments

APPENDIX TABLE C.2

DEMOGRAPHIC CHARACTERISTICS OF SUB-SAMPLE WITH EMERGENCY ROOM VISITS FOR
EAR, NOSE, AND THROAT CONDITIONS
BY CONTINUOUS AND DISCONTINUOUS ENROLLMENT
1995 SMRF DATA FOR CALIFORNIA

	Continuously Covered		
	12 Months	Less than 12 Months	Discontinuously Covered
Number of children	26,970	8,768	2,649
Percent female	49.7	47.8	48.7
Age as of December 31,1995			
Less than 1	1.2	36.5	2.0
1 to 6 years	64.9	47.3	7.3
6 to 15 years	27.6	12.0	17.8
15 to 19 years	6.3	4.2	7.6
Average age	5.1 years	2.8 years	4.5 years
Race/Ethnicity			
White	37.2	36.7	32.6
Black	15.0	10.8	6.6
Hispanic	41.9	47.3	56.5
Other	5.9	5.2	4.3
Primary Eligibility Group			
AFDC	87.4	68.7	44.7
Poverty-Related	1.6	11.3	23.7
Medically Needy/Disabled	7.6	14.8	28.7
Other	1.4	4.0	2.7
Mean Medicaid expenditures for ER services	$352.30	$334.92	$257.85
Median Medicaid expenditures for ER services	$116.00	$93.00	$90.00
Mean total Medicaid expenditures (FFS)	$1,143.28	$1,015.49	$794.73
Median total Medicaid expenditures (FFS)	$514.50	$369.50	$345.00
Average length of enrollment in 1995	12.0	7.6	7.6

SOURCE: Mathematica Policy Research, Inc. analysis of SMRF data from calendar year 1995.

NOTES: Sample includes only children eligible for a policy of 12-month continuous coverage. Children are defined as discontinuously covered if they have a gap in coverage that is at least two months long. Children switching eligibility groups during the year are classified according to the group in which they have the greatest number of enrollee months during 1995. The California data are based on a 20 percent sample of children.

Appendix C: Demographic Characteristics of the Study Sample for the
Analysis of Emergency Room Use and Payments