

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 ($161-230\%$ 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 states⁵⁰⁻⁵⁹ and recent studies of SCHIP⁶⁰⁻⁶⁸ 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 instruments⁷⁴⁻⁷⁷ 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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REFERENCES

1. Smedley BD, Stith AY, Nelson AR, eds. Board on Health Sciences Policy. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Executive Summary*. Washington, DC: Institute of Medicine, National Academy Press; 2002
2. *Initiative to Eliminate Racial Disparities in Health*. Washington, DC: Department of Health and Human Services; 2002
3. *Healthy People 2010: Understanding and Improving Health*. 2nd ed. Washington, DC: Department of Health and Human Services; 2000
4. Lillie-Blanton M, Parsons P, Gayle H, Dievler A. Racial differences in health: not just black and white but shades of gray. *Annu Rev Public Health*. 1996;17:411–448
5. Weinick R, Zuvekas S, Cohen JW. Racial and ethnic differences in access to and use of health services, 1977–1996. *Med Care Res Rev*. 2000;57:36–54
6. Lillie-Blanton M, Rushing OE, Ruiz S. *Key Facts: Race, Ethnicity and Medical Care: Update June 2003*. Menlo Park, CA: The Henry J. Kaiser Family Foundation; 2004
7. Weinick R, Weigers M, Cohen J. Children's health insurance, access to care, and health status: new findings. *Health Aff*. 1998;17:127–136
8. Lieu TA, Newacheck P, McManus M. Race, ethnicity and access to care among US adolescents. *Am J Public Health*. 1993;83:939–941
9. Weinick RM, Krauss NA. Racial/ethnic differences in children's access to care. *Am J Public Health*. 2000;90:1771–1774
10. Newacheck PW, Hughes DC, Stoddard JJ. Children's access to primary care: differences by race, income, and insurance status. *Pediatrics*. 1996;97:26–32
11. Holl J, Szilagyi P, Rodewald L, Byrd R, Weitzman M. Profile of uninsured children in the United States. *Arch Pediatr Adolesc Med*. 1995;149:398–406
12. Simpson G, Bloom B, Parsons P. Access to health care: part I: children. *Vital Health Stat* 10. 1997;196:1–46
13. Fried V, Makuc D, Brooks R. Ambulatory health care visits by children: principal diagnosis and place of visit. *Vital Health Stat* 13. 1998;(137): 1–23
14. Guendelman S, Schwalbe J. Medical care utilization by Hispanic children. *How does it differ from black and white peers?* *Med Care*. 1986;24: 925–940
15. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academy Press; 2002
16. Klerman L, Perloff J. Recent trends in the health of US children. In: Stein R, ed. *Health Care for Children: What's Right, What's Wrong, What's Next*. New York, NY: United Hospital Fund of New York; 1997
17. Montgomery L, Kiely J, Pappas G. The effects of poverty, race, and family structure on US children's health: data from the NHIS, 1978 through 1980 and 1989 through 1991. *Am J Public Health*. 1996;86: 1401–1405

18. Weigers M, Weinick R, Cohen J. *Children's Health 1996. MEPS Chartbook No. 1*. Rockville (MD): Agency for Health Care Policy and Research; 1998. AHCPR Pub. No. 98-0008. Available at: www.meps.ahrq.gov/Papers/CB1_98-0008/CB1.PDF. Accessed March 21, 2005
19. *Understanding Different Estimates of Uninsured Children: Putting the Differences in Context*. Washington, DC: Assistant Secretary for Planning and Evaluation, Department of Health and Human Services; 2003
20. Lewit E, Schuurmann Baker L. Health insurance coverage. *Future Child*. 1995;5:192-204
21. Medicaid: *Demographics of Non-enrolled Children Suggest State Outreach Strategies*. GAO/HEHS-98-93. Washington, DC: General Accounting Office, Department of Health and Human Services; 1998
22. Guendelman S, Pearl M. Access to care for children of the working poor. *Arch Pediatr Adolesc Med*. 2001;155:651-658
23. Newacheck PW, Stoddard JJ, Hughes DC, Pearl M. Health insurance and access to primary care for children. *N Engl J Med*. 1998;338:513-519
24. Kogan MD, Alexander GR, Teitelbaum MA, Jack BW, Kotelchuck M, Pappas G. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. *JAMA*. 1995;274:1429-1435
25. Newacheck PW, Hughes DC, Cisternas M. Children and health insurance: an overview of recent trends. *Health Aff (Millwood)*. 1995;14:244-254
26. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Ann Intern Med*. 1991;114:325-331
27. Patrick DL, Madden CW, Diehr P, Martin DP, Cheadle A, Skillman SM. Health status and use of services among families with and without health insurance. *Med Care*. 1992;30:941-949
28. Cornelius LJ. Barriers to medical care for white, black, and Hispanic American children. *J Natl Med Assoc*. 1993;85:281-288
29. Stoddard JJ, St Peter RF, Newacheck PW. Health insurance status and ambulatory care for children. *N Engl J Med*. 1994;330:1421-1425
30. Himmelstein DU, Woolhandler S. Care denied: US residents who are unable to obtain needed medical services. *Am J Public Health*. 1995;85:341-344
31. Rodewald L, Shiuh T, Zill E. Health insurance and underimmunization: lessons from the 1991 National Health Interview Survey. *Pediatr Res*. 1995;1995:144A
32. Weissman J, Gastonis C, Epstein A. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. *JAMA*. 1992;268:2388-2394
33. Braveman P, Oliva G, Miller MG, Reiter R, Egarter S. Adverse outcomes and lack of health insurance among newborns in an eight-county area of California, 1982 to 1986. *N Engl J Med*. 1989;321:508-513
34. Williams D. Race and health: basic questions, emerging directions. *Ann Epidemiol*. 1997;7:322-333
35. Zuvekas SH, Taliaferro GS. Pathways to access: health insurance, the health care delivery system, and racial/ethnic disparities, 1996-1999. *Health Aff (Millwood)*. 2003;22:139-153
36. Hargraves JL. The insurance gap and minority health care, 1997-2001. *Track Rep*. 2002;1-4
37. Hargraves J, Hadley J. The contribution of insurance coverage and community resources to reducing racial/ethnic disparities in access to care. *Health Serv Res*. 2003;38:809-829
38. Newacheck PW, Hung YY, Park MJ, Brindis CD, Irwin CE Jr. Disparities in adolescent health and health care: does socioeconomic status matter? *Health Serv Res*. 2003;38:1235-1252
39. Heck KE, Parker JD. Family structure, socioeconomic status, and access to health care for children. *Health Serv Res*. 2002;37:173-186
40. Weinick RM, Zuvekas SH, Cohen JW. Racial and ethnic differences in access to and use of health care services, 1977 to 1996. *Med Care Res Rev*. 2000;57(suppl 1):36-54
41. Christakis DA. Does continuity of care matter? Yes: consistent contact with a physician improves outcomes. *West J Med*. 2001;175:4
42. Christakis DA, Mell L, Koepsell TD, Zimmerman FJ, Connell FA. Association of lower continuity of care with greater risk of emergency department use and hospitalization in children. *Pediatrics*. 2001;107:524-529
43. Christakis DA, Wright JA, Zimmerman FJ, Bassett AL, Connell FA. Continuity of care is associated with well-coordinated care. *Ambul Pediatr*. 2003;3:82-86
44. Balanced Budget Act of 1997—State Children's Health Insurance Program. Public Law 105-33 and 105-34. 10-1-1997. Title XXI of the Social Security Act. 4-8-2003
45. Department of Health and Human Services HCFA. State Child Health; Implementing Regulations for the State Children's Health Insurance Program; Final Rule. Federal Register, Code of Federal Regulations, January 11, 2001. 1-11-2001. National Archives and Records Administration
46. Dick AW, Klein JD, Shone LP, Zwanziger J, Yu H, Szilagyi PG. The evolution of the State Children's Health Insurance Program (SCHIP) in New York: changing program features and enrollee characteristics. *Pediatrics*. 2003;112(6 pt 2). Available at: www.pediatrics.org/cgi/content/full/112/6/SE1/e542
47. Trafton S, Shone L, Zwanziger J, et al. Evolution of a children's health insurance program: lessons from new York State's Child Health Plus. *Pediatrics*. 2000;105:692-696
48. Centers for Medicare and Medicaid Services. *The State Children's Health Insurance Program Annual Enrollment Report, Federal Fiscal Year 2001*. Washington, DC: Centers for Medicare and Medicaid Services; 2003
49. Shone LP, Dick AW, Brach C, et al. The role of race and ethnicity in SCHIP in four states: are there baseline disparities, and what do they mean for SCHIP? *Pediatrics*. 2003;112(6 pt 2). Available at: www.pediatrics.org/cgi/content/full/112/6/SE1/e521
50. Lave JR, Keane CR, Lin CJ, Ricci EM, Amersbach G, LaValle CP. Impact of a children's health insurance program on newly enrolled children. *JAMA*. 1998;279:1820-1825
51. Keane CR, Lave JR, Ricci EM, LaValle CP. The impact of a children's health insurance program by age. *Pediatrics*. 1999;104:1051-1058
52. Lave JR, Keane CR, Lin CJ, Ricci EM. The impact of dental benefits on the utilization of dental services by low-income children in western Pennsylvania. *Pediatr Dent*. 2002;24:234-240
53. Szilagyi P, Zwanziger J, Rodewald L, et al. Evaluation of a state health insurance program for low-income children: implications for state child health insurance programs. *Pediatrics*. 2000;105:363-371
54. Szilagyi PG, Holl JL, Rodewald LE, et al. Evaluation of children's health insurance: from New York State's Child Health Plus to SCHIP. *Pediatrics*. 2000;105:687-691
55. Szilagyi PG, Shone LP, Holl JL, et al. Evaluation of New York State's Child Health Plus: methods. *Pediatrics*. 2000;105:697-705
56. Holl JL, Szilagyi PG, Rodewald LE, et al. Evaluation of New York State's Child Health Plus: access, utilization, quality of health care, and health status. *Pediatrics*. 2000;105:711-718
57. Szilagyi P, Holl J, Rodewald L, et al. Evaluation of New York State's Child Health Plus: children who have asthma. *Pediatrics*. 2000;105:719-727
58. Shenkman E, Pendergast J, Wegener DH, et al. Children's health care use in the Healthy Kids program. *Pediatrics*. 1997;100:947-953
59. Shenkman E, Pendergast J, Reiss J, Walther E, Bucciarelli R, Freedman S. The School Enrollment-Based Health Insurance program: socioeconomic factors in enrollees' use of health services. *Am J Public Health*. 1996;86:1791-1793
60. Hill I, Lutzky AW, Schwalberg R. *Are We Responding to Their Needs? States' Early Experiences Serving Children With Special Health Care Needs Under SCHIP*. Washington, DC: Urban Institute; 2004
61. Fox HB, McManus MA, Limb SJ. *Access to Care for S-CHIP Adolescents*. (Publication No. 2243). Menlo Park, CA: Kaiser Commission on Medicaid and the Uninsured; 2003
62. Wooldridge J, Hill I, Harrington M, et al. *Interim Evaluation Report: Congressionally Mandated Evaluation of the State Children's Health Insurance Program. Mathematica Policy Research I*. Washington, DC: Department of Health and Human Services, Office of the Secretary, Assistant Secretary for Planning and Evaluation; 2003 (HHS-100-01-0002; MPR Reference No. 8782-110, 127-134)
63. Shenkman E, Steingraber H, Bono C. *Florida KidCare Program Evaluation Report*. Gainesville, FL: Institute for Child Health Policy; Agency for Health Care Administration; Florida Department of Health; Florida Department of Children and Families; The Florida Healthy Kids Corporation; 2002
64. Dubay L, Kenney GM, Haley J. *Children's Participation in Medicaid and SCHIP: Early in the SCHIP Era*. Washington, DC: Urban Institute; 2003
65. Dubay L, Hill I, Kenney GM, Haley J, Leibovitz H. *Highlights from The Urban Institute's SCHIP Evaluation*. Washington, DC: Urban Institute; 2002
66. Shenkman E, Bucciarelli R, Wegener DH, Naff R, Freedman S. Crowd out: evidence from the Florida Healthy Kids Program. *Pediatrics*. 1999;104:507-513
67. Youngblade LM, Col J, Shenkman EA. Health care use and charges for adolescents enrolled in a title XXI program. *J Adolesc Health*. 2002;30:262-272
68. Szilagyi P, Dick A, Klein J, Shone LP, Zwanziger J, McInerney T. Improved access and quality of care after enrollment in the State Children's Health Insurance Program (SCHIP). *Pediatrics*. 2004;113(5). Available at: www.pediatrics.org/cgi/content/full/113/5/e395

69. Dick AW, Allison RA, Haber SG, Brach C, Shenkman E. Consequences of states' policies for SCHIP disenrollment. *Health Care Financ Rev.* 2002;23:65–88
70. 1992 *County Health Indicator Profiles*. Washington, DC: US Bureau of the Census; 1992
71. New York State Department of Labor. *New York State Standard Metropolitan Statistical Areas (New Area Definitions)*. Albany, NY: New York State Department of Labor; 1997
72. Office of Management and Budget. Standards for defining metropolitan and micropolitan statistical areas. *Fed Reg.* 2000;65:82228–82238
73. Office of Management and Budget. *OMB Directive No. 15: Race and Ethnic Standards for Federal Statistics and Administrative Reporting*. Washington, DC: Office of Management and Budget; 1977
74. Cohen JW, Monheit AC, Beauregard KM, et al. The Medical Expenditure Panel Survey: a national health information resource. *Inquiry.* 1996;33:373–389
75. Cohen SB. The Medical Expenditure Panel Survey: an overview. *Eff Clin Pract.* 2002;5:E1
76. Design and estimation for the National Health Interview Survey, 1995–2004. *Vital Health Stat 2.* 2000;1–31
77. Blumberg SJ, Olson L, Frankel M, et al. Design and operation of the National Survey of Children with Special Health Care Needs, 2001. *Vital Health Stat 1.* 2003;1–136
78. Brach C, Lewit E, VanLandeghem K, et al. Who's enrolled in SCHIP? Findings from the Children's Health Insurance Research Initiative (CHIRI(TM)). *Pediatrics.* 2003;112(6 suppl). Available at: www.pediatrics.org/cgi/content/full/112/6/SE1/e499
79. *Learning From SCHIP I and Learning From SCHIP II*. Washington, DC: Agency for Healthcare Research and Quality; 2001
80. *The Child Health Insurance Research Initiative (CHIRI TM)*. Washington, DC: Agency for Healthcare Research and Quality; 2003
81. National Center for Health Statistics. *Definitions—Health Status, Respondent-Assessed*. Washington, DC: National Center for Health Statistics; 2004
82. Crofton C, Lubalin JS, Darby C. Consumer Assessment of Health Plans Study (CAHPS). Foreword. *Med Care.* 1999;37:MS1–MS9
83. *The Consumer Assessment of Health Plan Satisfaction (CAHPS)*. Washington, DC: Agency for Health Care Policy Research; 2003
84. Neuhaus JM, Kalbfleisch JD, Hauck WW. A comparison of cluster-specific and population-average approaches for analyzing correlated binary data. *Int Stat Rev.* 1991;59:25–35
85. Pendergast JF, Gnage SJ, Newton MA, Lindstrom MJ, Palta M, Fischer MR. A survey of methods for analyzing clustered binary response data. *Int Stat Rev.* 1996;64:89–118
86. StataCorp. *Stata Statistical Software*. College Station, TX: Stata Corp; 2003
87. Rao JNK, Thomas DR. Chi-squared tests for contingency tables. In: Skinner CJ, Holt D, Smith TME, eds. *Analysis of Complex Surveys*. New York, NY: John Wiley and Sons; 1989:89–114
88. Newhouse JP, Insurance Experiment Group. *Free for All? Lessons From the RAND Health Insurance Experiment*. Cambridge, MA: Harvard University Press; 1993
89. Hughes DC, Ng S. Reducing health disparities among children. *Future Child.* 2003;13:153–167
90. Newacheck PW, Brindis CD, Cart CU, Marchi K, Irwin CE. Adolescent health insurance coverage: recent changes and access to care. *Pediatrics.* 1999;104:195–202
91. Newacheck PW, Stein RE, Bauman L, Hung YY. Disparities in the prevalence of disability between black and white children. *Arch Pediatr Adolesc Med.* 2003;157:244–248
92. Shone L, Ryan S, Klein J, Auinger P, Szilagyi P. Access to care: can health insurance really reduce racial disparities? Implications for SCHIP. Platform Presentation at the Annual Meeting of the Academy for Health Services Research and Policy, Atlanta, GA; June 10, 2001
93. Eisenberg JM, Power EJ. Transforming insurance coverage into quality health care: voltage drops from potential to delivered quality. *JAMA.* 2000;284:2100–2107
94. Weech-Maldonado R, Morales LS, Spritzer K, Elliott M, Hays RD. Racial and ethnic differences in parents' assessments of pediatric care in Medicaid managed care. *Health Serv Res.* 2001;36:575–594
95. LaVeist T, Nickerson KJ, Bowie JV. Attitudes about racism, medical mistrust, and satisfaction with care among African American and white cardiac patients. *Med Care Res Rev.* 2000;57:146–161
96. Lewit EM, Bennett C, Behrman RE. Health insurance for children: analysis and recommendations. *Future Child.* 2003;13:5–29
97. The Reforming States Group. *Tracking State Oversight of Managed Care*. New York, NY: The Milbank Memorial Fund; 1999
98. Kenney G, Haley J. *Why Aren't More Uninsured Children Enrolled in Medicaid or SCHIP? New Federalism: National Survey of America's Families*. Washington, DC: Urban Institute; 2001
99. Holahan J, Dubay L, Kenney GM. Which children are still uninsured and why. *Future Child.* 2003;13:55–79
100. Lessard G, Ku L. Gaps in coverage for children in immigrant families. *Future Child.* 2003;13:101–115
101. Bhopal R, Donaldson L. White, European, Western, Caucasian, or what? Inappropriate labeling in research on race, ethnicity, and health. *Am J Public Health.* 1998;88:1303–1307
102. LaVeist T. Beyond dummy variables and sample selection: what health services researchers ought to know about race as a variable. *Health Serv Res.* 1994;29:1–16
103. Krieger N, Fee E. Man made medicine and women's health: the biopolitics of sex/gender and race/ethnicity. *Int J Health Serv.* 1994;24:265–283
104. Christakis DA, Wright JA, Zimmerman FJ, Bassett AL, Connell FA. Continuity of care is associated with high-quality care by parental report. *Pediatrics.* 2002;109(4). Available at: www.pediatrics.org/cgi/content/full/109/4/e54
105. Schneider EC, Zaslavsky AM, Epstein AM. Racial disparities in the quality of care for enrollees in Medicare managed care. *JAMA.* 2002;287:1288–1294
106. Schneider EC, Cleary PD, Zaslavsky AM, Epstein AM. Racial disparity in influenza vaccination: does managed care narrow the gap between African Americans and whites? *JAMA.* 2001;286:1455–1460
107. Satcher D. Eliminating racial and ethnic disparities in health: the role of the ten leading health indicators. *J Natl Med Assoc.* 2000;92:315–318

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