
Role of SCHIP in Serving Children with Special Health Care Needs

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The purpose of this article is to provide new information about two policy issues: (1) Is the State Children's Health Insurance Program (SCHIP) an important source of health insurance for children with special health care needs (CSHCN)? and (2) Does SCHIP provide CSHCN with better access to care, compared with other insurance coverage? Using the 2001 National Survey of CSHCN, we found that a limited fraction of CSHCN were eligible for SCHIP while a relatively small proportion of SCHIP-eligible CSHCN were uninsured. Access to care for CSHCN under SCHIP was better than those SCHIP-eligible but uninsured, and similar to those income-eligible for SCHIP but privately insured.

INTRODUCTION

The enactment of SCHIP in 1997 significantly expanded public insurance coverage for children of low-income families. Numerous studies have confirmed the positive effect of SCHIP both on extending coverage to children living near poverty, and on improving access to care for those enrolled (Shenkman et al., 1997; Keane et al., 1999; Holl et al., 2000; Dubay, Hill, and Kenney, 2002; Feinberg et al., 2002; Dick et al., 2003). Few studies, however,

have examined the role of SCHIP with respect to CSHCN (McPherson et al., 1998) although some researchers have recognized SCHIP's potential for improving access to care for CSHCN (Holahan et al., 2000; Newacheck et al., 2000; Schwalberg, Hill, and Mathis, 2000). A number of studies noted that within New York, Florida, and Kansas, CSHCN have increased access to and satisfaction with health care after SCHIP enrollment (Dick et al., 2004; Szilagyi, 2003; Szilagyi et al., 2004). Other qualitative studies of CSHCN and SCHIP have noted problems in some States with respect to provider availability and service authorization (Fox, McManus, and Limb, 2000; Hill et al., 2001). Little is known at the national level, however, about the role of SCHIP with respect to CSHCN. One recent study (Davidoff, Yemane, and Hill, 2004) focusing on this topic tended to overestimate the SCHIP eligibility as it did not exclude those privately insured children, while another article (Davidoff, Kenney, and Dubay, 2005) focused on access to care by the entire group of SCHIP-eligible children, not those who actually enrolled.

For policymakers concerned with insurance coverage for CSHCN, this article provides new information about two important questions: (1) Is SCHIP an important source of health insurance for CSHCN? and (2) Do CSHCN have better access to care while enrolled in SCHIP than the uninsured CSHCN or the privately insured CSHCN? We examine these questions by carefully defining SCHIP eligibility and insurance coverage in a large national sample of CSHCN, and then by assessing

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unmet needs and parents' satisfaction with care for CSHCN by their eligibility and insurance status.

METHODS

Data Source

This study analyzed public-use datasets from the first National Survey of Children with Special Health Care Needs (NSCSHCN), which was conducted by the National Center for Health Statistics from October 2000 to April 2001. It was designed to collect information about the prevalence of CSHCN, the health insurance coverage they have, the health services they use, and the impact of their health conditions on the family (Blumberg et al., 2003). For the first time, this information is available at the State level, and was collected in a manner that allows comparisons both at the national level and across States. First, a random sample of 196,888 households with children under age 18 was selected across the country. Then, all children in each selected household were screened for special health care needs, using the CSHCN Screener, which includes five stem questions on general health care needs (Bethell et al., 2002). Each of the stem questions has two followup questions to screen for chronic health conditions. Those who affirmatively answer one of the stem questions and its two followup questions are considered to have a special health care need (Bethell et al., 2002).

Finally, in each screened household, a detailed interview with the parents or guardian was conducted for one randomly selected CSHCN. There were 38,866 interviews completed. Overall, the survey achieved a national household completion rate of 94.59 percent and a child-level CSHCN screener completion rate of 77.2 percent.

Quality control efforts taken by the survey organizers warrant emphasis. In particular, to verify reliability of the data collected, they conducted detailed analysis of children's insurance status by comparing this survey and other national surveys (Blumberg et al., 2004). While they admitted that the estimate of uninsurance by the NSCSHCN was lower than that by other national surveys, they concluded that the questionnaire design differences explain much of the discrepancy. Their analysis also suggested that the child-level estimate of insurance status by the NSCSHCN could be more accurate than those generated from other national surveys, although a definitive conclusion regarding the relative accuracy of survey-based uninsurance rates is not possible.

Definition of SCHIP Eligibility

Title XXI of the Social Security Act allows States to have a great deal of flexibility in the design and implementation of SCHIP, resulting in considerable difference in both the type of SCHIP and in eligibility criteria across States. In terms of type of SCHIP, 16 States and the District of Columbia had chosen to expand their existing Medicaid Programs by 2001, 16 States had created separate SCHIP programs, and the remaining 18 States implemented a combination of these two approaches (U.S. Department of Health and Human Services, 2002). In terms of SCHIP eligibility, there were substantial differences by children's age and family income across States. We gathered State-specific eligibility criteria by children's age and family income from the National Governors Association Center for Best Practices (2001), which summarized and distinguished the Medicaid and SCHIP eligibility levels as of October 1, 2000 (the time that the NSCSHCN started). For three States (Arkansas, Rhode Island, and

Wyoming), for which the previous document was incomplete, eligibility levels for Arkansas, Rhode Island, and Wyoming were obtained from the Web site of the U.S. Department of Health and Human Services (1998a;1998b; and 2000).

The NSCSHCN public use data report family income categories rather than continuous family income measures. As a result, of a total of 204 age and income eligibility bounds in 50 States and the District of Columbia, there were 38 that did not match the details provided in the NSCSHCN public-use dataset. In Georgia, for example, the group of children between age 1-5 with family income between 133-235 percent of the Federal poverty level (FPL) were eligible according to the State's SCHIP policy. Most of this income interval—133-199 percent—was identified by the NSCSHCN, a small part of it—200-235 percent—could not be identified because the next NSCSHCN income interval was 200-300 percent of the FPL. Across all States, the unmatched income intervals resulted in ambiguous eligibility determination for 1,332 CSHCN, or 3.4 percent of all the CSHCN interviewed. We used the following probabilistic method to categorize eligibility for these children. 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 observation with income from 200-300 percent of the FPL was assumed to be eligible with a probability of $0.35 = (235-200)/(300-200)$. We adjusted the weights accordingly. We also defined upper and lower bounds for eligibility to determine the sensitivity of our results to our method. Our upper bound method expands the State's actual eligibility levels to the broader NSCSHCN income classification, thereby classifying

too many children as income-eligible (e.g., for Georgia, from 200-235 percent of the FPL to 200-300 percent of the FPL to match the NSCSHCN). Our lower bound approach shrinks the State's actual eligibility thresholds to the narrower NSCSHCN income classification, thereby classifying too few children as eligible (e.g., for Georgia, the State's upper limit was reduced to no more than 200 percent of the FPL). We estimate that nationally 7.5 percent of CSHCN were SCHIP-eligible using our probabilistic approach, with an upper bound of 7.9 percent and a lower bound of 7.2 percent.

IDENTIFYING CSHCN

As mandated by Title XXI of the Social Security Act, privately insured children were not eligible for SCHIP. Consequently, in this study, the privately insured CSHCN were included in the denominator for estimating the fraction of all children who were SCHIP-eligible¹. On the other hand, we applied the previously discussed eligibility guidelines to identify CSHCN who were income-eligible but privately insured, and used this group for comparison with those enrolled in SCHIP in terms of access to care.

Insurance Status

As acknowledged by the survey organizers (Blumberg et al., 2003), this study was not intended to compare SCHIP with Medicaid using the survey data, but to focus on those CSHCN who were eligible for SCHIP. In particular, this article used the distinction in insurance status among the SCHIP-eligible CSHCN (SCHIP-eligible but uninsured, SCHIP enrolled, SCHIP-eligible but enrolled in other public

¹ If the privately insured CSHCN were dropped from the estimation instead of being included in the denominator, the proportion of CSHCN eligible for SCHIP would be overestimated.

insurance, income eligible for SCHIP but enrolled in private insurance) as a way to operationalize the Andersen (1995) Behavioral Model of health care seeking behavior, and examined this distinction as a factor associated with unmet needs and parents' satisfaction with care.

In this study, the uninsurance referred to being uninsured for the past 12 months; the SCHIP-enrolled children included children who were eligible for SCHIP and reported by their parents as having Medicaid or SCHIP because these two programs shared the same names in some States; other public insurance was defined as one that "...could not be classified reliably as Medicaid or SCHIP, but was clear from the survey response that it was publicly obtained..." (Blumberg et al., 2003).

Statistical Analysis

Data analyses were conducted using STATA® Version 8.0 (StataCorp, 2003) to appropriately account for the survey design used in the NSCSHCN. In addition to descriptive analysis, two multivariate logistic analyses were performed, with one analyzing unmet needs, and another estimating parents' satisfaction with care to test the hypothesis that access to care for the SCHIP-enrolled CSHCN is better than those SCHIP-eligible, but uninsured and similar to those income-eligible for SCHIP, but privately insured. The dichotomous unmet needs variable was derived from a question in the NSCSHCN, asking the parents: "In the past 12 months, have you delayed or gone without health care for your child?" Contrary to a two-part question of unmet needs (i.e., did your child need health care? and if so, did your child get it?) commonly used in household surveys, the NSCHCN asked the parents one single question if they delayed or went without health care for their child. That was

probably because the question was asked to parents of CSHCN, who have special needs typically lasting at least 12 months.

The variable of parents' satisfaction with health care was also from the NSCHCN, which used the Consumer Assessment of Health Plans Study (CAHPS®) satisfaction measures (Agency of Healthcare Research and Quality, 2006) to interview the parents, and was recoded in this study as satisfied if the parents responded by saying very satisfied or somewhat satisfied with their child's health care, and unsatisfied if the parents reported to be somewhat unsatisfied or very unsatisfied.

Following the Andersen (1995) Behavioral Model of health care seeking behavior, we classified the independent variables into three categories: (1) predisposing factors, such as age, sex, race, mother's education, and the language used for the interview; (2) need factors, including type of special need as identified by the CSHCN screener, and number of CSHCN within household; and (3) enabling factors, including income as percentage of the FPL, place of residence as indicated by the metropolitan statistical areas, health insurance status, and type of SCHIP in the State. (Information available on request from author.)

RESULTS

Eligibility and Insurance Status

We estimated that 7.5 percent of all CSHCN, or 684,755, were eligible for SCHIP in 2000. Our analysis indicated that, among those CSHCN eligible for SCHIP (income-eligible and not privately insured), 72.8 percent were actually enrolled in SCHIP, 6.5 percent were enrolled in other public programs, and 20.7 percent, or 141,464 nationally, were uninsured.

Table 1
Prevalence of Unmet Needs Among CSHCN, by Insurance Status: 2001

Measure	Reporting Unmet Needs				N
	SCHIP	SCHIP-Eligible But Uninsured	SCHIP-Eligible But Enrolled in Other Insurance	Income-Eligible But Privately Insured	
			Percent		
Health Care					
Delayed/Foregone Health Care in the Past 12 Months	14.4	47.7***	11.3	12.1	7,456
Received All Needed Routine Preventive Care	5.6	30.8***	3.1	4.2	5,152
Received All Needed Care from Specialist	13.3	34.5***	7.2	6.2***	3,806
Received All Needed Dental Care Including Check-Ups	18.7	42.3***	10.7	14.2	5,675
Received All Needed Prescriptions	2.7	17.3***	1.0	1.8	6,484
Received All Needed Therapy	9.5	30.9*	6.7	11.7	1,801
Received All Needed Mental Health Care	18.7	46.8***	23.2	16.9	2,051
Received All Needed Substance Abuse Treatment	18.1	69.9***	16.7	21.1	175
Received All the Home Health Care Needed	1.4	11.0**	6.9	5.0	404
Aids					
Received Eyeglasses and All Needed Vision Care	5.0	26.3***	6.9	9.8*	2,768
Received All Needed Hearing Aids and Hearing Care	9.3	21.0	13.1	13.7	544
Received All Needed Mobility Aids or Devices	9.2	16.9	1.4	11.7	376
Received All Needed Communication Aids or Devices	14.7	35.5	32.9	37.9	150
Received All Needed Medical Supplies	7.0	20.2*	2.0	1.5*	1,867
Receive All Needed Medical Equipment	3.9	31.5***	3.2	3.0	759
Coordination and Counseling					
Receive All Needed Professional Care Coordination	19.1	57.3**	13.4	15.1	956
Receive All Needed Respite Care	21.2	64.9***	29.1	19.8	711
Receive All Needed Genetic Counseling	19.0	62.0***	18.3	22.4	554
Receive All Needed Mental Health Care/Counseling	18.9	61.4***	25.5	24.5	1,031

*P<0.05.

**P<0.01.

***P<0.001.

NOTES: CSHCN is children with special health care needs. SCHIP is State Children's Health Insurance Program. Compared with SCHIP: χ^2 test.

SOURCE: Yu, H. and Dick, A., RAND Corporation, and Szilagyi, P., University of Rochester School of Medicine and Dentistry: Analysis of the 2001 National Survey of CSHCN.

Unmet Health Care Needs

Nearly one-half of CSHCN who were SCHIP-eligible but uninsured reported some unmet needs, significantly higher than those CSHCN enrolled in SCHIP (47.7 versus 14.4 percent). Furthermore, for 15 out of 18 detailed questions about whether or not they received needed care, the prevalence of unmet needs was significantly higher among those CSHCN who were eligible for SCHIP, but uninsured compared with those CSHCN enrolled in SCHIP (Table 1).

There was no significant difference between those covered by SCHIP and those income-eligible, but privately insured in terms of a general question about unmet needs (14.4 versus 12.1 percent). For 9 of

the 18 detailed questions, CSHCN enrolled in SCHIP had fewer unmet needs than those insured privately. However, the percentage of SCHIP enrollees who did not receive all needed specialist care, was double that for those having private coverage (13.3 versus 6.2 percent).

Parents' Satisfaction with Care

As shown in Table 2, fewer parents of the SCHIP-eligible but uninsured CSHCN reported satisfaction with care compared with parents whose children were enrolled in SCHIP, but the difference was not significant (77.7 versus 89.8 percent). The uninsured were less satisfied than the SCHIP enrollees for all the six detailed measures of parents' experience with care, but the

Table 2
Parents' Experience with Care Among CSHCN, by Insurance Status: 2001

Measure	Reporting Unmet Needs				N
	SCHIP	SCHIP-Eligible But Uninsured	SCHIP-Eligible But Enrolled in Other Insurance	Income-Eligible But Privately Insured	
			Percent		
Overall Care					
Satisfaction with Care	89.8	77.7	94.3	91.3	2,962
Child's Health Care Easy to Use	70.3	52.9*	65.8	74.6	2,924
Provider Interaction					
Doctor Often Spent Enough Time	76.8	72.5	80.3	83.1*	7,103
Difficulty Getting Doctor to Listen	83.1	80.2	87.4	87.2	7,121
Providers Sensitive to Family Values/Customs	81.9	77.1	88.0	87.1*	7,057
Got Enough Information from Doctors	72.7	68.9	82.0	81.3***	7,101
Doctors' Response Felt Like Partner	79.3	77.1	82.3	85.1*	7,120

*P<0.05.

***P<0.001.

NOTES: CSHCN is children with special health care needs. SCHIP is State Children's Health Insurance Program. Compared with SCHIP: χ^2 test.

SOURCE: Yu, H. and Dick, A., RAND Corporation, and Szilagyi, P., University of Rochester School of Medicine and Dentistry: Analysis of the 2001 National Survey of CSHCN.

difference between these two groups was significant for only one measure—child's health care easy to use (uninsured versus SCHIP = 52.9 versus 70.3 percent).

Table 2 also indicates that, in comparison with parents with income-eligible, but privately insured CSHCN, those parents with CSHCN enrolled in SCHIP had similar responses to the general question of satisfaction with care (89.8 versus 91.3 percent). For four of the six detailed measures of experience with care, parents of the SCHIP enrollees were significantly less satisfied than those having private coverage, including questions of "Doctor often spent enough time," "Providers sensitive to family values/customs," "Got enough information from doctors," and "Doctors' response felt like partner".

The multivariate analysis of parents' satisfaction with care showed that there was no significant difference between the uninsured and the SCHIP enrollees, or between the privately insured and the SCHIP enrollees².

² Detailed results of the multivariate analysis are available from the authors on request.

Multivariate Analysis for Unmet Needs

The logistic regression showed that five factors significantly affected the unmet needs for the SCHIP-eligible CSHCN, including (1) age, (2) race/ethnicity, (3) income, (4) type of special need, and (5) insurance status. Those between age 6 and 12 were less likely to have unmet needs than CSHCN under age 5, while teenagers had higher probability of having unmet needs. Non-Hispanic Black CSHCN were less likely to have unmet needs than non-Hispanic White children. Those who had family income between 200-300 percent of FPL were less likely to have unmet needs than those with income below 100 percent of FPL. Compared with those with disability or limitation, those who needed emotional/behavioral counseling were more likely to have unmet needs. By far the strongest predictor of unmet needs was insurance status, with uninsured but SCHIP-eligible CSHCN having five times the odds of having unmet needs compared with SCHIP-enrolled CSHCN (Table 3).

Table 3
Adjusted Odds Ratio of Factors Affecting Unmet Needs: 2001

Demographic	Odds Ratio	95% Confidence Interval	
Predisposing Factors			
Age Group			
0-5 Years	1.00	—	—
6-12 Years	0.70 *	0.52	0.95
13-17 Years	2.12***	1.4	3.22
Sex			
Male	1.00	—	—
Female	1.03	0.79	1.33
Race			
Non-Hispanic White	1.00	—	—
Non-Hispanic Black	0.60**	0.40	0.84
Non-Hispanic Other Race	1.73	0.79	3.80
Hispanic	0.84	0.48	1.45
Mother's Education			
Less than High School	1.28	0.81	2.02
High School	1.00	—	—
Post High School	1.24	0.88	1.73
College	1.19	0.81	1.74
Language Used for the Interview			
English	1.00	—	—
Other	0.64	0.28	1.43
Need Factors			
Type of Special Need			
Disability/Limitation	1.00	—	—
Prescription Medicine	1.00	0.73	1.38
More Medical Care	0.94	0.70	1.27
Specialty Therapy	1.30	0.90	1.88
Emotional/Behavioral Counseling	1.41*	1.06	1.89
Number of CSHCN within Household			
1	1.00	—	—
2	1.32	0.96	1.81
3 or More	1.58	0.86	2.90
Enabling Factors			
Family Income as % of Federal Poverty Level			
<100	0.97	0.48	1.99
100-149	1.00	—	—
150-199	0.84	0.61	1.18
200-299	0.49**	0.32	0.74
≥300	0.73	0.28	1.89
Place of Residence			
Area with ≥500,000 Residents	1.13	0.80	1.59
Area with <500,000 Residents	1.00	—	—
Type of SCHIP Program			
Separate SCHIP	1.00	—	—
Medicaid Expansion	1.13	0.79	1.54
Combination	1.07	0.76	1.50
Insurance Status			
SCHIP-Eligible but Uninsured	5.92***	3.86	9.09
SCHIP	1.00	—	—
SCHIP-Eligible but Enrolled in Other Insurance	0.79	0.47	1.31
Income-Eligible but Privately Insured	0.93	0.66	1.30
Number of Observations	5,364	—	—

*P<0.05.

**P<0.01.

***P<0.001.

NOTES: CSHCN is children with special health care needs. SCHIP is State Children's Health Insurance Program.

SOURCE: Yu, H. and Dick, A., RAND Corporation, and Szilagyi, P., University of Rochester School of Medicine and Dentistry: Analysis of the 2001 National Survey of CSHCN.

CONCLUSION AND DISCUSSION

This study found 7.5 percent of all CSHCN, or 684,755, across the Nation were eligible for SCHIP in 2000, the time SCHIP was in its early implementation stage. Among the SCHIP-eligible CSHCN, 20.7 percent, or 141,464, were uninsured. While the SCHIP-enrolled CSHCN had similar access to care to those income-eligible, but privately insured, they had better access to care than those SCHIP-eligible, but uninsured CSHCN. For example, the multivariate analysis indicated that the odds ratio of having unmet needs was 5.92:1 between the eligible but uninsured and those enrolled in SCHIP.

CSHCN Eligible for SCHIP

This study found that a limited fraction of CSHCN were eligible for SCHIP in 2000. This finding reflects the limited scope of SCHIP, which targeted a specific segment of pediatric population, whose families earned too much to qualify for Medicaid and earned too little to afford private insurance. Compared with the literature, this study found a relatively low percentage (7.5 percent) of CSHCN eligible for SCHIP. For example, one study also applied State-specific eligibility criteria by income and age, but reported that 16.8 percent of CSHCN were eligible for SCHIP (Davidoff et al., 2004), more than double that reported by this study. This difference is due to the fact that, in our study, those covered by private insurance were not considered as eligible even if they met the income criterion set by SCHIP policies. If those income-eligible but privately insured CSHCN were considered as eligible, 20.1 percent of all CSHCN would be eligible for SCHIP, a percentage close to the previous report.

SCHIP-Eligible but Uninsured

This study reported that about 20 percent of the SCHIP-eligible CSHCN were uninsured in 2000. That was a relatively small proportion, compared with the literature report that 36 percent of all the SCHIP-eligible children were uninsured (Yu and Seid, 2006). Like previous studies (Davidoff et al., 2004), this study finding suggested that CSHCN were more likely to be insured than the general pediatric population.

Access to Care

The uninsured SCHIP-eligible CSHCN were more likely to have unmet needs in comparison with the SCHIP-enrolled CSHCN. These results are consistent with literature reports (Andersen, 1995; Newacheck et al., 2000), confirming insurance coverage as an enabling factor for access to health care.

Interestingly, those enrolled in SCHIP had similar overall unmet needs, and similar levels of specific unmet needs compared with the income-eligible CSHCN enrolled in private insurance with two notable exceptions. First, SCHIP-enrolled CSHCN reported more unmet needs regarding specialty care. It is unclear whether this is due to insufficient specialty providers participating in SCHIP, or to other causes. Second, SCHIP-enrolled CSHCN reported more unmet needs regarding obtaining medical supplies, which is critical to many of these children. This was surprising because in general, the benefit structure for SCHIP plans tends to be more comprehensive than the benefit structure of many private insurance plans (Hill et al., 2001; Szilagyi, 2003), which should benefit the needs of CSHCN. Further research is needed to assess the reasons for these deficiencies.

Our finding that non-Hispanic Black CSHCN were less likely to have unmet needs than non-Hispanic White children

may not necessarily suggest that the former had better access to care since racial difference in access to care has been well documented in the literature. Rather, our finding reflected racial difference in parents' perception of unmet need. Although the study sample included only CSHCN, it is important to acknowledge that the parents must first recognize a need for services for their child before they can determine whether the need was met. Perception of need may vary by race and other factors, such as education. It would be an interesting topic for future studies to examine how the parents' perception of unmet need was related to their education.

The SCHIP-enrolled CSHCN had lower scores on four out of the six specific satisfaction measures compared with the income-eligible CSHCN enrolled in private insurance. The lower scores reflected dimensions of interpersonal communication. It is unclear whether this is due to different providers serving the SCHIP population, or to different characteristics and needs of CSHCN enrolled in SCHIP.

Strengths and Limitations

Previous studies have utilized different approaches to define the SCHIP eligibility (Dubay and Kenney, 2000; Holahan et al., 2000; Davidoff et al., 2004; and Davidoff, et al., 2005). In particular, our study classified privately-insured children as not eligible for SCHIP. We also applied the State-level eligibility guidelines by age and income, which matched with most data of the NSCSHCN. However, there was not a perfect match since the income level of 3.4 percent of CSHCN interviewed by NSCSHCN did not match precisely with all State eligibility policies.

One advantage of using data from the NSCSHCN is that it provides the first national estimate of CSHCN in terms of

prevalence and access to care. However, there are some limitations of the NSCSHCN as it applies to this study. One is that parents may not recognize the names of SCHIP, and the number of CSHCN covered by SCHIP was likely underestimated, as acknowledged by the survey organizers (Blumberg et al., 2003). Because of this, the organizers cautioned against using the NSCSHCN data to compare SCHIP and Medicaid. It remains unclear how CSHCN fair under SCHIP compared with Medicaid.

The NSCSHCN also did not obtain information on citizenship status, which may affect estimate of the number of CSHCN who were SCHIP-eligible, but uninsured in States with high immigrant populations such as Texas and Florida.

Furthermore, the data used in this study reflected the SCHIP eligibility in 2000, the time that the NSCSHCN started. Since the survey was completed in April 2001, some States (e.g., Maryland and West Virginia) have expanded their SCHIP, which could have a bigger role in serving CSHCN. Results from this study may be considered as baseline data and can be used to track trends in SCHIP eligibility and insurance status as the second NSCSHCN will be completed within the next 2 years.

Although this study provided national estimates of SCHIP-eligibility and insurance status for CSHCN, it found that the type of SCHIP was not significantly related to unmet needs. This may be due to the fact that this study used a cross-sectional dataset, and consequently was unable to examine these study findings in terms of State policies, such as outreach efforts; complexity of the application procedures; actual income disregards; and specific characteristics of SCHIP, including cost sharing, continuous eligibility, and passive versus active reenrollment. Further studies will be needed to better link State policies with enrollment in SCHIP by CSHCN.

Implications

Our finding that only a small proportion of CSHCN were eligible for SCHIP has significant fiscal implications for governments, limiting their potential liability for this public insurance program. Given the fact that the average annual health care expenditures by CSHCN was three times higher than that by those non-CSHCN (Yu, 2004), SCHIP expenditures could dramatically increase if a large proportion of CSHCN are eligible for SCHIP and participation increases. On the other hand, like previous studies (Davidoff et al., 2004), we found that a much larger proportion of CSHCN (about 20 percent) would be eligible for SCHIP if those privately insured were not excluded. Given the possibility of crowd-out, that proportion could be considered as the upper bound of SCHIP eligibility for CSHCN. Crowd-out refers to the deliberate action taken by employers and/or families to drop private coverage and to switch to public programs, which should be avoided because those people are not targeted by the public programs. Since this study estimates the SCHIP eligibility in 2000 when most of SCHIP were at their initial stages, there is still a possibility that crowd out could become more serious as SCHIP develops. The current literature indicates mixed results of crowd out in SCHIP (Shenkman et al., 1999; Lo Sasso and Buchmueller, 2004; Hudson, Selden, and Banthin, 2005). In particular, there is little published research focusing on crowd out among CSHCN. For example, Hill et al. (2001) reported that key informants and parents of CSHCN described SCHIP benefits as much better than typical private coverage, implying that parents of CSHCN might consider dropping limited and expensive private coverage in favor of better and less expensive SCHIP coverage. However, in States with waiting periods,

dropping private coverage and experiencing brief periods of uninsurance for their CSHCN may not be acceptable to parents. Thus, it remains an empirical question how such anticrowd out policies affect CSHCN.

A second implication is that, because over 141,000 CSHCN nationally were eligible for SCHIP but were uninsured, States and local leaders may wish to examine their own State policies and procedures in order to improve their strategies for enrolling more of the SCHIP-eligible CSHCN into SCHIP.

A third implication is for SCHIP directors and child health leaders to note the large number of unmet health care needs, even among CSHCN who were enrolled in SCHIP or private insurance. Specific areas of substantial unmet needs include specialty care, mental health, communication aids, care coordination, respite care, and counseling. In particular, as the multivariate analysis showed, those who needed emotional/behavioral counseling were more likely to have unmet needs. These areas could be targeted for improvements to benefit CSHCN.

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