

# Disparities in Access to Care and Satisfaction Among U.S. Children: The Roles of Race/Ethnicity and Poverty Status

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## SYNOPSIS

**Objectives.** The study assessed the progress made toward reducing racial and ethnic disparities in access to health care among U.S. children between 1996 and 2000.

**Methods.** Data are from the Household Component of the 1996 and 2000 Medical Expenditure Panel Survey. Bivariate associations of combinations of race/ethnicity and poverty status groups were examined with four measures of access to health care and a single measure of satisfaction. Logistic regression was used to examine the association of race/ethnicity with access, controlling for sociodemographic factors associated with access to care. To highlight the role of income, we present models with and without controlling for poverty status.

**Results.** Racial and ethnic minority children experience significant deficits in accessing medical care compared with whites. Asians, Hispanics, and blacks were less likely than whites to have a usual source of care, health professional or doctor visit, and dental visit in the past year. Asians were more likely than whites to be dissatisfied with the quality of medical care in 2000 (but not 1996), while blacks and Hispanics were more likely than whites to be dissatisfied with the quality of medical care in 1996 (but not in 2000). Both before and after controlling for health insurance coverage, poverty status, health status, and several other factors associated with access to care, these disparities in access to care persisted between 1996 and 2000.

**Conclusions.** Continued monitoring of racial and ethnic differences is necessary in light of the persistence of racial/ethnic and socioeconomic disparities in access to care. Given national goals to achieve equity in health care and eliminate racial/ethnic disparities in health, greater attention needs to be paid to the interplay of race/ethnicity factors and poverty status in influencing access.

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Significant disparities in children's health care persist across race/ethnicity and socioeconomic status (SES) in the U.S.<sup>1-7</sup> Recent national initiatives to reduce these disparities reaffirm our nation's commitment to the elimination of one of its most enduring problems.<sup>8</sup> For example, Healthy People 2010 has focused national attention on racial/ethnic disparities in health care utilization and health, and in a bold step forward from Healthy People 2000, called for the elimination of disparities in health and health care access.<sup>9,10</sup> Reducing and eliminating racial/ethnic disparities in health and health care have become central public policy goals. Fundamental improvement of the nation's health cannot be accomplished without corresponding improvement in the health of racial/ethnic minorities, especially when demographic shifts will one day result in minorities becoming the numeric majority in the U.S. Eliminating disparities is also consistent with the nation's democratic principles and egalitarian commitments that lay the foundation for an equitable health care delivery system.

The objective of this study was to assess the progress made toward reducing racial/ethnic disparities in access to health care among U.S. children between 1996 and 2000 using data from a nationally representative panel survey. Passage and implementation of the State Children's Health Insurance Program (SCHIP) in 1997 and President Clinton's Initiative to Eliminate Racial and Ethnic Disparities in Health in 1998,<sup>8</sup> as well as increased general attention to health and health care disparities among children,<sup>11</sup> suggest the potential for substantial changes in health care access for racial/ethnic minorities during this study period. This study focused on race/ethnicity because of its importance in U.S. history, as evidenced in the laws, regulations, and court decisions explicitly directed at race/ethnicity. Although assessing racial/ethnic differences in health care access and outcomes is a worthy pursuit, analyses that focus solely on race/ethnicity may simply use it as a proxy for other factors that contribute to differences in health care across populations. This study included poverty status to more clearly specify whether differences across racial and ethnic groups are attributable to differences in race/ethnicity alone or to the combined influences of race/ethnicity and poverty status. *Vulnerable Populations in the United States* by Shi and Stevens (2005) highlights the importance of examining the combined influences of race/ethnicity and poverty status (and health insurance) in health care experiences.<sup>12</sup> Inclusion of SES variables in health services research on racial/ethnic disparities not only helps to shed light on racial/ethnic disparities in health care access, but provides guidance on developing policies and interventions that can address correctable issues related to the delivery of medical care, and may contribute to the reduction or elimination of differences in outcomes across populations.<sup>13</sup>

Specifically, we compared the experiences of whites vs. blacks, Hispanics, and Asians in terms of having a usual source of care, difficulty obtaining needed care, physician visits, dental visits, and satisfaction with the quality of medical care after controlling for sociodemographic characteristics including poverty status. These measures are frequently used to reflect access to care, and their selection was also based on their availability and consistency in definitions in the national surveys we used. The results of the study pro-

vide evidence on whether progress has been made in reducing disparities for children and to what extent continuing gaps exist in access to health care. They will be of value to policy makers in light of the federal government's resolve to eliminate racial disparities in health and health care by 2010.

## METHODS

### Data sources

Data for this study came from the publicly released Household Component of the 1996 and 2000 Medical Expenditure Panel Survey (MEPS) co-sponsored by the Agency for Healthcare Research and Quality and the National Center for Health Statistics. The MEPS was designed to provide health policy makers, health care administrators, and others with timely, comprehensive information about health care use and expenditures in the U.S. The household component of MEPS collects detailed data on demographic characteristics, health status, access to health care, satisfaction with care, health insurance coverage, and family income that provide an opportunity to study major determinants of health care access. 1996 was the first year of the current panel survey and 2000 was the latest at the time of this study. The year 2000 also served as the baseline for the Healthy People 2010 initiative. Detailed discussion of the complex design of MEPS has been published elsewhere,<sup>14,15</sup> but since several population subgroups were oversampled—including Hispanics and blacks—this data set affords an excellent opportunity to examine the primary care experiences of these minority groups. The current study was limited to children (ages 17 years and under) although parents or caretakers provided the data for their children.

### Study measures

**Dependent variables.** The dependent variables in this study included measures of different dimensions of health care access. Four variables were selected and coded to represent negative dimensions of access to care: (1) did not have a usual source of care (USC); (2) difficulty obtaining needed care in the last year; (3) did not have a physician or other health professional office visit last year; (4) did not have a dental visit last year (excluding children 0–2 years of age). A fifth variable was also included to reflect whether the adult respondent was satisfied with the quality of the child's medical care received. This measure was included because poor satisfaction has been associated with poorer utilization of health services.<sup>16,17</sup>

A USC is a regular place at which an individual seeks medical care when sick or in need of health advice. Having a USC is viewed as an entry point to the health care system and as a mechanism for increasing the likelihood of care continuity. The availability of a USC has been shown to make a difference in the timely and effective use of medical services.<sup>18–20</sup> Difficulty obtaining care was measured dichotomously as "difficulty in obtaining any type of health care, delaying obtaining care, or not receiving health care you thought was needed." Physician and dental visits represent the reported use of health care services and are among the most common measures of positive access.<sup>21</sup> Doctor visits were defined as any reported visit in the past year to a

physician or other health professional that did not result in a hospital admission or an overnight stay in the hospital. Dental visits were assessed for children ages two and over. Satisfaction (measured only among those with a USC) was assessed via a single question: "Overall, how satisfied are you with the quality of care you received from your provider?" Responses of "not too satisfied" and "not at all satisfied" denoted dissatisfaction (vs. "very satisfied" or "somewhat satisfied"). All data reported were reflective of the whole years of 1996 and 2000, respectively.

**Independent variables.** We identified measures within MEPS that denote race/ethnicity and socioeconomic covariates associated with access to care including poverty status.

**Race/ethnicity.** Data on race has been collected routinely since the first decennial Census in 1790.<sup>22</sup> The classification of race/ethnicity used in this analysis is consistent with the U.S. Office of Management and Budget (OMB) Directive 15, "Race and Ethnic Standards for Federal Statistics and Administrative Reporting."<sup>23</sup> Parent race/ethnicity was used in this analysis and was classified as American Indian or Alaskan Native, Asian or Pacific Islander, black (non-Hispanic), Hispanic, and white (non-Hispanic). To assure a sufficiently large sample size for performing robust multivariate analysis, we excluded American Indian or Alaskan Native from the analyses.

**Sociodemographic factors.** Since differences exist among racial/ethnic groups in many characteristics that affect access to care, we included these characteristics organized according to Andersen's behavioral model of health care access: the propensity to use medical care (predisposing factors), the ability to obtain services (enabling factors), and the level of illness or need for care (need factors).<sup>24,25</sup> Predisposing factors included age (grouped according to pre-school [1–5], primary school [6–11], and above primary school [12–17]), gender (male, female), and residence (metropolitan statistical area [MSA] vs. non-MSA). Enabling factors included parents' education (<high school, high school, or ≥some college), family's Federal Poverty Level (FPL) status (<100%, 100–124%, 125–199%, 200–399%, or ≥400%), and insurance (health maintenance organization [HMO], private insurance, Medicare, Medicaid, other, or uninsured). Need factors included health status (fair or poor vs. excellent, very good, or good), and health conditions that limit usual activities (has limiting condition or no limiting condition).

### Analysis

Analyses were performed using SUDAAN because of the multistage, stratified cluster sampling of the MEPS.<sup>26</sup> All analyses accounted for both the design effect and the sampling weights, and are nationally representative. Bivariate relationships between race/ethnicity and both sociodemographics and the access to care measures were tested using Pearson chi-square tests of association to account for multiple comparisons (Table 1). To assess the combined influences of race/ethnicity and poverty status, we examined sociodemographics and access to care measures across race/ethnicity (further subdivided by poverty status) groups using Pearson chi-square (Tables 2 and 3). We also compared access to care measures between 1996 and 2000 for those in

poverty and not in poverty within each racial/ethnic group using Pearson chi-square (Tables 2 and 3).

To examine the association of race/ethnicity with our measures of access to care while accounting for the influences of sociodemographics and poverty status, we created three logistic regression models. The first model included only race/ethnicity as an independent variable (with white as the reference). A second model included race/ethnicity, adjusting for sociodemographic characteristics (i.e., child age, child gender, parent education, geographic residence, child health insurance, child health status, and child limiting condition). A third model additionally adjusted for poverty status to highlight the role of income. Odds ratios (ORs) and 95% confidence intervals (CIs) are presented for each race/ethnicity measure for 1996 (Table 4) and 2000 (Table 5). Finally, to compare progress made between 1996 and 2000, the presence of disparities in access and satisfaction was summarized for 1996 and 2000 (Table 6).

## RESULTS

### Racial/ethnic disparities in access to care and satisfaction: descriptive results

Table 1 displays the sociodemographic characteristics and access to care measures for each racial/ethnic group for 1996 and 2000. There were few differences in child age and gender across racial/ethnic groups, though there appear to be slightly more female Asian children in the sample in 2000. Asians appeared to be most likely (and whites least likely) to reside in an MSA (94.3% and 78.3% vs. 91.5% for Hispanics and 87.8% for blacks in 2000;  $p < 0.001$ ). Parents of Hispanic and black children were most likely to not complete high school (31.4% and 14.0% vs. 5.9% for whites and 5.7% for Asians in 2000;  $p < 0.001$ ). Although poverty rates appeared to decline somewhat for all racial/ethnic groups from 1996 to 2000, they remained significantly higher in 2000 for blacks and Hispanics (29.0% and 28.1%) than for Asians and Whites (14.2% and 9.5%) ( $p < 0.001$ ). Hispanic children were the most likely racial/ethnic group to be uninsured (20.6%) compared to blacks (10.3%), Asians (7.1%), and whites (6.9%) in 2000 ( $p < 0.001$ ). Whites had the best self-reported health status and Asians had no reported limiting conditions.

Table 1 also shows disparities between racial/ethnic minority and white children in most access to care and satisfaction indicators in both 1996 and 2000. In general, minority children were more likely to lack a USC, have no health professional or doctor visit in the past year, and lack a dental visit in the past year. In 2000, Hispanic, Asian, and black children were more likely to lack a USC compared to whites (18.6%, 16.1%, and 12.4% vs. 6.1%;  $p < 0.001$ ). Disparities in health professional/doctor and dental visits appeared to be slightly greater. For example, in 2000 nearly two-thirds of Hispanic and black children reported no dental visit in the past year (65.9% and 64.8%) compared to 54.3% of Asian children and 41.1% of whites ( $p < 0.001$ ). There were no statistically significant disparities in dissatisfaction in 1996, but Asians appeared to have higher rates of dissatisfaction in 2000. There were relatively few statistically significant changes in the access to care and satisfaction indicators for each racial/ethnic group between 1996 and 2000. The only

**Table 1. Sociodemographic and access indicators by race/ethnicity, 1996 and 2000**

	1996				2000			
	Non-Hispanic White	Asian	Hispanic	Black	Non-Hispanic White	Asian	Hispanic	Black
<b>1. Sample sizes and distributions</b>								
Population size (N), weighted (in thousands)	39,697	2,201	9,915	9,563	43,557	2,412	11,229	10,818
Population proportion (percent), weighted	64.70	3.60	16.20	15.60	64.00	3.50	16.50	15.90
Sample size (n), unweighted	3,119	156	1,796	1,024	3,243	169	2,295	1,165
Sample proportion (percent), unweighted	51.20	2.60	29.50	16.80	47.20	2.50	33.40	17.00
<b>2. Factors associated with access to care</b>								
<b>A. Predisposing factors</b>								
Child age	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Percent								
1–5	27.4	30.5	31.7	27.7	28.4	31.9	33.3	28.7
6–11	36.9	37.8	37.9	38.3	35.8	33.7	35.0	37.5
12–17	35.7	31.6	30.4	34.0	35.8	34.4	31.7	33.8
Child gender (female)	49.4	46.6	49.6	48.7	47.5	54.3	48.2	49.5 <sup>a</sup>
Geographic residence (in MSA)	73.3	93.2	89.6	80.1***	78.3	94.3	91.5	87.8***
<b>B. Enabling factors</b>								
Parent education				***				***
<High school	6.7	7.8	30.4	12.1	5.9	5.7	31.4	14.0
High school	30.6	23.5	34.0	41.1	26.7	21.5	30.9	39.4
>Some college	62.7	68.7	35.6	46.8	67.4	72.8	37.7	46.7
Family FPL				***				***
<100%	13.9	25.6	38.3	37.6	9.5	14.2	28.1	29.0
100–124%	4.4	0.5	7.8	7.2	3.9	0.5	10.9	6.7
125–199%	13.7	13.0	18.3	21.8	11.5	12.9	23.1	21.4
200–399%	38.9	25.9	26.1	20.8	36.1	34.5	28.7	30.4
>400%	29.1	35.0	9.6	12.7	39.0	37.9	9.3	12.4
Child health insurance	***	***						
HMO	32.7	36.6	24.3	23.9	43.2	53.2	34.1	36.5
Private insurance	46.5	27.3	20.2	23.2	37.2	22.6	11.4	16.4
Medicare	0.1	1.7	0.1	0.6	0.4	0.0	1.0	1.7
Medicaid	10.2	20.2	27.9	35.5	11.1	15.2	31.2	33.2
Other	1.8	2.5	6.6	4.9	1.3	1.8	1.7	1.8
Uninsured	8.7	11.7	20.9	11.9	6.9	7.1	20.6	10.3
<b>C. Health need factors (child)</b>								
Fair/poor health status (vs. excellent/very good/good)	2.0	2.7	4.8	5.2***	1.9	2.5	3.1	2.2**
Has condition that limits usual activities	0.3	0.0	0.3	0.2*	0.4	0.0	0.2	0.2*
<b>3. Measures of access to care</b>								
No usual source of care	5.9	10.0	17.5	13.3***	6.1	16.1	18.6	12.4***
Difficulty obtaining care last year	13.0	12.1	16.6	9.1*	11.8	13.6	16.5	11.6
No health professional/doctor visit last year	23.6+	38.8	38.1	40.0***	27.0+	40.0	41.7	45.8***
No dental visit last year <sup>a</sup>	42.4	42.3	63.2	66.6***	41.1	54.3	65.9	64.8***
Dissatisfied with quality of medical care <sup>b</sup>	1.9	3.9+	3.5	3.3	2.0	8.5+	3.8	2.4***

SOURCE: 1996 and 2000 Medical Expenditure Panel Surveys

NOTES: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$  for the difference between the racial/ethnic groups (using an overall Pearson chi-square for the variable)+ $p < 0.05$  for the difference in the access to care measure between 1996 and 2000 within each racial/ethnic group<sup>a</sup>Excludes children ages 0 to 2<sup>b</sup>Among children with a usual source of care

MSA = metropolitan statistical area

FPL = federal poverty level

HMO = health maintenance organization

**Table 2. Sociodemographic and access indicators by race/ethnicity and poverty status, 1996**

	Non-Hispanic White		Asian		Hispanic		Black	
	Below poverty	Above poverty	Below poverty	Above poverty	Below poverty	Above poverty	Below poverty	Above poverty
<b>1. Sample sizes and distributions</b>								
Population size (N), weighted (in thousands)	5,504	34,193	563	1,638	3,792	6,123	3,597	5,966
Population proportion (percent), weighted	9.00	55.70	0.90	2.70	6.10	10.00	5.90	9.70
Sample size (n), unweighted	461	2,658	42	114	748	1,048	414	610
Sample proportion (percent), unweighted	7.60	43.60	0.70	1.90	12.30	17.20	6.80	10.00
<b>2. Factors associated with access to care</b>								
<b>A. Predisposing factors</b>								
Child age	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1-5	29.4	27.1	19.2	34.4	30.4	32.5	33.6	24.1
6-11	39.5	36.5	38.8	37.5	38.2	37.7	35.4	40.1
12-17	31.2	36.4	42.0	28.1	31.4	29.8	31.0	35.8
Child gender (female)	49.8	49.4	39.2	49.1	50.0	49.3	46.6	50.0
Geographic residence (in MSA)	60.2	75.4**	97.9	91.6	88.8	90.0	79.8	80.3
<b>B. Enabling factors</b>								
Parent education		***		***		***		
<High school	23.8	3.9	29.1	0.4	52.2	16.9	26.9	3.2
High school	39.8	29.2	33.8	20.0	31.8	35.4	48.5	36.6
>Some college	36.4	66.9	37.2	79.6	16.0	47.7	24.7	60.2
Family FPL	Not tested		Not tested		Not tested		Not tested	
<100%	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
100-124%	0.0	5.2	0.0	0.7	0.0	12.7	0.0	11.5
125-199%	0.0	16.0	0.0	17.5	0.0	29.6	0.0	34.9
200-399%	0.0	45.1	0.0	34.8	0.0	42.2	0.0	33.3
>400%	0.0	33.8	0.0	47.0	0.0	15.5	0.0	20.3
Child health insurance		***		***		***		***
HMO	11.4	36.1	0.0	49.2	6.1	35.5	4.4	35.7
Private insurance	21.6	50.5	9.0	33.6	4.8	29.8	11.7	30.1
Medicare	0.5	0.1	2.8	1.3	0.2	0.1	1.6	0.0
Medicaid	47.8	4.2	71.0	2.7	55.6	10.8	63.1	18.9
Other	4.7	1.3	9.8	0.0	12.1	3.2	7.8	3.2
Uninsured	14.0	7.9	7.4	13.2	21.2	20.7	11.5	12.2
<b>C. Health need factors (child)</b>								
Fair/poor health status (vs. excellent/very good/good)	3.8	1.7	0.0	3.7	7.5	3.1**	9.0	2.9***
Has condition that limits usual activities	0.4	0.3		0.0	0.0		0.6	0.1
0.6	0.0							
<b>3. Measures of access to care</b>								
No usual source of care	6.6	5.8	14.6	8.4	21.4	15.1**	17.0+	11.0
Difficulty obtaining care last year	19.2	12.1*	10.6	12.6	17.6	15.9	10.4	8.3
No health professional/doctor visit last year	26.9+	23.0	55.0	33.3	40.1	36.8	41.9+	38.8
No dental visit last year <sup>a</sup>	54.1	40.6***	50.2	39.5	73.0	57.0***	70.5	64.5
Dissatisfied with quality of medical care <sup>b</sup>	3.5	1.6	0.0	5.2±	4.2	3.1	2.7	3.7

SOURCE: 1996 Medical Expenditure Panel Survey

NOTES: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001 for the difference by poverty status within each racial/ethnic group (using an overall Pearson chi-square for the variable)

+p<0.05 for the difference in the access to care measure between 1996 and 2000 for those below the poverty level within each racial/ethnic group

±p<0.05 for the difference in the access to care measure between 1996 and 2000 for those above the poverty level within each racial/ethnic group

<sup>a</sup>Excludes children ages 0 to 2

<sup>b</sup>Among children with a usual source of care

MSA = metropolitan statistical area

FPL = federal poverty level

HMO = health maintenance organization

**Table 3. Sociodemographic and access indicators by race/ethnicity and poverty status, 2000**

	Non-Hispanic White		Asian		Hispanic		Black	
	Below poverty	Above poverty	Below poverty	Above poverty	Below poverty	Above poverty	Below poverty	Above poverty
<b>1. Sample sizes and distributions</b>								
Population size (N), weighted (in thousands)	4,126	39,430	343	2,069	3,156	8,073	3,142	7,676
Population proportion (percent), weighted	6.10	58.00	0.50	3.00	4.60	11.90	4.60	11.30
Sample size (n), unweighted	379	2,864	32	137	714	1,581	390	775
Sample proportion (percent), unweighted	5.50	41.70	0.50	2.00	10.40	23.00	5.70	11.30
<b>2. Factors associated with access to care</b>								
<b>A. Predisposing factors</b>								
Child age	Percent	Percent**	Percent	Percent	Percent	Percent	Percent	Percent
1-5	33.1	27.9	36.0	31.2	34.2	32.9	29.9	28.2
6-11	39.5	35.4	24.1	35.3	33.5	35.6	38.9	37.0
12-17	27.4	36.7	39.9	33.5	32.3	31.4	31.2	34.8
Child gender (female)	47.4	47.5	52.7	54.5	48.9	48.0	50.9	49.0
Geographic residence (in MSA)	74.7	78.7	91.5	94.8	91.6	91.4	83.9	89.4*
<b>B. Enabling factors</b>								
Parent education		***		*		***		***
<High school	31.0	3.3	32.1	1.4	48.7	24.7	29.5	7.8
High school	38.9	25.5	49.6	16.9	31.3	30.8	47.1	36.3
>Some college	30.2	71.2	18.4	81.8	20.0	44.5	23.4	56.0
Family FPL	Not tested		Not tested		Not tested		Not tested	
<100%	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
100-124%	0.0	4.4	0.0	0.6	0.0	15.1	0.0	9.4
125-199%	0.0	12.7	0.0	15.0	0.0	32.1	0.0	30.2
200-399%	0.0	39.9	0.0	40.2	0.0	39.9	0.0	42.9
>400%	0.0	43.1	0.0	44.2	0.0	12.9	0.0	17.5
Child health insurance		***		***			***	
HMO	11.7	46.3	35.0	56.5	13.0	41.9	7.9	48.4
Private insurance	11.4	39.8	5.7	25.6	5.0	13.8	5.4	21.0
Medicare	2.9	0.2	0.0	0.0	2.8	0.3	3.4	0.9
Medicaid	54.9	6.8	50.9	8.9	58.2	21.3	65.2	19.9
Other	3.3	1.1	7.6	0.8	1.5	1.8	3.0	1.4
Uninsured	15.8	6.0	0.8	8.2	19.5	21.0	15.1	8.4
<b>C. Health need factors (child)</b>								
Fair/poor health status (vs. excellent, very good, good)	4.9	1.6*	7.4	1.7	3.9	2.8	5.3	0.9*
Has condition that limits usual activities	1.0	0.3	0.0	0.0	0.0	0.2	0.7	0.0
<b>3. Measures of access to care</b>								
No usual source of care	7.8	5.9	15.4	16.2	23.4	16.7*	9.7+	13.5
Difficulty obtaining care last year	25.5	10.3***	12.3	13.8	22.0	14.3*	18.3	8.9*
No health professional/doctor visit last year	36.9+	25.9**	40.8	39.8	44.8	40.5	53.4+	42.7*
No dental visit last year <sup>a</sup>	63.8	38.7***	75.4	50.6	74.8	62.5**	62.9	65.5
Dissatisfied with quality of care <sup>b</sup>	7.3	1.4	25.6	5.6±	2.6	4.2	3.2	2.1

SOURCE: 2000 Medical Expenditure Panel Survey

NOTES: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$  for the difference by poverty status within each racial/ethnic group (using an overall Pearson chi-square for the variable)+ $p < 0.05$  for the difference in the access to care measure between 1996 and 2000 for those below the poverty level within each racial/ethnic group± $p < 0.05$  for the difference in the access to care measure between 1996 and 2000 for those above the poverty level within each racial/ethnic group<sup>a</sup>Excludes children ages 0 to 2<sup>b</sup>Among children with a usual source of care

MSA = metropolitan statistical area

FPL = federal poverty level

HMO = health maintenance organization

exceptions were that whites were more likely to report no health professional or doctor visit in the past year in 2000 compared to 1996 (27.0% vs. 23.6%;  $p < 0.05$ ), and Asians were more likely to be dissatisfied with quality of care in 2000 compared to 1996 (8.5% vs. 2.9%;  $p < 0.05$ ).

#### **Race/ethnicity, poverty status, and disparities in access to care and satisfaction: descriptive results**

Tables 2 and 3 present the distribution of sociodemographics and access and satisfaction measures associated with racial/ethnic groups (subdivided by poverty status groups) for 1996 and 2000. Regardless of racial/ethnic group, being in poverty was related to lower parent education and differences in health insurance type (i.e., higher rates of Medicaid coverage and lower rates of private coverage). Poverty status was also associated with higher rates of fair/poor child health status (only for Hispanics and blacks in 1996, and only for whites and blacks in 2000).

While there was a pattern (for nearly every measure) of slightly poorer access to care and satisfaction associated with poverty status, only some of the results within racial/ethnic groups were noted as statistically significant. In both 1996 and 2000, Hispanic children living in poverty were significantly more likely than Hispanic children living above poverty to lack a USC (23.4% vs. 16.7% in 2000;  $p < 0.05$ ), and lack a dental visit (74.8% vs. 62.5%;  $p < 0.01$ ). In both 1996 and 2000, white children living in poverty were significantly more likely to lack a dental visit (63.8% vs. 38.7% in 2000;  $p < 0.001$ ) and in 2000 (only) to lack a health professional or doctor visit (36.9% vs. 25.9%;  $p < 0.01$ ). Statistically significant disparities in difficulty obtaining needed care were found for Whites (in both 1996 and 2000), Hispanics (in 2000), and blacks (in 2000), but not for Asians in either year. Black children living in poverty were also more likely than whites to lack a health professional or doctor visit in the past year (53.4% vs. 42.7%;  $p < 0.05$ ).

In summary, for 1996 and 2000, statistically significant poverty-related disparities were detected in five of the 10 possible access and satisfaction indicators for Hispanics (two in 1996; three in 2000), five of 10 indicators for whites (two in 1996; three in 2000), two of 10 indicators for blacks (both in 2000), and none of the 10 indicators for Asians. In addition, for children (primarily those living in poverty) there were some statistically significant increases as well as decreases in access to care between 1996 and 2000. Both white and black children in poverty were more likely to report no health professional/doctor visit in 2000 compared to 1996 (36.9% vs. 26.9%;  $p < 0.05$ ), and Asians not living in poverty were slightly more likely to be dissatisfied with health care received in 2000 compared to 1996 (5.6% vs. 5.2%;  $p < 0.01$ ). Black children living in poverty, however, were less likely to lack a USC in 2000 compared to 1996 (9.7% vs. 17.0%;  $p < 0.05$ ).

#### **Racial/ethnic disparities in access to care and satisfaction: logistic regressions**

Tables 4 and 5 present the results of the three logistic regression models showing the association of race/ethnicity with access to care in 1996 and 2000. The unadjusted logistic regression model for each access measure reflects the total association (both direct and indirect) of race/ethnicity with

access to care. Two sets of adjusted models were also presented, one controlling for sociodemographics and a second additionally controlling for poverty status. Because whites typically report better access to health care, and are often used as the benchmark in the disparities literature, they served as the reference group in the regression analyses.

**No USC.** Significant racial/ethnic disparities in having a USC were noted between racial/ethnic minority and white children. Both before and after adjustment for sociodemographic factors and poverty status, minority children were significantly more likely to lack a USC than whites in both 1996 and 2000. For example, in the full adjusted model in 2000, Asians had 3.3 times higher odds (CI 2.0, 5.5) (OR=2.1; CI 1.1, 4.1 in 1996) than whites of not having a USC, Hispanics had 2.5 times higher odds (CI 2.0, 3.2) (OR=2.6; CI 2.1, 3.2 in 1996), and blacks had 1.9 times higher odds in both years (1996 CI 1.4, 2.6; 2000 CI 1.5, 2.5).

**Difficulty obtaining needed care.** Few disparities were detected in reported difficulty obtaining needed health care between minority and white children. Before adjustment for sociodemographic factors and poverty status (but not after), Hispanics were significantly more likely than whites to report difficulty obtaining needed health care in both 1996 (OR=1.3; CI 1.1, 1.6) and 2000 (OR=1.5; CI 1.2, 1.8). However, both before and after adjustment for sociodemographic and poverty status, blacks were significantly less likely than whites to report difficulty obtaining needed health care in 1996 (OR=0.4; CI 0.3, 0.6) and in 2000 (OR=0.6; CI 0.5, 0.8).

**No health professional or doctor visit.** Significant racial/ethnic disparities in not having a health professional or doctor visit in the past year were found between minority and white children, with minorities significantly more likely not to have a visit in the past year than whites. In both unadjusted and adjusted analyses, disparities were apparent in both 1996 and 2000 for each racial/ethnic group compared to whites. For example, in the full adjusted model in 2000, Asians had 2.1 times higher odds (CI 1.5, 3.0) (OR=2.5; CI 1.8, 3.7 in 1996) than whites of not having a health professional or doctor visit, blacks had 1.8 times higher odds (CI 1.5, 2.2) (OR=1.9; CI 1.6, 2.3 in 1996), and Hispanics had 1.5 times higher odds (CI 1.3, 1.7) (OR=1.7; CI 1.3, 1.7 in 1996).

**No dental visit in the past year.** Significant racial/ethnic disparities in having a dental visit were noted between minority and white children, with minorities significantly more likely to lack a dental visit in the past year. Both before and after adjustment, and in both 1996 and 2000, black and Hispanic children were more likely than white children to lack a dental visit in the past year. For example, in 2000, black children had 2.0 times higher odds than whites of not having a dental visit in the past year (CI 1.7, 2.5) (OR=2.2; CI 1.8, 2.6 in 1996), and Hispanic children had 1.7 times higher odds (CI 1.4, 2.0) (OR 1.5; CI 1.3, 1.8 in 1996). Both before and after adjustment, Asian children were equally as likely as white children to have a dental visit in 1996, but were more likely than whites to lack a dental visit in 2000 (OR=1.8; CI 1.2, 2.7).

**Table 4. Disparities in access to care and satisfaction indicators for racial/ethnic minorities compared to whites, 1996**

	Unadjusted odds ratio <sup>a</sup> (95% Confidence intervals)			Adjusted odds ratio without poverty <sup>b</sup> (95% Confidence intervals)			Adjusted odds ratio with poverty <sup>c</sup> (95% Confidence intervals)		
	Asian	Hispanic	Black	Asian	Hispanic	Black	Asian	Hispanic	Black
No usual source of care	1.8 (0.9, 3.3)	3.4 (2.8, 4.1)	2.4 (1.9, 3.1)	2.0 (1.0, 3.9)	2.8 (2.3, 3.5)	2.2 (1.7, 2.8)	2.1 (1.1, 4.1)	2.6 (2.1, 3.2)	1.9 (1.5, 2.5)
Difficulty obtaining care last year	0.9 (0.5, 1.6)	1.3 (1.1, 1.6)	0.7 (0.5, 0.9)	0.9 (0.5, 1.5)	1.2 (0.9, 1.5)	0.6 (0.4, 0.7)	0.9 (0.5, 1.6)	1.0 (0.8, 1.2)	0.4 (0.3, 0.6)
No health professional/doctor visit last year	2.1 (1.5, 2.9)	2.0 (1.7, 2.3)	2.2 (1.8, 2.5)	2.5 (1.7, 3.5)	1.9 (1.6, 2.2)	2.1 (1.8, 2.5)	2.5 (1.8, 3.7)	1.7 (1.5, 2.0)	1.9 (1.6, 2.3)
No dental visit last year <sup>d</sup>	1.0 (0.7, 1.4)	2.3 (2.0, 2.7)	2.7 (2.3, 3.2)	1.0 (0.7, 1.5)	1.8 (1.5, 2.1)	2.6 (2.1, 3.1)	1.0 (0.7, 1.5)	1.5 (1.3, 1.8)	2.2 (1.8, 2.6)
Dissatisfied with quality of care <sup>e</sup>	2.1 (0.8, 5.4)	1.9 (1.2, 3.0)	1.8 (1.1, 2.8)	2.5 (0.9, 6.7)	2.0 (1.2, 3.3)	1.7 (1.1, 2.7)	2.4 (0.9, 6.6)	2.2 (1.3, 3.7)	1.7 (1.1, 2.8)

SOURCE: 1996 Medical Expenditure Panel Survey

<sup>a</sup>Unadjusted model with race/ethnicity (white as the reference group) as the independent variable<sup>b</sup>Adjusted model with race/ethnicity (white as the reference group), age, gender, residence, education, insurance, health status, and limiting condition as independent variables<sup>c</sup>Adjusted model with race/ethnicity (white as the reference group), age, gender, residence, education, insurance, health status, limiting condition, and poverty status as independent variables<sup>d</sup>Excludes children ages 0 to 2<sup>e</sup>Among children with a usual source of care**Table 5. Disparities in access to care and satisfaction indicators for racial/ethnic minorities compared to whites, 2000**

	Unadjusted odds ratio <sup>a</sup> (95% Confidence intervals)			Adjusted odds ratio without poverty <sup>b</sup> (95% Confidence intervals)			Adjusted odds ratio with poverty <sup>c</sup> (95% Confidence intervals)		
	Asian	Hispanic	Black	Asian	Hispanic	Black	Asian	Hispanic	Black
No usual source of care	3.0 (1.8, 4.8)	3.5 (2.9, 4.3)	2.2 (1.7, 2.9)	3.5 (2.1, 5.7)	3.1 (2., 3.9)	2.0 (1.5, 2.6)	3.3 (2.0, 5.5)	2.5 (2.0, 3.2)	1.9 (1.4, 2.6)
Difficulty obtaining care last year	1.2 (0.7, 1.9)	1.5 (1.2, 1.8)	1.0 (0.8, 1.3)	1.2 (0.8, 1.9)	1.3 (1.0, 1.6)	0.9 (0.7, 1.1)	1.1 (0.7, 1.8)	1.0 (0.8, 1.2)	0.6 (0.5, 0.8)
No health professional/doctor visit last year	1.8 (1.3, 2.6)	1.9 (1.7, 2.2)	2.3 (1.9, 2.7)	2.1 (1.5, 3.0)	1.7 (1.5, 2.0)	2.1 (1.8, 2.5)	2.1 (1.5, 3.0)	1.5 (1.3, 1.7)	1.8 (1.5, 2.2)
No dental visit last year <sup>d</sup>	1.7 (1.2, 2.5)	2.8 (2.4, 3.2)	2.6 (2.2, 3.2)	1.9 (1.3, 2.8)	2.0 (1.7, 2.3)	2.4 (2.0, 2.9)	1.8 (1.2, 2.7)	1.7 (1.4, 2.0)	2.0 (1.7, 2.5)
Dissatisfied with quality of care <sup>e</sup>	4.7 (2.3, 9.4)	2.0 (1.3, 3.0)	1.2 (0.7, 2.2)	5.8 (2.8, 12.2)	1.4 (0.8, 2.3)	1.0 (0.5, 1.9)	5.2 (2.5, 11.0)	1.3 (0.7, 2.2)	0.8 (0.4, 1.7)

SOURCE: 2000 Medical Expenditure Panel Survey

<sup>a</sup>Unadjusted model with race/ethnicity (white as the reference group) as the independent variable<sup>b</sup>Adjusted model with race/ethnicity (white as the reference group), age, gender, residence, education, insurance, health status, and limiting condition as independent variables<sup>c</sup>Adjusted model with race/ethnicity (white as the reference group), age, gender, residence, education, insurance, health status, limiting condition, and poverty status as independent variables<sup>d</sup>Excludes children ages 0 to 2<sup>e</sup>Among children with a usual source of care



**Dissatisfaction with the quality of medical care.** Among children with a USC, some significant racial/ethnic disparities in dissatisfaction were found in 1996 and 2000. In 1996, both before and after adjustment for sociodemographics and poverty status, Hispanics (OR=2.2; CI 1.3, 3.7) and blacks (OR=1.7; CI 1.1, 2.8) (but not Asians) with a USC were more likely to be dissatisfied with the quality of care. In 2000, however, Asians were more likely than whites to be dissatisfied (OR=5.2; CI 2.5, 11.0), but Hispanics and blacks were similar to whites in dissatisfaction with the quality of care (OR=1.3; CI 0.7, 2.2; and OR=0.8; CI 0.4, 1.7, respectively).

**DISCUSSION**

The results of this study indicate that racial/ethnic minority children experience significant deficits in accessing health care compared with whites. Asians, Hispanics, and blacks were less likely than whites to have a USC, health professional or doctor visit in the past year, and dental visit in the past year. No racial/ethnic disparities were found in reported difficulty obtaining needed health care; and after adjustment for other factors, blacks were less likely than whites to report any difficulty in both 1996 and 2000. In 2000, however, Asians were more likely than whites to be dissatisfied with the quality of medical care.

Comparing 1996 with 2000 (Table 6), many of these racial/ethnic disparities in access to care persisted across both years, suggesting that racial/ethnic disparities were not resolved. After controlling for sociodemographic factors and poverty status, statistically significant disparities in access and satisfaction were found in five of 10 indicators for Asian

children (two indicators in 1996; three indicators in 2000), seven of 10 indicators for Hispanic children (four indicators in 1996; three indicators in 2000), and seven of 10 indicators for black children (four indicators in 1996; three indicators in 2000). Asians appeared to have more disparities in 2000 (compared to 1996), while progress may have occurred in reducing disparities in satisfaction with the quality of medical care among Hispanics, blacks, and whites with a USC (evidenced by a disparity in satisfaction for these two groups in 1996 that was then absent in 2000).

The findings that racial/ethnic disparities in health care access persisted in multivariate analyses that incorporated sociodemographic variables suggests race/ethnicity is not simply a straightforward proxy for easily observed variables, and that a more complex relationship is involved in the ways in which persons of minority racial/ethnic backgrounds and the health care system relate to and interact with each other. One explanation might be that most federal interventions in the past and present are related to health insurance (e.g., Medicaid, SCHIP), but the provision of health insurance alone does not ensure equity in access.<sup>4,27</sup>

Aside from the cost barrier to medical care, racial/ethnic minorities encounter barriers due to problems of availability of care (e.g., lack of a USC and differences in the setting where care is delivered), convenience of services (e.g., travel time to and waiting time at the provider office), and language and cultural barriers.<sup>28-30</sup> Providers may also lack cultural competence in their interaction with minority patients, a potential cause for dissatisfaction.<sup>31-33</sup> Thus, in addition to expanding insurance coverage, policy makers need to be concerned with nonfinancial barriers to access that contribute to disparities.

**Table 6. Summary of the presence of racial/ethnic disparities in access to care and satisfaction in 1996 and 2000**

	Asian				Hispanic				Black			
	Unadjusted <sup>a</sup>		Adjusted <sup>b</sup>		Unadjusted <sup>a</sup>		Adjusted <sup>b</sup>		Unadjusted <sup>a</sup>		Adjusted <sup>b</sup>	
	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
No usual source of care	-	+	+	+	+	+	+	+	+	+	+	+
Difficulty obtaining care last year	-	-	-	-	+	+	-	-	(r)	-	(r)	(r)
No health professional/doctor visit last year	+	+	+	-	+	+	+	+	+	+	+	+
No dental visit last year <sup>c</sup>	-	+	-	+	+	+	+	+	+	+	+	+
Dissatisfied with quality of care <sup>d</sup>	-	+	-	+	+	+	+	-	+	-	+	-

SOURCE: Based on the multivariate logistic regression results of Tables 4 and 5 using 1996 and 2000 Medical Expenditure Panel Surveys

NOTES: + Statistically significant disparity was found between the racial/ethnic group and whites during the given year.

- No statistically significant difference was found between the racial/ethnic group and whites during the given year.

(r) A statistically significant difference was found in favor of the racial/ethnic group compared to whites during the given year (i.e, a reverse disparity).

<sup>a</sup>Unadjusted model with race/ethnicity (white as the reference group) as the independent variable

<sup>b</sup>Adjusted model with race/ethnicity (white as the reference group), age, gender, residence, education, insurance, health status, limiting condition, and poverty status as independent variables

<sup>c</sup>Excludes children ages 0 to 2

<sup>d</sup>Among children with a usual source of care

Our study had a number of limitations. The secondary nature of the data set precluded us from considering all the major measures of access and qualitative experiences in health care such as continuity, comprehensiveness, coordination,<sup>34-36</sup> or family and community focus.<sup>36</sup> Caution should be exercised in interpreting the absence of satisfaction disparities in 2000 among Hispanics and blacks. This may be the result of any one or a combination of three factors: (1) satisfaction may have improved for Hispanics and blacks more than for whites; (2) satisfaction may have declined more for whites than for Hispanics or blacks; or (3) satisfaction may have improved for Hispanics and blacks while satisfaction declined for whites. While it is difficult to detect this progression (particularly while adjusting for other factors), the absence of a disparity suggests that satisfaction with the quality of care among Hispanics, blacks, and whites may have been more equitable in 2000.

It should also be pointed out that while our study included only three minority racial/ethnic groups, the U.S. population is extremely heterogeneous. Studies involving multicultural populations need to consider the complexities involved and avoid basing generalizations on broad racial/ethnic categorical definitions. Moreover, measurements of race in research are actually measures of skin color and do not capture culture, biology, values, or behavior,<sup>37</sup> and yet race is often used as a proxy for the influences of biological, cultural, socioeconomic, and political factors and exposure to racism.<sup>38</sup> These components are interrelated and may interact with each other.<sup>13</sup> Causal relationships between race/ethnicity and access are also difficult to ascertain with certainty due to the largely cross-sectional nature of the dataset and analysis.

In sum, our study demonstrates that significant racial/ethnic disparities in access persist despite national efforts at eliminating them. Continued monitoring of differences across racial/ethnic groups and targeted programs to strengthen access are necessary in light of the need to achieve equity in health care and eliminate racial and ethnic disparities in health by 2010.

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