

Effects of the State Children's Health Insurance Program Expansions on Children With Chronic Health Conditions

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ABSTRACT. *Objective.* To estimate the effects of the State Children's Health Insurance Program (SCHIP) expansions on insurance coverage, use of health care services, and access to care for children with chronic health conditions.

Methods. The primary source of data was the National Health Interview Survey. Children with chronic health conditions were identified primarily through reported diagnoses of common chronic conditions (eg, asthma, attention-deficit disorder, mental retardation, Down syndrome, cerebral palsy, muscular dystrophy, sickle cell disease, diabetes, arthritis, heart disease) and on the presence of activity limitations caused by a health problem lasting at least 12 months. We examined changes in a broad array of outcomes for children with chronic health conditions who gained eligibility under SCHIP or who were already eligible for coverage under Medicaid, comparing the periods before and after implementation of the program. Changes for these treatment groups were compared with children with slightly higher incomes, who should not have been affected by the eligibility expansions. Comparisons were made with adjustment for child, family, and other characteristics that might have independent effects on the outcomes of interest. Outcomes included health insurance coverage, use of general and specialty services, access to care, and out-of-pocket spending on health care. Selected analyses were conducted for children not identified as having chronic health conditions.

Results. The SCHIP expansions resulted in a 9.8 percentage point increase in the proportion of children with chronic conditions reporting public insurance and a 6.4 percentage point decline in the proportion uninsured. Unmet need for health care decreased by 8 percentage points, with most of the decline found for dental care. Increases in specialist, eye care, and dental visits and decreases in out-of-pocket spending and emergency-department and mental health visits were observed but did not meet standards of statistical significance. Estimated reductions in unmet need were greater for children with chronic conditions than for other children.

Conclusions. Recent expansions in public insurance eligibility under SCHIP have improved coverage for chil-

dren with chronic conditions, with selected improvements in access to care. However, some eligible children with chronic conditions remain uninsured, and the impact on access to care and service use were limited. Additional progress may require targeted outreach to children with chronic conditions and improvements in Medicaid and SCHIP service-delivery systems. Given the current fiscal environment and the fact that children with chronic conditions have not generally been protected from cutbacks, the recent progress documented in this study may be reversed. *Pediatrics* 2005;116:e34–e42. URL: www.pediatrics.org/cgi/doi/10.1542/peds.2004-2297; *health insurance, eligibility, children, chronic conditions, access.*

ABBREVIATIONS. SCHIP, State Children's Health Insurance Program; NHIS, National Health Interview Survey.

Created through passage of the Balanced Budget Act of 1997, the State Children's Health Insurance Program (SCHIP) is the most recent in a series of expansions to public insurance eligibility for children that began in the late 1980s. By 2000, all states had implemented some form of SCHIP expansion. Congress set a target eligibility level at 200% of the federal poverty level, but states were permitted to extend SCHIP eligibility to children in families with even higher incomes. States could implement extensions to their Medicaid programs and/or use separate programs that were more similar to private insurance. Sixteen states implemented only expansions to Medicaid, 16 implemented only separate programs, and 19 implemented both types of expansions.¹ Children with employer-sponsored insurance were excluded from full SCHIP eligibility, with some exceptions, and many states adopted measures such as waiting periods to discourage parents from dropping private coverage for their children. Because states receive enhanced financial support from the federal government for SCHIP enrollees, they were required to screen SCHIP applicants for Medicaid eligibility and enroll eligible children in that program. States were encouraged to simplify the application and enrollment processes and to devise active outreach strategies.

The immediate goal of SCHIP is to provide insurance to low-income children without other sources of coverage. Improved health care access and health status are expected to follow the coverage gains. It is expected that children made newly eligible under SCHIP, as well as children who were already eligible for Medicaid, will experience these gains because of

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the expansions in eligibility and the investments in outreach and enrollment simplification.²

One important question that has not been addressed yet is how children with chronic conditions have been affected by the SCHIP expansions. Children with chronic health conditions represent a particularly vulnerable population for whom health insurance coverage is critical. They need a broad array of services³ and have out-of-pocket expenses that are significantly greater than for other children.⁴⁻⁶ Public insurance, such as SCHIP, may be particularly desirable for children with chronic conditions, to the extent that it covers a broader spectrum of services than private insurance plans⁷ and shifts the financial burden away from the family. Although many of the separate SCHIP plans offer a more limited scope of covered services than Medicaid,⁸ most SCHIP plans have a broader scope of coverage and less cost sharing than private insurance plans. Furthermore, states were permitted to use SCHIP funds to provide special programs or supplemental services for children with chronic conditions when enrolled in separate SCHIP plans.^{9,10} Thus, policies that expand public insurance eligibility, such as SCHIP, are likely to have substantial effects on both coverage and access for children with chronic conditions.

PREVIOUS STUDIES

Several studies have examined the effects of earlier Medicaid expansions on insurance coverage and use of services for children generally. Findings suggest that expanding Medicaid eligibility increased public insurance enrollment, with varying degrees of substitution of public for private insurance among newly eligible children.¹¹⁻¹⁵ Medicaid-eligibility expansions were found to have positive spillover effects on enrollment for children previously eligible for Medicaid.^{13,14} Expansion of Medicaid eligibility also affected service use and spending, increasing physician and dental care visits,^{16,17} reducing out-of-pocket spending,¹⁶ increasing hospital use overall^{17,18} while reducing preventable admissions,^{18,19} and reducing bed and activity-limitation days.²⁰ The effects of the SCHIP expansions on eligible children, however, may differ from those of the earlier Medicaid expansions. The children who could qualify for SCHIP have somewhat higher incomes and are more likely to have private insurance. In addition, the scope of coverage, delivery systems, use of premiums, and outreach and enrollment efforts are different. There is a small but growing literature assessing the effects of the SCHIP expansions on insurance coverage, with findings that show reductions in uninsurance, and accompanying reductions in private coverage ranging from a negligible amount to 50% depending on the data source, analytic approach, and year.^{21,22} Recent findings suggest that SCHIP had positive spillover effects on participation in Medicaid.²³ A handful of state-specific studies examined the effects of SCHIP enrollment for children with special health care needs, finding improvements in access to care.^{24,25}

In this article we provide important new information on the effects of the SCHIP expansions nation-

ally on children with chronic health conditions. We focus on the effects of eligibility expansions, as opposed to enrollment in SCHIP, because the expansions represent the policy intervention that is available to the federal government and the states. We use data from the National Health Interview Survey (NHIS) to examine effects on a broad array of outcomes including insurance coverage, use of services, and access to care.

METHODS

Analytic Overview

Our objective was to measure the impact of the SCHIP eligibility expansions on children with chronic health conditions, controlling for temporal trends and other factors that may have affected outcomes in this population of children. We used a pre-post design with a treatment and comparison group. The core treatment group includes children with chronic conditions who were not eligible for public insurance in 1997 but were made newly eligible based on SCHIP eligibility rules in place in 2000 and 2001. The comparison group comprised children with chronic conditions with income slightly higher than the eligibility thresholds who should not have been affected by the SCHIP expansions. It provides the counterfactual estimates of the changes that would have occurred to the treatment group in the absence of the treatment.

We used multivariate techniques to control for differences between the treatment and comparison groups and within each group over time. Linear probability models were estimated for each outcome measure, pooling data from the preimplementation and postimplementation periods. The models included indicators for observations in the treatment group, an indicator for observations in the postimplementation period, and interaction terms between the treatment-group and postperiod indicators, as well as various control measures. The interaction terms capture the effects of being in each treatment group in the postimplementation period, and the estimated coefficients for the interaction terms are the adjusted impacts of the SCHIP expansions.

We examined a variety of outcomes that we hypothesized would be affected by the SCHIP expansions. The primary outcome of interest was insurance status and type of coverage. We hypothesized that public insurance enrollment would increase and that there would be compensating declines in the proportion uninsured and with private insurance. We hypothesized that increased rates of coverage in the treatment group would improve access to care, reduce out-of-pocket expenses, and increase use of generalist and specialty provider services while decreasing use of the emergency department and hospital care. Details on measurement of these outcomes are provided in "Measurement of Outcomes and Control Variables" below.

Data Sources

The primary source of data was the NHIS, a household survey with a sample nationally representative of the civilian, noninstitutionalized US population.²⁶ The NHIS collects data on demographics, income, insurance coverage, health status, access to care, and use of health care services. We used NHIS data from 1997, 2000, and 2001. Substantial changes in the design of the NHIS in 1997 precluded the use of earlier years of data in the analysis. NHIS data were supplemented with county-level measures of private health maintenance organization penetration based on data collected by InterStudy, firm-size distributions from the US Census Bureau's County Business Patterns Survey,²⁷ unemployment rate, and employment by industry were obtained from the Bureau of Labor Statistics,²⁸ and regional data for the average adjusted per-capita cost of Medicare were obtained from the Center for Medicare and Medicaid Services.²⁹

Sample

Our primary sample included children up to 17 years old for whom a chronic health condition was reported on the NHIS. The definition is primarily diagnosis-based; however, the NHIS does not collect comprehensive information on the presence of medical

conditions, and thus we combined data collected through a variety of questions. We included children reported to have been diagnosed as having 1 of several common chronic conditions that appeared on a checklist. These conditions include attention-deficit disorder, mental retardation, Down syndrome, asthma, cerebral palsy, sickle cell, muscular dystrophy, autism, congenital or other heart disease, and diabetes. We also included children reported to have an activity limitation caused by a health condition lasting at least 12 months to capture children with a condition not included on the checklist. We used information from a mental health scale to identify children reported to be unhappy, sad, or depressed most of the time over the prior 6 months as a proxy measure for child depression. Finally, we included children with very low birth weight (<1500 g) and <2 years old, because they have elevated need for monitoring and are at high risk for developmental delays and future chronic medical problems. An estimated 17.9% of children were identified through these mechanisms as having a chronic condition. It should be noted that this definition is broader than the consequence-based definition of children with special health care needs adopted by the Maternal and Child Health Bureau.³⁰ Selected analyses were repeated for the complementary group of children not identified as having a chronic condition.

To identify treatment and comparison groups, we used a detailed algorithm that replicates the eligibility-determination process, incorporating federal and state specific Medicaid- and SCHIP-eligibility rules from a variety of sources.³¹⁻³³ The algorithm models the application of most categorical, income, and resource tests using data from the NHIS to create child- or family-level measures for each relevant eligibility comparison. A detailed description of the algorithm is available from us by request. The comparison group consisted of children with chronic conditions at incomes between 25% and 125% greater than the state-specific SCHIP upper-income thresholds. We also examined children previously eligible according to rules in place as of 1997 but not receiving cash assistance as a potential treatment group. Among children identified as having chronic conditions, 17.6% were in the SCHIP treatment group, 32.1% were in the Medicaid-eligible group not receiving cash assistance, and 14.9% were in the comparison group. The total sample of children with chronic conditions who met the criteria for either the treatment or comparison groups across the 3 years was 3413. The sample sizes in the preimplementation groups are constrained by having a single year of NHIS data, which may limit our ability to detect true effects of the SCHIP expansions.

Measurement of Outcomes and Control Variables

Health Insurance

The NHIS collects data on current health insurance. We created 3 summary measures of insurance coverage: private insurance (employer-sponsored insurance, including those with dependent military coverage, and nongroup insurance), public insurance (Medicaid, SCHIP or other state plans, Medicare, or other government coverage), and uninsurance. The groupings of insurance types were not mutually exclusive, allowing children to report >1 type of insurance, although <1% of the sample reported >1 type of coverage at the time of the survey.

The measures of service use and access to care were drawn from a series of questions in the NHIS. Questions concerning unmet needs for medical, dental, prescription drug, and mental health services were analyzed separately, and a joint indicator was created to capture unmet need for any of the 4 services. Indicators were created for various types of health care service use during the past 12 months based on reported hospital stays, emergency-department visits, and visits with generalist, medical specialty, mental health, or vision care providers. Out-of-pocket spending for the entire family used 4 reported dollar ranges: \$0, \$1 to \$499, \$500 to \$1999, and more than \$2000).

Child, Parent, and Family Characteristics

In the multivariate models we controlled for demographic characteristics of the child, parent, and family. Child characteristics included age, gender, race, ethnicity, and immigration status. We controlled for child health status using 3 indicators for type of chronic health condition: physical, mental health or behavioral, and developmental delay. We controlled for parents' education,

income, and marital status. Income and marital status are important factors in determining eligibility for public insurance and thus control, to some extent, for selection into the treatment and comparison groups. The NHIS collects data on earnings for working adults. We imputed earnings to those workers who did not report a continuous earnings value using a regression-based, hot-deck imputation method known as predictive mean matching.³⁴ The reported and imputed earnings data were used to calculate families' earned income in the eligibility algorithm. The multivariate models also included a continuous measure of earnings in linear and quadratic forms.

To control for the availability and cost of private insurance, we included a predicted value for whether the family would have an offer of employer-sponsored insurance. This predicted value was generated by estimating a multivariate-regression model that included all variables in the SCHIP-impact model, as well as county-level information on the distribution of firms by size and employment by industry, both significant predictors of the likelihood of offers. The estimated coefficients were used to predict the probability of having an offer of insurance based on the observed values for all observations. The multivariate models also included the county unemployment rate, private health maintenance organization penetration, and the Medicare average adjusted per-capita cost to control for area medical care costs. Fixed state effects were included to capture aspects of state policy that might affect outcomes but did not change over time. We included state welfare enrollment rate per 1000 in poverty to capture the stringency of welfare-reform efforts.

The public-use NHIS data did not include the state identifiers needed to link state eligibility rules to individual observations. To access data files with these state indicators, as well as county-level linkages for local area contextual measures, we conducted all analyses at the National Center for Health Statistics' Research Data Center in Hyattsville, Maryland.

All analyses were performed by using Stata software (Stata Corp, College Station, TX). Sample proportions are weighted to national totals. Standard errors (SE) were adjusted to reflect the complex sample design of the NHIS. Because hypotheses for various outcomes were directional, we used a 1-sided test of significance with an α value of .05.

RESULTS

Insurance Coverage

Table 1 presents the estimated impact of the SCHIP expansions on insurance coverage for children with chronic health conditions. For purposes of illustration, we present the baseline proportion of children in each insurance group in the treatment and comparison groups. We compute the change between the pre-SCHIP- and post-SCHIP-implementation periods for each, calculate the change for the treatment groups net of the change in the comparison group, and then present the estimated effect of the SCHIP expansions, adjusted for differences in child, family, and area characteristics. Between the preimplementation and postimplementation periods, there was a 13.4 percentage point increase in public coverage, an 8.4 percentage point decline in private insurance, and a 4.7 percentage point decline in the percent uninsured for children in the SCHIP-eligible treatment group. Relatively smaller changes occurred during this period in the comparison group: a 3.3 percentage point growth in public insurance and a 5.8 percentage point decline in private insurance. When the changes in the comparison group were netted out from the changes occurring for the treatment group, a 10.1 percentage point increase in public coverage and a 6.5 percentage point decline in the uninsured rate remained. The adjusted estimates were similar in magnitude, with a 9.8 percentage point increase in public coverage and a 6.4

TABLE 1. SCHIP Impact on Insurance Coverage for Children With Chronic Health Conditions

Analysis Group	Insurance Type	Distribution of Insurance, Pre-SCHIP Implementation (1997)		Distribution of Insurance Post-SCHIP Implementation (2000/2001)		Unadjusted Change in Insurance, Pre/Post-SCHIP Implementation		Unadjusted Change in Insurance, Pre-Post, Net of Change in Comparison Group		Adjusted Estimate of SCHIP Impact	
		%	SE	%	SE	%	SE	%	SE	%	SE
SCHIP-eligible treatment group	Public	12.2	1.8	25.7	1.9	13.4	2.6*	10.1	3.1*	9.8	3.2*
	Private	68.4	2.7	60.0	2.0	-8.4	3.4*	-2.6	4.1	-2.9	3.9
Pre-1997 Medicaid-eligible treatment group	Uninsured Public	21.3	2.2	16.6	1.6	-4.7	2.7†	-6.5	3.2‡	-6.4	3.3†
	Private	39.1	2.9	54.8	2.1	15.7	3.6*	12.4	4.0*	9.2	3.9†
Comparison group	Uninsured Public	40.6	2.9	31.6	2.2	-9.0	3.6*	-3.2	4.2	-1.8	3.9
	Private	23.3	2.4	17.1	1.7	-6.2	3.0*	-8.0	3.4*	-6.6	3.6†
	Uninsured	5.2	1.3	8.5	1.2	3.3	1.8†				
	Private	91.4	1.6	85.6	1.6	-5.8	2.3*				
	Uninsured	5.2	1.3	7.0	1.2	1.8	1.7				

Insurance measures are not mutually exclusive. Estimates are significant at: * $P \leq .01$; † $.01 < P \leq .05$; ‡ $.05 < P \leq .10$. Source: Authors' analysis of the NHIS, 1997, 2000, and 2001.

percentage point decline in the percent uninsured. The 2.9 percentage point decrease in private insurance was not significant. Comparison of the estimated impact on private insurance to the impact on public coverage suggests that 29% of the increase in public insurance was offset by a decline in private coverage (-2.9 percentage points divided by 9.8 percentage points). To place the magnitude of the effects in context, the 6.4 percentage point reduction represented a 30% reduction in the uninsured rate relative to the 21.3% uninsured rate in 1997, the baseline period. The 2.9 percentage point decline in private coverage represented a 4% decline in private insurance relative to the 68.4% private coverage rate in the baseline period.

Use of Services

As illustrated in Fig 1, we found positive effects for SCHIP-eligible children with chronic conditions on many of the service-use measures we examined; however, all of these results failed to meet standards of statistical significance. For example, there was a 4.5 percentage point increase in the probability of a dental care visit, a 3.8 percentage point increase in the probability of a specialist visit, a 3.3 percentage point increase in the probability of an eye care visit, and a 4.0% decline in the probability of an emergency-department visit, all consistent with our hypotheses. There was an unexpected 4.1 percentage point decline in the probability of a mental health visit. Although the results for the children with chronic health problems are not statistically significant at conventional levels, evidence from parallel analyses on children without chronic health problems suggests that the gains in dental and eye care visits for children with chronic conditions may be real. The estimated effects on use of these services were similar in magnitude for children with and without chronic conditions, but the effects were significant for the larger sample of children without chronic conditions (Table 2).

Unmet Needs

The SCHIP expansions reduced unmet need, particularly for dental care, for children with chronic conditions (Fig 2). There was a 7.4 percentage point decline in unmet dental care needs and an 8.6 percentage point decline in unmet need across all 4 categories. The 3.7 percentage point reduction in unmet prescription drug needs was suggestive ($P = .06$) but not significant by conventional standards. Otherwise, we failed to find significant effects of the SCHIP expansions on the different types of unmet need. These estimated effects are notable because they are significantly larger than the effects estimated for children without chronic conditions, all of which were near zero (Table 2).

Out-of-Pocket Spending

Figure 3 points to a downward shift in the distribution of family out-of-pocket spending on health care associated with the SCHIP implementation in the treatment group. There was a 5.7 percentage

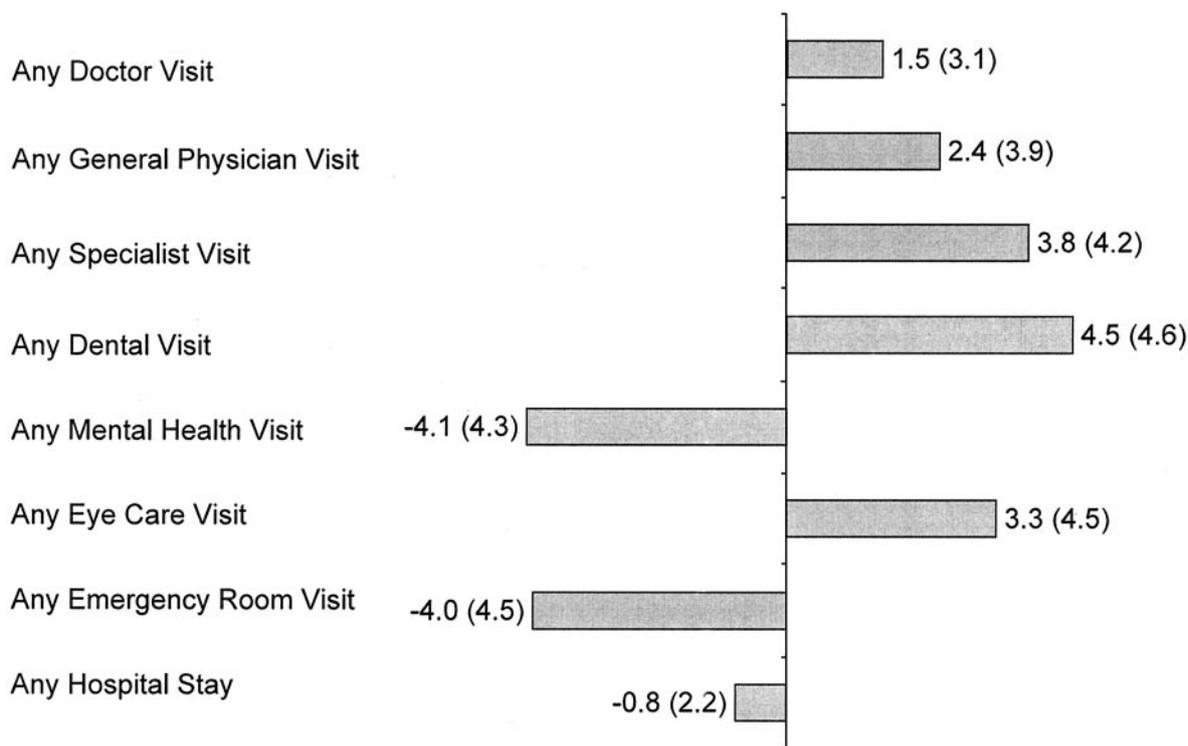


Fig 1. Effects of SCHIP expansions on use of services for the past 12 months, percentage points (SE). Source: Authors' analysis of the NHIS, 1997, 2000, and 2001.

TABLE 2. Selected Impacts of SCHIP Expansions on Children With and Without Identified Chronic Conditions

Type of Impact	Children With Chronic Conditions		Children Without Chronic Conditions	
	Adjusted Effects, Percentage Points	SE	Adjusted Effects, Percentage Points	SE
Use of services				
Dental visit	4.5	4.6	4.4	2.1*
Eye care visit	3.3	4.5	3.8	1.8*
Unmet needs				
Any	-8.6	4.0*	0.8	1.4†
Dental care	-7.4	3.7*	0.1	1.2‡
Prescription drugs	-3.7	2.4	0.0	0.6
Out-of-pocket spending, \$				
≥2000	-1.3	3.9	-0.1	1.8
500-1999	-4.0	5.3	-4.8	2.4*
1-499	3.2	5.3	5.5	2.5*
None	2.2	2.3	-0.6	1.1

Estimates significantly different than zero: * $.01 < P \leq .05$. Estimates significantly different for children with and without chronic conditions: † $.01 < P \leq .05$; ‡ $.05 < P \leq .10$. Source: Authors' analysis of the NHIS, 1997, 2000, and 2001.

point reduction in the likelihood of spending between \$500 and \$1999, a 2.6 percentage point increase in spending between \$1 and \$499, and a 3.4 percentage point increase in the likelihood that the family had no out-of-pocket expenses. These estimated effects were not significant, but there was a similar reduction in out-of-pocket spending observed for the larger sample of children without chronic health conditions that was significant. This result suggests that analysis on a larger sample of children with chronic health conditions would yield definitive evidence of reduced financial burden on families after the SCHIP expansions.

Magnitude of Access and Use Impact

The estimated effects on access and use reflect the impact on the entire group of children who were made eligible under SCHIP, not the impact for the children who actually enrolled. As Table 1 indicates, most children in the SCHIP-eligible group had private coverage in both the baseline and the postimplementation periods. Thus, the impact on the children who gained insurance coverage or who switched from private to public coverage is actually much greater than the estimates presented here. When we consider that the adjusted increase in public cover-

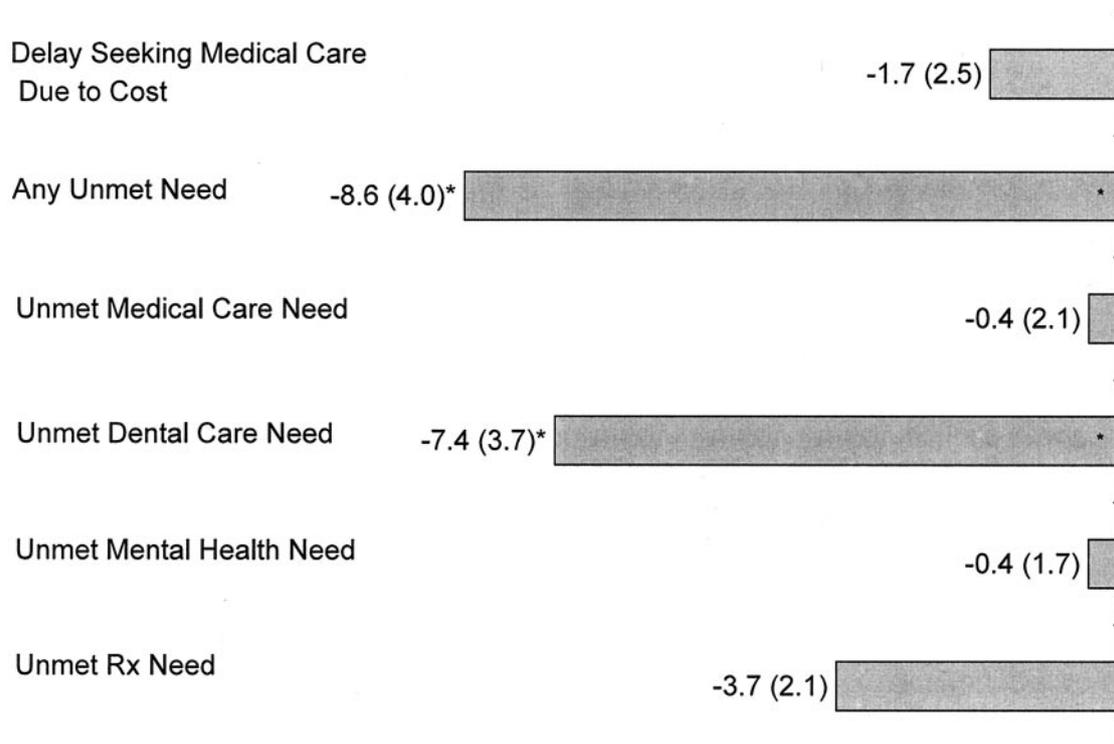


Fig 2. Effects of SCHIP expansions on unmet need for care for the past 12 months, percentage points (SE). Estimates significantly less than zero at $P \leq .05$. Source: Authors' analysis of the NHIS, 1997, 2000, and 2001.

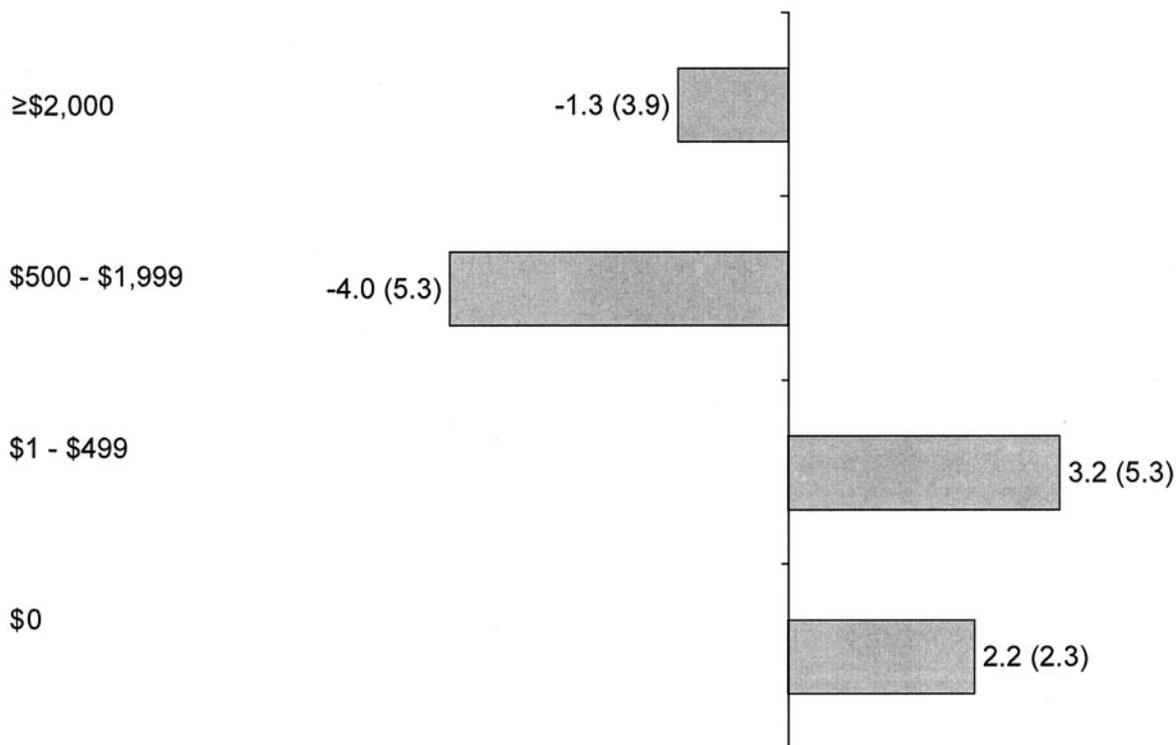


Fig 3. SCHIP effects on family out-of-pocket spending for the past 12 months, percentage points (SE). Source: Authors' analysis of the NHIS, 1997, 2000, and 2001.

age among SCHIP-eligible children was estimated to be 9.8 percentage points (Table 1), a reduction of 7.4 percentage points in unmet need for dental care implies that as many as three quarters of the newly enrolling children may have experienced a reduction in unmet dental need.

Spillover Effects on the Pre-1997 Eligible Group

During the SCHIP-implementation period there were also changes in the distribution of insurance coverage for children eligible for public coverage under rules in place before 1997 but not receiving cash assistance. Adjusted estimates (Table 1) reveal a

9.2 percentage point increase in public coverage and a 6.6 percentage point decline in the uninsured rate. These results suggest a large, positive spillover effect on Medicaid enrollment associated with the SCHIP outreach efforts and the policy that applicants had to be screened for Medicaid eligibility and enrolled in that program first. There were similar effects on access (data not shown), with a 7.4 percentage point reduction in unmet dental care needs and an 8.3 percentage point reduction in unmet need across the 4 services. There was a 9.2 percentage point reduction in the percentage reporting spending between \$500 and \$1999, with an 8.0 percentage point increase ($P = .065$) in the category of spending between \$1 and \$500.

DISCUSSION

This study indicates that the SCHIP expansions reduced rates of uninsurance among children with chronic health conditions who became newly eligible and improved access to selected types of care. The results also suggest enhanced use of some specialty services and reduced use of emergency departments and out-of-pocket spending, but these effects were not estimated precisely. New outreach and enrollment efforts also may have yielded enrollment of a substantial number of children with chronic conditions eligible according to Medicaid program rules in place as of 1997 and had a positive impact on access to care and significant reductions in out-of-pocket spending for that group. However, because the SCHIP expansions occurred contemporaneously with changes in welfare-related Medicaid-enrollment policies, it is not possible to disentangle the effects of the 2 policy initiatives on the pre-1997 Medicaid-eligible group.

The effects on insurance coverage indicate that SCHIP reduced uninsurance rates in the SCHIP-eligible target group of children with chronic conditions by increasing public coverage, with relatively little loss of private insurance. The small decline in private coverage may be due to a variety of reasons including the presence of waiting periods for a large proportion of SCHIP income-eligible children³⁵ and the reluctance parents feel about allowing their children with chronic conditions to be uninsured for even limited amounts of time.¹⁰ Alternatively, mandatory managed care arrangements in many SCHIPs may discourage parents from dropping preexisting private insurance out of a desire to maintain existing provider relationships.

Dental care was an area in which we found pronounced access effects, with a reduction in unmet dental care need and large although imprecisely estimated increase in dental care visits. Receipt of dental care is highly sensitive to the presence of dental coverage,³⁶ and dental insurance is much less prevalent among low-income privately insured populations.³⁷ Several state-specific studies examining SCHIP impact on dental care have found positive effects for the children who enroll in SCHIP.^{38–40} Because uninsured children with chronic conditions may have a particularly difficult time accessing dental care because of the scarcity of providers able to

manage their special physical and behavioral needs, it is not surprising that new enrollment in SCHIPs led to reduced unmet need and increased use of dental care services.

It is important to note that the estimated impacts represent a national average. Children in some states may experience dramatic improvements, whereas children in other states may see limited changes. In particular, more research is needed to assess the extent to which alternative delivery systems under SCHIP facilitate or impair access for children with chronic conditions and whether the reduced scope of services in separate SCHIPs limits the gains experienced by newly enrolled children with chronic conditions.⁸ Only a handful of states have developed special programs or supplemental service packages for children with chronic health conditions.^{9,10} Moreover, some managed care systems, which are common in SCHIPs, may lack extensive care coordination, which could create confusion and limit access for these children.⁴¹ Thus, states may need to reconfigure delivery systems to improve access under SCHIP.

This study has a number of limitations. It relies on household survey data with self- or parent-reported information. Reporting errors could reduce the ability to distinguish between groups defined by eligibility, insurance, and health status. For example, the study is designed such that there should be little public coverage reported within the treatment group during the preimplementation period, because relatively few children would receive Medicare or other government coverage and little public coverage in the comparison group in either the pre-SCHIP or post-SCHIP period. However, we find that 12% of children in the treatment group and 5% of children in the comparison group reported public insurance coverage in 1997. Some of the children may be eligible for Medicaid through the Medically Needy program, which allows higher-income children to qualify if they meet eligibility income thresholds after out-of-pocket expenses are subtracted from income. The remainder may reflect measurement error in reported income or insurance coverage or error in the eligibility algorithm. Incorrect assignment of children to the treatment and comparison groups will bias the estimated SCHIP impact downward, and thus our findings may understate the true effects.

The study is also limited in that the NHIS access-to-care and service-use measures are applicable to children generally but do not include special services that are of particular value to children with chronic health conditions. These children need and use various case-management and care-coordination services, special equipment, and special transportation services. These services are not captured on the NHIS; thus, our study would not be able to capture effects of SCHIP enrollment on access to these services.

Despite the significant decrease in the proportion of children without insurance, many newly SCHIP-eligible children with chronic conditions did not enroll. In particular, 16.6% of SCHIP-eligible children with chronic conditions were uninsured during the

2000/2001 period (Table 1). Evidence from 2001 suggests that 91% of all low-income uninsured children with special health care needs have parents who say that they would enroll their child in Medicaid or SCHIP if told that their child was eligible for coverage.⁴² However, many parents have not heard of the separate SCHIP in their state, do not know that their child is eligible for coverage, or think that the Medicaid and SCHIP application processes are difficult. Furthermore, maintaining enrollment of eligible children requires periodic action on the part of parents, and many states have failed to simplify the SCHIP reenrollment process.^{43,44} Thus, to build on the successes documented here, additional targeted efforts at outreach to children with chronic illness may be necessary, as well as special assistance to keep children enrolled.

Over the past 3 years, constraints on state budgets associated with the poor economy have forced states to roll back eligibility expansions or cap enrollment, reduce outreach efforts, and reinstitute complex application procedures to reduce enrollment.^{45,46} Although most of these policy changes have been targeted at adults, enrollment caps have been used for SCHIP,^{47,48} and children with chronic conditions have been subjected to these policies without special protections. Although the estimated effects of the SCHIP expansions on access for the children made newly eligible for coverage are relatively small, there is mounting evidence that the effects for the children with chronic conditions who actually enroll are substantial.^{25,49} Failure to protect these gains could be devastating for those children who have benefited from the SCHIP expansions.

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