Recent Trends in State Children’s Health Insurance Program Eligibility and Coverage for CSHCN

abstract

OBJECTIVE: Policy makers and physicians need to understand recent trends in State Children’s Health Insurance Program (SCHIP) eligibility and coverage given the ongoing debate on SCHIP. Although many studies have examined these issues, few have focused on children with special health care needs (CSHCN). With this study we aimed to fill this gap in the literature.

METHODS: Data on state-specific SCHIP eligibility criteria were merged with the National Survey of Children With Special Health Care Needs to determine SCHIP eligibility and coverage in 2001 and 2005. In addition to descriptive analysis, a multilevel analysis was performed to identify personal and state-level factors that significantly affected uninsurance among the SCHIP-eligible CSHCN.

RESULTS: Our analyses showed that there was a slight increase in SCHIP eligibility for CSHCN between 2001 and 2005 (8.44% vs 9.83%; P < .05, χ² test). Among the SCHIP-eligible CSHCN, we found a substantial decrease in the uninsurance rate from 21.15% in 2001 to 10.87% in 2005 (P < .05, χ² test). After controlling for covariates, our analyses indicated that CSHCN in 2005 were 57% less likely to be uninsured than those in 2001. Our multilevel analysis also identified state policies that significantly affected uninsurance among the SCHIP-eligible CSHCN, including asset tests (positive effects) and presumptive eligibility (negative effects).

The past 2 decades have witnessed a dramatic increase in public health insurance for children, including Medicaid expansions in the late 1980s and implementation of the State Children’s Health Insurance Program (SCHIP) in the late 1990s. Despite this achievement, concerns about recent turbulence in the economy, ongoing declines in private coverage, and the number of children remaining uninsured have sparked a national debate over future strategies for covering children, as evidenced by the struggle over SCHIP reauthorization, including 2 presidential vetoes in 2007. The debate on SCHIP took a new turn in February 2009 when President Obama signed into law a bill to reauthorize and expand SCHIP to an additional 4 million children. In particular, President Obama considered expanding the program as “the first step” toward fulfilling a campaign pledge to provide insurance for all Americans. To achieve universal health coverage for all Americans, including children, policy makers and physicians need to understand recent trends in SCHIP eligibility and coverage. Although many studies of SCHIP have examined these issues, few have focused on children with special health care needs (CSHCN) (see ref 2 for detailed definition), a group of children who are especially vulnerable in the current health insurance systems. Among the published studies that examined SCHIP eligibility for CSHCN, mixed results have been reported. For example, the proportion of CSHCN eligible for SCHIP in 2000 ranged from 7.5% to 16.8%. The literature has also reported on SCHIP coverage for CSHCN in the early years of SCHIP implementation. Yu et al found that most SCHIP-eligible CSHCN were actually enrolled in SCHIP, and ~20% of SCHIP-eligible CSHCN were uninsured in 2000. That was a relatively small proportion compared with those in other studies, which have reported that 36% of all SCHIP-eligible children were uninsured.

After a decade of SCHIP implementation, a question naturally arises as to how SCHIP eligibility and coverage have changed over the years. A number of studies have addressed this question and commonly concluded that (1) SCHIP eligibility was expanded after 2000 and (2) there are still large numbers of children who were SCHIP eligible but uninsured. Although these studies have provided updated information about SCHIP, none of them have focused on CSHCN. It is important to study SCHIP eligibility and coverage for CSHCN, because meeting the needs of CSHCN has been an important public health objective for the nation as indicated by Healthy People 2010. In particular, the federal Maternal and Child Health Bureau has established as a key priority that “families of CSHCN will have adequate private and/or public insurance to pay for the services that they need.” With this article we aim to provide new information about these issues. Using national data sets, we tested 2 hypotheses: (1) the proportion of SCHIP-eligible CSHCN increased between 2001 and 2005; and (2) the proportion of CSHCN who were SCHIP eligible but uninsured decreased in the study period of 2001–2005. In particular, regarding hypothesis 2, we examined if the proportion of CSHCN who were SCHIP eligible but uninsured was lower in those states with simplified application and enrollment procedures.

METHODS
Data
National Survey of Children With Special Health Care Needs
We used 2 waves of the National Survey of Children With Special Health Care Needs (NS-CSHCN) (see ref 12 for details of the survey). It is worth noting that each wave of the NS-CSHCN was conducted in a 2-year period, with the first wave conducted in 2000–2001 and the second wave conducted in 2005–2006. We dropped the observations with missing values of family income (8.9%), because dropping those observations resulted in a small difference compared with results when using separate files of the NS-CSHCN with imputed income values.

Data on States’ SCHIP Policies
Data on SCHIP policies were obtained from the Kaiser Commission on Medicaid and the Uninsured, which has conducted an annual national survey since 2000 to collect information about the type of SCHIP programs, eligibility rules, and enrollment and renewal procedures for children and families in the 50 states and the District of Columbia. The survey was conducted through extensive telephone interviews with state Medicaid and SCHIP program administrators each summer since 2000. The survey results are published online for public use and have been analyzed by many studies of health insurance coverage for children. Information from the 2000 and 2005 survey are used for this study.

Data on SCHIP Eligibility Criteria
We gathered state-specific eligibility criteria according to children’s age and family income from the National Governors Association in 2000, the time that the first wave of the NS-CSHCN was conducted. We also obtained from the National Academy for State Health Policy information about SCHIP eligibility criteria according to age, income, and state in 2005, the time that the second wave of the NS-CSHCN was conducted.

Defining SCHIP Eligibility for CSHCN
To define SCHIP eligibility for CSHCN in this study, we first considered pri-
vately insured children as not eligible for SCHIP as mandated by Title XXI of the Social Security Act. Then, we applied the above-listed SCHIP eligibility criteria to the NS-CSHCN data. Two issues arose with this application procedure. First, each wave of the NS-CSHCN was conducted during a 2-year period, and the public-use files do not indicate the year in which each child was surveyed. For example, we know the second wave of the NS-CSHCN was conducted from 2005 to 2006, but we do not know whether a child was interviewed in 2005 or 2006. Thus, the eligibility criteria we merged to the NS-CSHCN reflect an approximation of SCHIP eligibility for CSHCN during the period of 2000–2001 and 2005–2006. For simplicity and to be consistent with other studies that have used the NS-CSHCN data, we refer hereafter to SCHIP eligibility in 2001 and 2005.

Second, the NS-CSHCN reported family-income categories rather than continuous family-income measures. As a result, a number of age and income eligibility bounds from the above-listed SCHIP eligibility criteria did not match the details provided in the NS-CSHCN data set. In Georgia, for example, the group of children between the ages of 1 and 5 years with family income between 133% and 235% of the federal poverty level (FPL) were eligible according to the State’s SCHIP policy in both 2000 and 2005. Most of this income interval (133%–199%) was identified by the NS-CSHCN; a small part of it (200%–235%) could not be identified, because the next NS-CSHCN income interval was 200% to 300% of the FPL. Across all states, the unmatched income intervals resulted in ambiguous eligibility determination for 3.4% and 2.8% of all the CSHCN interviewed during the first and second waves of the NS-CSHCN, respectively. Following published studies (see more details of those studies in refs 3 and 5), we used the following probabilistic method to categorize eligibility for the children in the unmatched income intervals. We assumed that children were uniformly distributed over the unmatched income intervals and that income was independent of all other characteristics in the interval. Then, the probability that a child was eligible is proportional to the size of the ambiguous interval. For the case of Georgia, each survey participant with income from 200% to 300% of the FPL was assumed to be eligible with a probability of

\[
P(\text{eligible}) = \frac{200}{200} = \frac{200}{300} = \frac{200}{200} = 0.3333333333333333
\]

Conceptual Framework and Variables

To test the above-listed hypotheses, we used the Andersen behavioral model of health care-seeking behavior.22,23 It covers predisposing, need, enabling, and system factors. In this study, predisposing factors included child’s age, gender, race, highest education level of anyone in the household, and the language used for the interview. Need factors included type of special need (ie, prescription drug, more health care, disability services, specialty therapy, and emotional/behavioral counseling) as identified by the CSHCN screener (see ref 24 for detailed information) and number of CSHCN within the household. Enabling factors included income as a percentage of FPL and place of residence as indicated by metropolitan statistical area. System factors included state SCHIP policies such as (1) type of SCHIP program (Medicaid expansion, separate SCHIP program, or a combination of both), (2) simplified application procedures (eg, joint application for Medicaid and SCHIP, no face-to-face interview, no asset test, and presumptive eligibility), (3) whether income verification was required at enrollment, and (4) whether the child was guaranteed 12 months of continuous eligibility.

Statistical Analyses

We performed both descriptive and multilevel analyses by using Stata (Stata Corp, College Station, TX). First, to assess recent trends in SCHIP eligibility for CSHCN, a \( \chi^2 \) test was conducted to determine if the difference in SCHIP eligibility between 2001 and 2005 was statistically significant. Then, to test hypothesis 2, we restricted our study sample to those CSHCN who were eligible for SCHIP in either 2001 or 2005. Using the restricted sample, we conducted a descriptive analysis of the proportion of CSHCN who remained uninsured. We used the variable of uninsurance from the NS-CSHCN to indicate being uninsured at the time of survey interview. Statistical significance of the difference in the proportion between 2001 and 2005 was determined by a \( \chi^2 \) test. Because our independent variables included both personal and state-level factors, we also specified a multilevel model to investigate factors that significantly affected the uninsurance rate among the SCHIP-eligible CSHCN.

RESULTS

Our analysis shows that there is a slight increase in SCHIP eligibility for CSHCN between 2001 and 2005 (8.44% vs 9.83%; \( P < .05 \), \( \chi^2 \) test).

As Fig 1 shows, among the SCHIP-eligible CSHCN, we found a significant decrease in the uninsurance rate from 21.15% in 2001 to 10.87% in 2005 (\( P < .05 \), \( \chi^2 \) test). After controlling for predisposing, need, enabling, and system factors, our analysis indicates that the CSHCN in 2005 were 57% less likely to be uninsured than those in 2001, as shown in Table 1.

Table 1 also summarizes the logistic models, indicating factors that significantly affected uninsurance among the SCHIP-eligible CSHCN. Among predisposing factors, children between 6 and 12 years of age were less likely to
be uninsured than children younger than 5 years, whereas teenagers had a higher probability of being uninsured. Children from households in which everyone’s education level was below high school were less likely to be uninsured than those children from households with someone who had received a high school education. Compared with children from households in which English was the language used during the interview, children whose families used other languages were 91% more likely to be uninsured. For enabling factors, income was significantly associated with uninsurance, with individuals from households with lower income less likely to be uninsured than those with incomes higher than 200% of the FPL. Among need factors, CSHCN with disability or limitation were 62% more likely to be uninsured than those CSHCN who needed prescription medicine. In terms of system factors, Table 1 shows that the uninsurance rate was significantly affected by 2 state policies: asset tests and presumptive eligibility. Those CSHCN who are from a state that required an asset test at SCHIP enrollment were more likely to be uninsured. Those CSHCN who are from a state that had presumptive eligibility were less likely to be uninsured.

DISCUSSION

Although there was a slight increase in the proportion of CSHCN who were eligible for SCHIP between 2001 and 2005, we found that the uninsurance rate among the SCHIP-eligible CSHCN dropped by nearly one half during the study period. In 2001, SCHIP was still a very young program in most states, whereas it had become relatively mature by 2005. Thus, the reduction in the uninsured rates among CSHCN between 2001 and 2005 closely corresponds to the maturing of SCHIP. The reduction in SCHIP-eligible uninsured CSHCN was confirmed by our multivariate analysis in which we controlled for a wide range of socioeconomic characteristics of CSHCN and their families.

Our study provides the first, to our knowledge, national estimate of trends in SCHIP eligibility and coverage for CSHCN. It is useful to compare our results with the trends reported by other researchers, although those published studies did not focus on CSHCN. Our finding of a reduced uninsurance rate is consistent with the study by Hudson and Selden, who analyzed the Medical Expenditure Panel Survey and reported that the number of children who were eligible for Medicaid or SCHIP but uninsured fell from 2001 to 2005. Authors of other studies have also reported a reduction in the number of SCHIP-eligible but uninsured children.

This study relies on national survey data and has a number of notable limitations. As pointed out by Selden et al, “no survey or eligibility simulation is complete. Each survey or eligibility simulation should be interpreted with caution.”

First, when the second wave of the NS-CSHCN was conducted in 2005–2006, Tennessee dramatically changed its

![FIGURE 1](uninsured_rate_sCHIPeligible.png)

Uninsured rate among SCHIP-eligible CSHCN, 2001 and 2005 (P < .05, χ² test).
SCHIP program and did not cover any child. Consequently, our results did not reflect the SCHIP eligibility and coverage after Tennessee restored its SCHIP program in 2007. Second, as described above, the public-use files from the NS-CSHCN do not indicate in which year the child was surveyed, and as a result, the above-listed SCHIP eligibility criteria applied to the NS-CSHCN in this study approximately reflected SCHIP eligibility for CSHCN in the periods of 2000–2001 and 2005–2006. Finally, we applied the state-level eligibility criteria according to age, income, and year, which matched with most data of the NS-CSHCN. However, that was not a perfect match, because the income level of ~3% of the CSHCN interviewed in each wave of the NS-CSHCN did not match precisely with the eligibility criteria. Finally, although we examined some important state SCHIP policies, other policies were not included in our analysis because of unavailable data for the study period, such as income disregards, which refers to the states’ policies regarding whether certain types or amounts of income will be counted or exempted in determining income eligibility. It remains an interesting topic for future studies to examine how state policies of income disregards affect enrollment of CSHCN in SCHIP.

Our results show the relatively stable SCHIP eligibility for CSHCN and the reduction in uninsurance among the SCHIP-eligible CSHCN and have important policy implications in “a time of great possibility in the realm of children’s health insurance.” In the wake of President Obama’s inauguration and the Democrats’ increased majorities in both houses of Congress, legislative leaders moved quickly to break the political stalemate over SCHIP expansion, and on February 4, 2009, President Obama signed the Children’s Health Insurance Reauthorization Act of 2009 to reauthorize and expand SCHIP. The empirical evidence found by our study supports renewal of SCHIP so that CSHCN can have continued eligibility and the reduction in their uninsurance rate can be sustained.

Despite our finding that ~10% of the SCHIP-eligible CSHCN were uninsured in 2005, this group clearly includes some of the most disadvantaged children in the United States; numerous studies have reported that CSHCN require continuing care both at home and from the formal health care system and incur higher medical expenditures than other children. In particular, we found that those CSHCN whose families speak languages other than English were more likely to remain uninsured. They should be targeted by specific outreach efforts to help them get enrolled.

Our analysis also indicates that the uninsurance status is strongly related to state policies. We found that an asset test at SCHIP enrollment is positively related to uninsurance, whereas presumptive eligibility is negatively related to uninsurance. These findings have important policy implications. States may want to review and revise their SCHIP policies to help enroll uninsured CSHCN. In particular, in 2005 there were only 3 states (Oregon, South Carolina, and Utah) that still required asset tests at the time of SCHIP enrollment and only 7 states that offered presumptive eligibility (California, Illinois, Massachusetts, Michigan, Missouri, New Jersey, and New York).

Our results suggest that asset tests should be changed, because they may significantly impede enrollment in SCHIP for CSHCN. Conversely, on the basis of our results, presumptive eligibility may facilitate enrollment in SCHIP for CSHCN, and its adoption could help expand SCHIP participation substantially.

CONCLUSIONS

Our results show the dramatic decrease in the uninsurance rate among SCHIP-eligible CSHCN as the SCHIP program matured from 2001 to 2005. Our results also identify important state policies that significantly affect the uninsurance rate, including asset tests (positive effects) and presumptive eligibility (negative effects).

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REFERENCES

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