

Reduction in Racial and Ethnic Disparities After Enrollment in the State Children's Health Insurance Program

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ABSTRACT. *Background.* Racial/ethnic disparities are associated with lack of health insurance. Although the State Children's Health Insurance Program (SCHIP) provides health insurance to low-income children, many of whom are members of racial/ethnic minority groups, little is known about whether SCHIP affects racial/ethnic disparities among children who enroll.

Objectives. The objectives of this study were to (1) describe demographic characteristics and previous health insurance experiences of SCHIP enrollees by race, (2) compare racial/ethnic disparities in medical care access, continuity, and quality before and during SCHIP, and (3) determine whether disparities before or during SCHIP are explained by sociodemographic and health system factors.

Methods. Pre/post-parent telephone survey was conducted just after SCHIP enrollment and 1 year after enrollment of 2290 children who had an enrollment start date in New York State's SCHIP between November 2000 and March 2001, stratified by race/ethnicity (non-Hispanic white, non-Hispanic black, and Hispanic). The main outcome measures were usual source of care (USC), preventive care use, unmet needs, patterns of USC use, and parent-rated quality of care before versus during SCHIP.

Results. Children were white (25%), black (31%), or Hispanic (44%); 62% were uninsured ≥ 12 months before SCHIP. Before SCHIP, a greater proportion of white children had a USC compared with black or Hispanic children (95%, 86%, and 81%, respectively). Nearly all children had a USC during SCHIP (98%, 95%, and 98%, respectively). Before SCHIP, black children had significantly greater levels of unmet need relative to white children (38% vs 27%), whereas white and Hispanic children did not differ significantly (27% vs 29%). During SCHIP, racial/ethnic disparities in unmet need were eliminated, with unmet need at 19% for all 3 racial/ethnic groups. Before SCHIP, more white children made all/most visits to their USC relative to black or Hispanic children (61%, 54%, and 34%, respectively); all improved during SCHIP with no remaining disparities (87%, 86%,

and 92%, respectively). Parent-rated visit quality improved for all groups, but preexisting racial/ethnic disparities remained during SCHIP, with improved yet relatively lower levels of satisfaction among parents of Hispanic children. Sociodemographic and health system factors did not explain disparities in either period.

Conclusions. Enrollment in SCHIP was associated with (1) improvement in access, continuity, and quality of care for all racial/ethnic groups and (2) reduction in preexisting racial/ethnic disparities in access, unmet need, and continuity of care. Racial/ethnic disparities in quality of care remained, despite improvements for all racial groups. Sociodemographic and health system factors did not add to the understanding of racial/ethnic disparities. SCHIP improves care for vulnerable children and reduces preexisting racial/ethnic disparities in health care. *Pediatrics* 2005;115:e697-e705. URL: www.pediatrics.org/cgi/doi/10.1542/peds.2004-1726; *New York State, health disparities, health insurance policy, Child Health Plus, public health insurance, SCHIP evaluation.*

ABBREVIATIONS. USC, usual source of care; SCHIP, State Children's Health Insurance Program; FPL, federal poverty level.

Racial/ethnic disparities in health care delivery are associated with adverse health outcomes,¹ and elimination of racial/ethnic disparities has become a national health goal.^{2,3} Despite overall improvements,⁴⁻⁶ racial/ethnic minority children continue to experience compromised access to care,⁷⁻¹⁴ quality of care,¹⁵ and health status relative to white children.^{7-10,15-21} Poverty and lack of health insurance contribute to racial and ethnic disparities in care. Low-income children are more likely to be uninsured,²² and uninsured children are more likely than insured children to lack a usual source of health care,^{11,23-26} delay care,^{23,26} use less care,²⁶⁻³⁰ receive poorer quality care,³¹ and have poorer health.^{7,11,32,33} Because minority children are disproportionately likely to be both low income and uninsured, their problems are compounded.

Health system and individual factors both can contribute to ongoing racial/ethnic disparities,⁸ yet their relative contributions to health disparities remain poorly understood.^{34,35} Racial/ethnic disparities in health and medical care have been associated with health insurance,^{36,37} sociodemographic factors,^{38,39} and elements of the health care system such as accessibility and use of a medical home or usual source of care (USC).^{14,40-43} Little is known about the potential for a change in disparities after providing health

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insurance to children who might otherwise be uninsured.

Since 1997, the State Children's Health Insurance Program (SCHIP) has provided health insurance to low-income children who are not eligible for Medicaid and do not have private coverage.⁴⁴ New York's Child Health Plus insurance program began in 1991 and became New York's separate-model SCHIP in 1997.^{45–47} Eligible children are state residents who are 0 to 18 years of age; have family incomes $\leq 230\%$ of the federal poverty level (FPL); and are not covered by other insurance or eligible for Medicaid. Sliding-scale premiums range from \$0 ($<160\%$ of FPL) to \$9 to \$15 per child per month ($161\text{--}230\%$ of FPL) up to a maximum \$45 per family per month. In 2001, 32 managed care plans provided a state-defined benefit package (including ambulatory, emergency, inpatient, pharmacy, dental, and mental health services), and New York had 590 000 SCHIP enrollees—18% of SCHIP enrollees nationwide.⁴⁸ SCHIP in most states, including New York, is managed care.

Many minority children enroll in SCHIP, providing a unique opportunity to assess changes in disparities among vulnerable children who might otherwise be uninsured. Preexisting racial/ethnic disparities have been described among SCHIP enrollees.⁴⁹ Although previous studies of SCHIP-like programs in several states^{50–59} and recent studies of SCHIP^{60–68} have demonstrated improved access to care,⁶⁸ these studies have not addressed racial/ethnic disparities during SCHIP. Reduction of racial/ethnic disparities among enrollees would provide evidence of SCHIP's contribution to national health goals to eliminate racial/ethnic disparities.

Our objectives were to (1) describe demographic characteristics and previous health insurance experiences of SCHIP enrollees by race/ethnicity, (2) compare racial/ethnic disparities in medical care access, continuity, and quality before and during SCHIP, and (3) determine whether racial/ethnic disparities were explained by socioeconomic/demographic and health system factors.

METHODS

We followed children who were in New York's SCHIP and had new enrollment dates between November 2000 and March 2001.

Design

We used a pre/post comparison of the year before SCHIP versus the year during SCHIP. Parents were interviewed shortly after enrollment (baseline) and again 1 year after enrollment (follow-up). The baseline interview reflected the year before SCHIP enrollment, and the follow-up reflected experiences during SCHIP. We also performed baseline interviews with a comparison sample who enrolled 1 year later to assess possible secular trends in characteristics and previous experiences of new SCHIP enrollees.⁵⁰ Parents of children in the comparison cohort completed an identical baseline interview reflecting experiences before enrollment in SCHIP (for comparison of secular trends).

Subjects and Sampling

We analyzed New York State SCHIP administrative files⁶⁹ to identify new enrollees in SCHIP who had an enrollment start date between November 1, 2000, and March 31, 2001, and were continuously enrolled for a minimum of 3 months (remaining beyond the 2-month "presumptive eligibility" period), to eliminate unne-

cessary interviews with very short-term enrollees who did not complete the application process or were found to be ineligible for SCHIP.

We drew a random sample of 9101 children (1 unique child per household), stratified by age (0–5, 6–11, and 12–18 years) and region of New York (New York City, New York City environs, upstate urban, and upstate rural) based on US Bureau of the Census standard metropolitan statistical areas.^{70–72} Because race/ethnicity is not included in state administrative files, we stratified by race/ethnicity using telephone screening before interview. Consistent with federal guidelines, respondents identified the index child's race as ≥ 1 of the following: white, African American, Asian/Pacific Islander, Native American/Alaska Native, or other race. The child's ethnicity was classified as Hispanic or non-Hispanic.⁷³ We then grouped children into mutually exclusive categories of non-Hispanic white, non-Hispanic black, and Hispanic (of any race).⁷³ Children who did not fall into 1 of the 3 groups were ineligible for the study because of sample size constraints.

Data Collection

An introductory letter explained the study, and respondents received \$10 for participation. Contact information was obtained from state billing files and verified using local telephone, Web-based, and neighborhood directories. Telephone interviews were conducted by the National Opinion Research Center (K. Grigorian, MS, unpublished data, 2003) in English and Spanish, between 9 AM and 10 PM Monday to Sunday.

Measures

Measures came from standard instruments^{74–77} or were developed for the current study.^{78–80} Sociodemographic characteristics were race/ethnicity, region,⁴⁶ child age, single-parent household, household size, income, parent education and employment, and respondent birthplace (inside versus outside the United States).⁸¹ Previous health insurance measures were number of insured months and type of coverage (private, Medicaid, other [eg, military coverage]) before SCHIP. Access measures were USC, type of USC (eg, private doctors office, hospital clinic), preventive care use, and presence of unmet health needs (delayed or foregone preventive, acute, specialty, emergency care, and prescriptions). Continuity was measured as the reported proportion of total visits that were to the USC (all/most versus some/none). Quality was measured using the Consumer Assessment of Health Plan Satisfaction parent ratings of care.^{82,83} Sociodemographic and health system covariates in multivariate models were region (New York City, New York City environs, upstate urban, or upstate rural), child age at enrollment (0–2.9, 3–5.9, 6–11.9, or 12–17.9 years), single-parent household, household size (1–2, 3–4, or ≥ 5), income (dichotomous $>160\%$ of FPL or not or continuous income as required for specific analyses), parent highest grade completed ($<$ high school, high school, or $>$ high school), parent maximum employment status (full-time, part-time, or not working), respondent born outside the United States (yes/no), type of last insurance (public, private, or none), had USC (yes/no), type of USC place (private office, hospital/community/neighborhood clinic, hospital emergency department, or other), and changed USC at SCHIP enrollment (yes/no).

Analyses

All analyses were adjusted for the complex survey design to produce statewide estimates for each racial/ethnic group.^{84–86} For objective 1 (baseline demographics and previous insurance experiences by race/ethnicity), we performed bivariate analyses to describe sociodemographic characteristics and previous insurance experiences by race/ethnicity.

For objective 2 (racial/ethnic disparities before and during SCHIP), we calculated unadjusted estimates of differences between racial/ethnic group pairs for the following outcome variables: access to care, preventive care visits, having any unmet health needs, having all or most visits to the USC place, and measures of parent-reported satisfaction with care. We did this by calculating the value of each outcome for each racial group, then calculating the difference between racial-group pairs (black/white; Hispanic/white). We then compared these differences us-

ing a mixed-model procedure for binary outcomes to adjust for the clustered sampling procedures.^{84,85,87}

For objective 3 (determining whether racial/ethnic disparities were explained by socioeconomic/demographic or health system factors), we used generalized linear mixed models to accommodate nested survey sampling and repeated observations for each child (measures before and again during enrollment). We included known sociodemographic and health system factors as covariates and examined the differential effects of SCHIP over time by racial/ethnic group with an interaction term (racial/ethnic group \times time). We obtained estimates for the contribution of each dependent variable to observed disparities in each racial/ethnic group before and during SCHIP.⁸⁸ We then compared predictions across race/ethnic groups before and during SCHIP to characterize disparities in each period.

RESULTS

Contact and Completion Rates at Baseline (to Assess the Year Before SCHIP)

Of 9101 index children in the sample frame, 1808 (19.9%) were unlocatable, and successful contact was made with 7293 (80.1%). Once contact was made, children were screened for study eligibility using a computerized algorithm that applied the stratified sampling by child age, race, and region of residence. A child was excluded from the study when he or she was deceased or had moved out of state; the most knowledgeable adult reported that the child was not enrolled in SCHIP; or study enrollment was full for that child's combination of race/ethnicity, age, and region of residence in New York State. Of those whom we contacted, 4528 (62.1%) were ineligible for the study for these reasons, with the vast majority of exclusions made because enrollment targets had already been reached or the child was a member of a racial/ethnic group not studied here (eg, Asian). After exclusions, 3658 (50.2% of 7293 contacted) were eligible for the study. Of those, 957 (26.6%) refused and 2701 (73.8%) agreed to participate. A total of 2644 participant interviews were complete and analyzable.

Contact and Completion Rates at Follow-up (to Assess the Period During SCHIP)

A total of 2644 were recontacted for a follow-up interview 13 to 15 months after the SCHIP enrollment date. Of those, 99 (3.7%) were unlocatable, and successful contact was made with 2545 (96.3%). Of the 2545 who were recontacted successfully, follow-up interviews were completed with 2290 (90% of 2545, or 87% of 2644). The vast majority of study participants were enrolled in SCHIP for the full study year. The mean duration of enrollment in New York's SCHIP is 12 months, with >50% remaining for 2 years. There is some turbulence around the annual recertification process, with 25% of enrollees experiencing a break in SCHIP coverage and 23% returning to the program within ≤ 3 months thereafter.⁶⁹ Baseline characteristics of children who were lost to attrition were similar to those who completed the study.

Comparison Versus Study Group: Assessment of Secular Trend

A total of 401 children from unique households were included in the comparison group. We ana-

lyzed the study and comparison groups on 75 measures for the pre-SCHIP period to assess for possible secular trend. We tested measures of demographics, access, unmet need, service use, and quality of care and found minor but significant differences for only 3 of the 75 measures. Comparison of selected short-term "postenrollment" questions for both groups yielded no differences.

Objective 1: Sociodemographic Characteristics and Previous Insurance Experiences

The racial distribution of the sample was 25% non-Hispanic white, 31% non-Hispanic black, and 44% Hispanic. Because of our sampling and weighting methods, the distribution across these racial groups and regions is representative statewide. Parents of most SCHIP enrollees completed high school or more, and most were employed. Greater proportions of racial/ethnic minority children were uninsured for all 12 months before SCHIP; lived in single-parent households with incomes $\leq 160\%$ of FPL; and had parents who did not complete high school, were unemployed, or were born outside the United States relative to white children. Overall, 62% of enrollees had private insurance as their most recent coverage before SCHIP, although it is important to note that this coverage may have ended ≥ 1 year before the child's enrollment in SCHIP (Table 1).

Objective 2: Access, Use, Continuity, and Quality Before and During SCHIP

Before SCHIP, a greater proportion of white children had a USC compared with black or Hispanic children (95%, 86%, and 81%, respectively; $P < .001$), whereas nearly all children had a USC during SCHIP (97%, 95%, and 98%, respectively; $P = .02$). Twenty-six percent of children who had a USC both before and during SCHIP changed USC on enrollment in SCHIP. (This was not analyzed for presence or absence of disparities because it is a 1-time measure ["Did you change..." (yes/no)]. We report it here because it was used as a health system covariate in analyses for objective 3.) All groups had improvements in use of preventive care, although fewer Hispanic children used preventive care relative to other races even during SCHIP. Levels of overall unmet need during SCHIP dropped from 31% before to 19% during SCHIP, with significant black/white disparities before SCHIP yet no significant racial/ethnic disparities during SCHIP.

The proportion of visits to the USC, a measure of continuity, improved for all groups. Use of the USC for all/most care increased from 47% before to 89% during SCHIP, with disparities before SCHIP among white, black, and Hispanic children (61%, 54%, and 34%, respectively; $P < .001$) and elimination of this difference during SCHIP (87%, 86%, and 92%, respectively; $P = .066$). In contrast, although parent-reported visit quality improved overall for all 4 measures and for all racial groups, preexisting racial disparities remained, with lower quality ratings among parents of Hispanic children. The mean overall rating of all care received was high both before

TABLE 1. Demographic Characteristics of White, Black, and Hispanic Enrollees in SCHIP in New York State

	Total, %	White, %	Black, %	Hispanic, %
Race and ethnicity*†	100.0	25.2	30.9	43.9
Region				
New York City	69.1§	32.6	83.0§	80.3§
New York City environs	15.4§	18.3	9.5§	18.0
Upstate urban (SMSA)	11.1§	34.3	6.1§	1.4§
Upstate rural (non-SMSA)	4.3§	14.8	1.3§	0.4§
Child age at enrollment				
0–2.9 y	19.4	20.7	16.1	21.0
3–5.9 y	17.5	18.0	18.7	16.4
6–11.9 y	33.3	32.2	34.3	33.2
12–17.9 y	29.8	29.1	30.9	29.4
Single-parent household	51.1§	36.5	67.2§	48.1¶
Household size				
1–2 people	8.5¶	8.6	14.0	4.4¶
3–4 people	51.3¶	57.5	43.6¶	53.2
≥5 people	40.2	33.9	42.4	42.3
Income ≤160% of FPL	81.2¶	65.8	86.2§	87.5¶
Highest grade completed‡				
<High school	23.2§	4.5	15.1§	39.6§
High school	35.6	39.6	38.4	31.3
>High school	38.0§	55.0	40.3¶	26.6§
Maximum employment status‡				
Working full-time	62.5¶	72.6	53.2§	63.2
Working part-time	18.1	14.9	23.9	15.7
Not working	19.5¶	12.4	22.9¶	21.1¶
Respondent born outside United States	56.0§	25.8	54.1§	73.7§
Previous health insurance				
No. of months insured year before SCHIP				
None (uninsured all year)	62.0¶	48.8	63.1¶	68.8§
All 12 mo	23.7	30.0	26.2	18.3¶
1–11 mo	14.3¶	21.2	10.7§	12.9¶
Type of last insurance				
Any private	61.7¶	48.3	62.8¶	68.6§
Medicaid	22.4§	40.6	24.8¶	10.2§
Other	15.9¶	11.0	12.4	21.2¶

SMSA indicates US Census standard metropolitan statistical areas.

* Significance testing is for 3 racial groups (“Total”) and for black versus white (“Black”) and Hispanic versus white (“Hispanic”).

† Three quarters of new enrollees were racial/ethnic minority groups (21% non-Hispanic white, 24% non-Hispanic black, 36% Hispanic, 19% other). Children of other races were not eligible for the study.

‡ Education and employment reflect highest in household among ≥1 parents.

§ $P \leq .001$.

¶ $P \leq .01$.

¶ $P \leq .05$.

and during SCHIP, with no disparities in either period (Table 2).

Objective 3: Comparison of Differences in Rates of Access, Use, Continuity, and Quality

Table 3 shows percentage-point differences in access, use, unmet need, and continuity by race/ethnicity. Differences are shown, first unadjusted and then adjusted for socioeconomic and health system factors, for black versus white children in the first 2 columns and for Hispanic versus white children in the second 2 columns. Negative differences indicate that white children had the higher level in the pair, and positive differences indicate that minority children had the higher level in the pair. Estimates that included plan fixed effects did not differ substantially from estimates that did not; therefore, results presented here do not include these effects.

The most striking finding is that, in most cases, statistically significant racial/ethnic disparities existed before SCHIP (top of Table 3) yet were absent

during SCHIP (bottom of Table 3). The second major finding is that controlling for sociodemographic and health system factors affected the magnitude and direction of disparities, accentuating some and minimizing others. Before SCHIP, controlling for sociodemographic and health system factors explained some of the observed disparity in having a USC and explained most of the disparity in having made all or most visits to the USC. For example, the unadjusted difference between black and white children in having a USC before SCHIP was -8.9% ($P \leq .001$), versus an adjusted difference of -6.2% ($P \leq .05$), explaining some of the observed disparity, and the Hispanic-white difference for having all/most visits at the USC went from -27.5% unadjusted ($P \leq .001$) to -2.5% adjusted (nonsignificant), explaining much of the observed difference for this racial/ethnic pair.

In contrast, controlling for sociodemographic and health system factors accentuated the residual unexplained racial/ethnic disparities in use of preventive care and having any unmet need for care before

TABLE 2. Access to Care, Continuity of Care, Quality of Care, and Unmet Health Care Needs

	Before SCHIP					During SCHIP				
	All	White	Black	Hispanic	<i>P</i>	All	White	Black	Hispanic	<i>P</i>
Access to care										
Had USC, %	85.8	94.8	85.9	80.5	.000	97.1	98.3	95.0	97.9	.019
Used preventive care, %	73.0	71.7	75.8	71.8	.613	81.5	84.6	86.0	76.7	.029
Had any unmet health care need, %*	31.3	27.2	37.5	29.3	.123	18.9	19.7	18.9	18.5	.929
Continuity of care at medical home: proportion of visits to USC										
All or most, %	47.0	61.2	53.9	33.9	.001	88.5	87.1	85.8	91.7	.066
Some or none, %	53.0	38.8	46.1	66.1	.001	11.5	12.9	14.2	8.3	.066
Consumer assessment of quality: my provider usually or always										
Listens carefully to me, %	77.2	87.7	80.4	68.6	.000	85.4	91.0	92.0	76.5	.000
Explains things in an understandable way, %	82.3	90.7	85.6	74.6	.000	89.4	94.7	93.7	82.5	.000
Respects what I have to say, %	86.5	88.1	91.7	81.7	.004	93.2	95.6	95.2	90.1	.003
Spends enough time with me, %	76.1	80.2	78.8	71.7	.202	84.6	92.4	85.8	78.4	.007
Mean rating of all caret	8.05	8.26	8.24	7.78	.137	8.75	8.94	8.68	8.68	.112

* Unmet need prevalence levels include both delayed and foregone care, resulting in a higher prevalence than is found using instruments that assess care that the child "needed but could not get." Disparities in unmet need were present between white and black children when paired comparisons were performed (see Table 3). Joint comparisons shown here are for overall differences among 3 groups.

† On a scale of 0 to 10; 10 indicates the best.

SCHIP, revealing that unexplained racial/ethnic disparities were far more stark than they seemed to be before these factors were controlled. In this case, the difference between black and white children went from 10.3% unadjusted ($P \leq .05$) to 17.1% adjusted ($P \leq .001$) and the difference between Hispanic and white children went from 2.0% unadjusted (nonsignificant) to 12.3% adjusted ($P \leq .05$), suggesting that sociodemographic and health system factors that were controlled in the adjusted model actually helped mask disparities that are actually attributable to race/ethnicity or other unmeasured factors. During SCHIP, racial/ethnic disparities were noticeably smaller and were not statistically significant, even after controlling for other potential sources of disparity. (The result for "had a USC" during SCHIP remains statistically significant at the $P \leq .05$ level because virtually all children had a USC during SCHIP. Very small differences remain statistically significant when the size of the cell that contains "no USC" approaches 0.)

DISCUSSION

We found that (1) substantial racial/ethnic disparities existed before enrollment, (2) outcomes for children of all races improved during SCHIP, and (3) preexisting racial/ethnic disparities in access, unmet need, and continuity were virtually eliminated during SCHIP. Parent ratings of quality improved for all racial/ethnic groups, but disparities remained during SCHIP. Controlling for sociodemographic and health system factors did not add to our understanding of racial/ethnic disparities that existed before enrollment in SCHIP, and examination of these factors did not account for the positive effect reported here.

Provision of Health Insurance Can Reduce Preexisting Racial and Ethnic Disparities

Despite evidence that lack of insurance contributes to racial/ethnic disparities, evidence is scant that provision of health insurance to vulnerable children

TABLE 3. Comparison of Differences in Rates of Access, Use, Unmet Need, and Continuity by Race/Ethnicity

	Black Minus White		Hispanic Minus White	
	Unadjusted, %*	Adjusted, %†	Unadjusted, %*	Adjusted, %†
Before SCHIP				
Had USC	-8.9§	-6.2¶	-14.3§	-7.5¶
Used preventive care	4.1	11.1¶	1.0	11.7
Any unmet need for care	10.3¶	17.1§	2.0	12.3¶
All/most visits were to USC	-7.3	1.5	-27.4§	-2.5
During SCHIP				
Had USC	-3.3¶	-2.2	-0.5	1.8
Used preventive care	1.4	8.5	-7.8	2.3
Any unmet need for care	-0.9	2.5	-1.2	5.4
All/most visits were to USC	-1.3	-2.4	4.6	3.9

* Unadjusted differences were calculated by using percentage values shown for each race group in Table 2; eg, for "had USC before SCHIP," white = 94.8% and black = 85.9%. Thus, black minus white (85.8% - 94.8%) = -8.9% as shown at the far left of top row. Remaining unadjusted differences were calculated in the same manner and then compared with the adjusted differences (shown only in this table).

† Controls for sociodemographic and health system factors include region, child age at enrollment, single-parent household, household size, income > 160% of FPL, parent's highest grade completed, parent's maximum employment status, respondent born outside United States, type of last insurance, had USC, type of USC place, and changed USC at SCHIP enrollment.

§ $P \leq .001$.

¶ $P \leq .05$.

reduces preexisting disparities. National-level analyses suggest that health disparities have not been reduced in children over the past 2 decades, despite expansion of Medicaid and other efforts to provide health insurance to children,^{40,89–91} and that racial/ethnic disparities persist even within populations that have similar insurance coverage.^{35,92}

Two of our findings demonstrate important successes of SCHIP in addressing racial/ethnic disparities. First, all racial/ethnic groups showed marked improvement after enrollment in SCHIP for all measures. Second, statistically significant preexisting disparities in measures of access, unmet need, and continuity of care were virtually eliminated during SCHIP, and these effects remained even after controlling for sociodemographic factors (eg, income and family factors) and health system factors (eg, changing the USC).

Some Disparities Remain Despite Provision of Health Insurance

Racial/ethnic disparities remained in the use of preventive care and in ratings of visit quality. Although all racial/ethnic groups experienced increases in use of preventive care and improved quality, Hispanic children continued to have the lowest levels during SCHIP. These findings support results from other studies⁹² that health insurance is an essential first step toward improving care but by itself may not result in optimal care.

Eisenberg and Power described a pathway with 7 points, from health insurance (1) to receipt of quality care (7), with each point representing a risk for loss or opportunity for progress toward the ultimate goal of quality care for all. Points between 1 and 7 are: (2) successful attainment of coverage; (3) access to covered services, providers, and facilities; (4) choice of plans, providers, and facilities; (5) access to a medical home for primary care; and (6) access to specialty care.⁹³ This study demonstrates successes of SCHIP in ensuring access to a USC and markedly improved continuity of care at the USC. Acknowledging the limitations of health insurance alone in addressing all 7 milestones, it is encouraging to see evidence of its penetration to milestone 5 (having a USC and using it for all/most of the child's medical care) and to see across-the-board improvements in parent report of quality at milestone 7. It is also logical to see that disparities remain in quality, the last and furthest point on the pathway.⁹² Consideration of differences in language, acculturation, or perception and reporting of health care experiences between and within different racial groups^{9,94,95} can lead to additional understanding of the barriers that remain within health care settings and even within established patient-provider relationships and may suggest strategies beyond health insurance alone that are necessary to eliminate remaining disparities.

Limitations

Several limitations apply to our study. First, parent self-report may differ from provider report or medical claims. Second, observed racial/ethnic differences may be confounded by unmeasured factors

beyond those controlled in these analyses. Third, regression to the mean (whereby the neediest children enroll and improve the most) is a possible alternative explanation for the marked improvements during SCHIP. Although other studies have shown that children who entered coverage in good health remained that way and those who were sickest at baseline reported the greatest improvement,⁹⁶ the baseline levels of access in our study exceeded those reported elsewhere for similar populations nationally,²³ providing reassurance that regression to the mean is an unlikely explanation for the results reported here. Fourth, although baseline characteristics of those who were lost to study attrition (13%) were equivalent to those who remained (87%), their experiences during SCHIP may have differed. Fifth, although it is possible that improvements noted here may be effects of a shift from fee-for-service arrangements into managed care, this is unlikely for several reasons. First, most insurance in New York State is managed care, including Medicaid, for which enrollment into managed care has been mandatory since 1991.⁹⁷ Second, 62% of children were uninsured for ≥ 1 year before SCHIP enrollment. Third, for those who were insured previously (note that previous coverage may have ended ≥ 1 year before enrollment in SCHIP), nearly 62% were covered by private plans.

We did not examine health status. Given that health status is beyond the end of the pathway that Eisenberg and Power take as far as quality of care, it would be unreasonable to expect SCHIP insurance to affect health status or disparities in health status. In addition, because of the multifactorial nature of health status change, it would be difficult to isolate the role of SCHIP insurance in any health status improvements that could be measured in the course of a 1-year period.

External validity is limited by the study of 1 state, although New York is a large and diverse state that had the nation's largest SCHIP program at the time of the study. Findings should not be generalized to the population of near-poor children at large.^{98,99} We excluded other racial groups, did not examine language differences, and did not focus on immigrant populations, although immigration status and socio-cultural factors varied within the sample.^{34,100} Measurement of race/ethnicity followed federal guidelines and conventional practice, but heterogeneity within groups limits the usefulness of common grouping schemes.^{34,101,102} In the absence of an accepted "gold standard" for intergroup comparison, the convention of comparison to whites as a "benchmark" population was followed and is similarly limited.^{101,103}

CONCLUSIONS

We draw 3 main conclusions. First, our results suggest that the simple provision of health insurance to uninsured low-income children may enhance efforts to reduce preexisting racial/ethnic disparities in care; in this case, disparities in access to care, unmet need, and continuity of care were virtually eliminated. Even within the narrow income-eligibility

band for SCHIP, all it took to equalize the preexisting wide variation within this economically homogeneous group was provision of health insurance, dramatically improving access to care and continuity of care at a single usual place for all racial groups and virtually eliminating disparities in these measures during SCHIP.

Whenever disparities are examined, the question of controlling for other factors inevitably arises. Thus, the use of multivariate models to control for other common sources of variation such as income, parent employment, and education had 2 goals: either to explain the presence of disparities before SCHIP (ie, variation by race/ethnicity could have been attributable to variation in related underlying factors) or to explain the change in disparities during SCHIP (ie, change in outcomes could have been attributable to change in related underlying factors). We controlled for other factors in both periods and found neither of these.

Therefore, our second conclusion is that, consistent with many other studies, controlling for sociodemographic and health system factors did little to add to our understanding of baseline disparities. For some measures in our study, these factors actually masked preexisting racial/ethnic disparities that were even more pronounced on the basis of adjusted analyses than they seemed to be on the basis of unadjusted analyses.

Third, controlling for other factors did not account for the reduction in disparities observed in our study. Neither the racial/ethnic disparities observed before SCHIP nor the changes in outcomes during SCHIP were explained by other factors. Instead, controlling for underlying factors had limited added value in explaining the presence of disparities before SCHIP and likewise did not account for the reduction or elimination of disparities during SCHIP.

IMPLICATIONS

The results of this study have implications for physicians, researchers, and policymakers and for the pursuit of national goals to eliminate racial/ethnic disparities in health. First, the shift toward the USC for all or most care may reduce fragmentation of services and provide increased opportunities for primary care providers to establish and maintain relationships with children and families over time, potentially contributing to improved measures of quality over longer periods of observation.¹⁰⁴ Second, the relatively smaller scale of improvement among Hispanic children raises questions about the nature of these disparities and alternative strategies to combat them. Additional work beyond the provision of health insurance should strive to understand better the causes of continued disparity and should test creative strategies that are designed to address and eliminate disparities for Hispanic children. Third, although disparities in access to care were nearly eliminated, disparities in quality of care remained. This study highlights the importance of ongoing initiatives to improve quality of care for all racial/ethnic groups.¹

With ~4 million children enrolled in SCHIP dur-

ing 2003⁴⁸ and disparities that persist even among insured populations,^{93,105–107} it is clear that insurance is necessary but not sufficient to eliminate fully racial/ethnic disparities in health. Therefore, policymakers should maintain optimistic yet reasonable expectations for SCHIP. Our finding of reduced disparities in key child health care measures after enrollment in SCHIP represents an important achievement in providing health insurance to low-income families. Future expansion of SCHIP or of other health insurance programs for children and additional research on mechanisms of disparities may both improve care and reduce disparities among these vulnerable children.

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