

Variation in Racial and Ethnic Differences in Consumer Assessments of Health Care

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Background: Prior studies have documented significant racial and ethnic disparities in health and healthcare, but data about disparities from consumer assessments of care are inconsistent.

Objective: To examine racial/ethnic differences in consumer assessments and explore variation in such differences across health plans.

Methods: Data included 160 694 Consumer Assessment of Health Plans Surveys (CAHPS) responses from 307 commercial health plans and 177 489 Medicare beneficiaries in 308 Medicare+Choice managed care plans collected in 1999. We compared adjusted mean CAHPS global rating and composite scores as well as access to and use of care reported by whites, blacks, Hispanics, and Asians. We assessed variation in the differences between plan means for whites and blacks and between whites and Hispanics.

Results: Three minority groups rated their health plans higher than whites on at least 1 measure. Blacks rated their care and doctors higher than whites, while Asians rated their care and doctors lower than whites. Blacks reported better experience with care than whites, but Hispanics and Asians reported worse experience than whites. However, all minority groups reported significantly larger problems with access to and less use of healthcare. The differences between blacks and whites, and blacks and Hispanics in CAHPS measures and access/use measures varied greatly from plan to plan.

Conclusions: Significant race/ethnic differences in experience with, access to, and use of care exist in health plans. Substantial variation in racial differences suggests compromised quality of healthcare and opportunities for quality improvement.

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For decades, minority Americans have been known to have poorer health than white Americans.¹⁻⁴ Racial/ethnic disparities in access to^{2,5-7} and use of care^{3,4,6,8-11} have now been extensively documented. However, studies examining racial differences in patient assessments of care have yielded inconsistent findings. In general, Asian Americans have been found to report the lowest levels of satisfaction¹²⁻¹⁴ while other minorities reported either similar levels of satisfaction^{15,16} or less satisfaction^{17,18} than whites. At least 1 study has found that minorities were more satisfied with some aspects of care than whites.¹⁹ Most recently, Morales et al,²⁰ using the Consumer Assessment of Health Plan Survey (CAHPS) version 1.0 data, found

that minorities, with the exception of Asians/Pacific Islanders, reported experiences similar to those of whites.

Experience with care and access to and use of health services are distinct dimensions of care but have rarely been examined together. The only study that examined use of care and experience simultaneously showed that Asians had more primary care visits than whites but rated their experiences more negatively.¹² It is not known whether such different assessments of access, use, and experience with care persist among other minority groups when they are measured simultaneously. However, it is likely that each of these constructs represents a different dimension of quality. Although it is likely that some plans may do better than others in addressing differences between whites and minority groups, no study has examined the difference in the level of disparity across health plans. This may prove to be especially important in that the recent Institute of Medicine (IOM) report, *Unequal Treatment*,²¹ suggests that "lower end" plans may account for some of the disparities in treatment. Analysis of racial/ethnic differences at the plan level could identify plans with significant racial/ethnic disparities for targeted intervention and facilitate learning from exemplary plans.

While data on disparities in health are well known, a growing body of literature in access to and quality of care confirms that a component of disparities in health is within the control of healthcare professionals. This

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paper focuses on 2 such areas: patients' reported experiences of care and access to care, both of which are important components of healthcare quality.

This study updates and expands on previous studies in a number of ways. First, it uses the most recent data available from an updated version 2.0 of CAHPS to simultaneously assess ratings of care, access, and use. Second, it examines plan-to-plan variation in the difference between whites and either blacks or Hispanics. Third, it uses data from 2 different populations: those who have employer-based health insurance and those enrolled in Medicare managed care plans. Since most prior studies (as well as this one) used nonrandomized samples and had various data limitations, consistent findings from 2 large and very different populations can offer more generalizability and confidence in the results.

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METHODS

Instruments and Survey Methods

Development, administration, recommended analysis, and reporting of the CAHPS survey are described elsewhere.²² The survey includes global ratings on a 0 (worst) to 10 (best) scale, (1) his/her health plan, (2) healthcare if he/she received care, (3) his/her personal doctor if he/she has one, and (4) the specialist he/she has seen most often. The survey also includes 17 items that ask about specific experiences with care on a 1 to 3 (big problem, small problem, never a problem) or 1 to 4 scale (always, usually, sometimes, or never). These items are summarized into 5 composite groups:²²

- receiving needed care (4 items: getting doctors you are happy with, ease of obtaining specialist referral, getting care thought necessary, and problem with plan approval or delay)
- receiving care quickly (4 items: got help when called office, got routine appointment as soon as wanted, got appointment as soon as wanted when ill, and waited in the office more than 15 minutes past appointment time)
- doctor communication (4 items: doctor listens carefully, doctor explains things well, doctor shows respect for what you say, and doctor spends enough time)
- helpfulness of office staff (2 items: staff helpfulness and staff treated you with courtesy)
- customer service (3 items: problem finding and understanding written materials, getting help needed from customer service, and problem with plan paperwork).

The survey also solicits information from respondents on their use of services (whether the respondent

had any visits to a provider), and access to care (had someone they considered a personal provider, or saw a specialist when they thought they needed one.)

Data and Study Samples

Data for the commercially insured sample were extracted from the National CAHPS Benchmarking Database (NCBD), which was created to facilitate comparisons of CAHPS survey results among various types of CAHPS survey sponsors, including Medicaid agencies, public and private employers, and individual health plans. We used CAHPS 2.0 or 2.0H data from Phase II of the NCBD, based on surveys conducted in 1999. Medicare CAHPS data were obtained from the Center for Medicare and Medicaid Services (formerly HCFA) under an Intra-Agency Agreement with AHRQ. The surveys were conducted independently of one another.

Response rates for the commercially insured and Medicare samples were 43% and 80%, respectively.²³ A substantial number of respondents skipped some questions that were not applicable to them, and some did not respond to applicable questions. For example, about half of the respondents did not see specialists, so they did not report on referrals to or ratings of specialists. Similarly, over half of the respondents skipped the customer service items because they had no contact with such services. Once these skip patterns were accounted for, item response rates were high (88%-99%).

We extracted all CAHPS items, access to and use of service variables, as well as variables pertaining to personal characteristics (age, sex, race/ethnicity, education, self-rated health status) and length of enrollment in the health plan. We constructed an additional access variable indicating whether those that felt they needed to see a specialist actually saw one. We also retained health plan identifiers to facilitate cross-plan comparisons. It is possible that a given plan could be represented in both samples, but because plan identifiers were masked in each data set, we are unable to determine the degree to which this might have occurred.

Five standard CAHPS composites were created according to the CAHPS User's manual.^{20,22} We used the plan-level mean for individual items to impute missing item values. A composite rating, with the average of all included items, was created if there was at least 1 non-missing item in the composite. No data were imputed for the 4 global rating questions. Scores were transformed to a 0-100 scale, with 100 being best.

Six race/ethnicity categories were created based on respondents' self-report of Hispanic/Latino origin and race, coded as white, black, Asian, American Indian, or Native Hawaiian. A few respondents in the Medicare sample and about 0.4% in the commercial sample report-

ed more than 1 race. Because this group was too small to analyze separately, each person was placed in a single category for this analysis. If a person was identified as Hispanic and any other race, then she/he was coded Hispanic. If a person reported more than 1 non-Hispanic race, the smaller category was used to overwrite the larger one, and in the following order: Native Hawaiian, American Indian, Asian, black, and white. The resulting 6 categories are Hispanic, non-Hispanic white, non-Hispanic black, Asian, American Indian, or Native Hawaiian.

Statistical Analysis

We analyzed data from the commercial sample and Medicare sample separately, because they were collected independently and represent very different sociodemographic populations. Our first analysis compared the 4 global ratings, 5 composites, the percentage of persons having a personal doctor, access to a specialist, and the number of visits in a year across racial/ethnic groups. All measures were adjusted for factors the CAHPS development team recommended as case-mix adjusters, including age, gender, education, general health status, and length of enrollment,²² as well as health plan random effects to control for variation due to health plans. SAS PROC MIXED²⁴ was used to obtain adjusted means and pair-wise comparison of means between whites and each minority group.

In our second analysis, we aggregated individual responses to the level of health plan by racial/ethnic group, and compared plan-level means for the CAHPS measures and the measures of access and use by race and ethnicity. The CAHPS development team recommended a minimum number of respondents of 100 in order to estimate reliable plan-level measures,²² but these estimates did not consider the need to examine race/ethnic subgroups. Other investigators have successfully used as few as 30 respondents.²⁵ The commercial sample had only 30 plans with more than 100 black respondents and 16 plans with at least 100 Hispanics, and the Medicare sample had 44 plans with more than 100 blacks and 14 plans with more than 100 Hispanics. We chose 50 as a compromise to allow more plans into within-plan analysis, and performed these analyses only for plans having at least 50 black, 50 Asian, 50 Hispanics, or 50 whites. We computed the difference in adjusted means between each minority group and whites within health plans, and evaluated the difference with paired *t*-tests. Finally, we assessed the variance in within-plan differences across plans.

Results

Because the NCBD and Medicare results are so similar, and because there were a larger number of minori-

ties in the NCBD sample, for brevity we present only the results from the NCBD commercial sample in the tables. The results from the Medicare sample are available from the authors upon request. We discuss salient differences between the 2 samples in this section.

Sample Characteristics

Native Hawaiians and American Indians were excluded from our analysis because they did not meet size sample requirements. The analytical NCBD sample included 160 694 individuals who in 1999 were enrolled in 307 commercial health plans. **Table 1** presents characteristics of the race/ethnic groups in the NCBD sample. Eighty-three percent of the sample were white, 8% were black, 6% were Hispanic, and 3% were Asian. The 4 groups had similar age distributions, with a lower male proportion for blacks. Whites reported more education and better health than blacks and Hispanics; whites and Asians were similar in this regard. Lengths of enrollment in health plans were also similar across the 4 groups.

The Medicare sample included 177 489 Medicare beneficiaries enrolled in 1999 across 308 Medicare managed care plans. Eighty-five per cent were white, 9% were black, 4% were Hispanics, and 2% were Asians. As anticipated, respondents in the Medicare sample were older and less educated. Medicare enrollees were more likely than commercially insured enrollees to report poor health status.

Racial/Ethnic Differences: Person Level Analysis

Table 2 presents means and standard errors of CAHPS, access to care, and use of care measures for each of the 4 racial groups from the NCBD sample, adjusted for age, gender, self-reported health status, length of enrollment, and health plan fixed effects (the unadjusted results were not notably different).

Blacks, Asians, and Hispanics gave higher ratings of the health plan overall than the white population. This pattern did not hold for the remaining 3 global ratings: Blacks had higher scores than whites while Asians reported lower ratings; Hispanics' scores were equivalent to whites. However, with the exception of Asians, these differences were modest. For the composite items reflecting experience with care, blacks scored higher than whites while Asians scored lower; Hispanics had equal or lower scores. In general, ratings for all groups in the Medicare sample were higher than in the NCBD sample. Ratings of health plan were roughly equivalent for whites, blacks, and Hispanics. Differences between these groups for the other global ratings were smaller, but statistically significant because of large sample sizes. Like the NCBD samples, Asians had the lowest global ratings on all 4 measures. Although statistically significant, most of the person-level

Table 1. Characteristics of Sample Respondents (NCBD 2.0)

Respondent Characteristics	White N=133 213	Black N=12 643	Hispanic N=10 084	Asian N=4754	All N=160 694
Age (%)					
18-24	4	5	7	6	5
25-34	15	17	23	18	16
35-44	26	29	28	26	26
45-45	28	27	24	24	28
55-64	2	17	14	16	19
65-74	5	4	3	7	5
75 or older	2	1	1	3	2
Sex (%)					
Male	40	34	42	46	40
Education (%)					
Elementary school	1	1	5	4	1
Some high school	3	6	7	5	4
Graduated from high school	27	26	29	17	26
Some college	34	40	36	25	34
4-year college graduate	17	14	12	23	16
More than college	18	13	12	26	18
General Health Ratings (%)					
Excellent	19	14	18	17	18
Very good	41	35	37	37	40
Good	32	38	33	35	32
Fair	8	11	10	10	8
Poor	1	1	1	2	1
Time in plan (%)					
Less than 6 months	4	5	5	5	4
6-12 months	21	20	25	22	21
12-24 months	40	36	40	35	38
2-5 years	19	20	17	17	19
5-10 years	16	20	13	21	16

plans had 50 or more Asians. **Table 3** compares within-plan means for whites versus blacks and whites versus Hispanics. Because only 7 plans had a large enough Asian sample to analyze, the white-Asian comparison is not presented.

Table 3 and the **Figure** show the substantial plan-to-plan level variation in the gap between whites and other race/ethnic groups in all patient experience measures but these are most notable for measures of access to and use of care. As seen in **Table 3**, columns 2 and 5, some plans display no difference between whites and another race/ethnic group, while in other plans they are quite large. Similarly, the percent of plans in which mean ratings for whites are higher than those for blacks or Hispanics (**Table 3**, columns 3 and 6), varies by measure. Most striking is the variation in white-black or white-Hispanic differences between plans (columns 4 and 7), where the maximum difference

mean differences for CAHPS ratings and reports by race/ethnic groups were very small.

In contrast, whites were consistently more likely to report having any visits, having a personal doctor, seeing a specialist at all, and seeing a specialist when they felt it was necessary. Asian Americans were the least likely to report these types of use with the exception of seeing a specialist when one was needed, and use by blacks and Hispanics was intermediate but still significantly lower than whites. The pattern was similar, although slightly muted, among Medicare enrollees.

Racial/Ethnic Differences: Within-Plan Analysis

Of the 307 commercial plans, all plans had more than 50 whites. However, only 86 plans had at least 50 blacks, 48 plans had at least 50 Hispanics, and only 7

reflects plans for which ratings by whites are higher than those by minorities, and the minimum is the reverse (in negative), ie, minorities reporting better plan experiences with care and access than whites. These absolute differences range from as low as 1.3 points to as high as 24.4 points for whites vs blacks, and from 2.4 to 16.4 points for whites vs Hispanics. These differences are presented graphically for the ratings of health plan and personal doctor. Analyses of Medicare plans that had 50 blacks and Hispanics (n = 104 and 43, respectively) showed similar plan-to-plan variation.

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DISCUSSION

Consistent with findings from Morales et al²⁰ and other studies,^{12-16,19} this study found small, but statisti-

Table 2. Global Ratings, Composite Scores, Access and Use of Care by Racial/Ethnic Groups (NCBD 2.0)

Measures	White	Black	Hispanic	Asian
Ratings—Mean				
Rating of health plan	74.79 (.06)	78.42 (.19) [†]	76.91 (.22) [†]	75.46 (.31)*
Rating of health care	80.42 (.05)	82.35 (.17) [†]	80.35 (.20)	78.52 (.30) [†]
Rating of doctors	81.59 (.06)	83.94 (.19) [†]	81.79 (.22)	80.29 (.34) [†]
Rating of specialist	82.54 (.08)	83.71 (.27) [†]	82.54 (.30)	79.35 (.47)**
Composite scores				
Getting needed care	84.15 (.05)	84.98 (.16) [†]	81.32 (.18) [†]	82.22 (.27) [†]
Getting care quickly	68.95 (.04)	68.99 (.12)	67.55 (.14) [†]	67.23 (.20) [†]
Doctors communicate	81.43 (.06)	84.04 (.20) [†]	80.98 (.22)	78.92 (.33)**
Office staff helpful	84.74 (.06)	86.56 (.20) [†]	82.83 (.22) [†]	79.68 (.33) [†]
Customer services	70.94 (.07)	72.68 (.23) [†]	71.22 (.26)	71.07 (.39)
Access and use				
% with personal doctors	85.91 (.10)	82.05 (.32) [†]	79.83 (.37) [†]	70.45 (.53) [†]
% with 0 visits	11.59 (.09)	14.57 (.30) [†]	15.45 (.33) [†]	19.40 (.48) [†]
% seeing specialist	53.43 (.14)	46.95 (.44) [†]	49.44 (.50) [†]	39.97 (.73) [†]
% need & see specialist	94.26 (.10)	89.73 (.32) [†]	89.30 (.36) [†]	89.16 (.58) [†]

Data are displayed as mean (standard deviation). Means adjusted for gender, age, general health status, education, length of enrollment and health plan random effects.

*[†] denote differences between whites and minority are significant at $P < .05$, $.01$, respectively.

cally significant, differences in experiences with health-care associated with race/ethnicity. At the same time, it revealed substantial differences in access to and use of care between whites and minorities, confirming the disparities documented by many earlier studies. These latter findings are consistent with the findings of Schneider et al²⁶ and Virnig et al²⁷ who found large differences in quality associated with race/ethnicity in managed care plans, as measured by the Health Employer Data and Information Set.

This study also revealed substantial variation in the level of white–minority differences between plans. While this finding is consistent with what is already known about variation in utilization and quality, this is the first time that differences in ratings between race/ethnic groups have been shown to vary across health plans.

These findings raise some important questions. First, why do racial/ethnic groups report poorer access to and less use of care while simultaneously rating their experience with care as equal to or better than whites? One explanation is simply that access and experience represent 2 distinct dimensions of healthcare quality. In addition, work by Reschovsky²⁸ suggests that HMO enrollees may rate different dimensions of access differ-

ently. Another explanation may lie within the measures themselves. Access to care and use of services are more objectively measured (such as with a yes/no response or counts of visits), while ratings of experience result from a mixture of objective and subjective factors, including perceived need, individual expectations (based partially on prior experience), and the actual experience of care.²⁷ Expectations are formed from individual experience and also are shaped by context and cultural values. It is possible that some minority group members have lower expectations (owing to a history of difficult interfaces with the healthcare system) and consequently are more likely to report better experience when those expectations have been met or exceeded. Regardless, these findings underscore the need to use multiple measures of quality rather than rely on a single measure and suggest the need for more work on how expectations may impact ratings of care.

The second question raised by this study concerns the substantial plan-to-plan variation in various measures of use, access, and experience with care, indicating that some plans have more serious disparities than others. While variation is a frequent feature of healthcare in general, plans with large disparities may be major contributors to the overall disparities observed across plans.²¹ Our

Table 3. Difference in Plan-Level Mean Ratings, Composite Scores, Health Care Access and Use (NCBD 2.0)

	White vs Black (n = 86)			White vs Hispanic (n = 48)		
	Difference in Plan Mean (white-black)	% of Plans with Mean of White>Black	Max/Min of Plan Mean Difference	Difference in Plan Means (white-Hispanic)	% of Plans with Means of White>Hispanic	Max/Min of Plan Mean Difference CAHPS Measure
Ratings						
Rating of health plan	-5.31 (.32) [†]	1.16	1.32/-13.77	-3.93 (.38) [†]	8.33	3.36/-9.58
Rating of health care	-2.91 (.24) [†]	13.95	3.36/-7.79	-1.68 (.47) [†]	25.00	5.34/-9.86
Rating of doctors	-2.76 (.29) [†]	15.12	2.98/-11.35	-1.50 (.40) [†]	31.25	6.23/-6.67
Rating of specialist	-1.71 (.35) [†]	29.07	6.54/-11.29	-0.05 (.64)	50.00	7.97/-8.93
Composite Scores						
Getting needed care	-2.56 (.28) [†]	13.95	2.96/-11.99	-0.65 (.36)	43.75	5.02/-5.61
Getting care quickly	-0.39 (.20) [*]	47.67	3.24/-4.9	0.34 (.33)	54.17	6.6/-3.32
Doctors communicate	-3.32 (.33) [†]	11.63	6.82/-12.19	-1.77 (.47) [†]	27.08	5.43/-10.24
Office staff helpful	-2.84 (.32) [†]	13.95	5.3/-8.96	-0.37 (.52)	45.83	11.82/-8.04
Customer services	-4.08 (.31) [†]	6.98	3.02/-10.38	-1.71 (.52) [†]	27.08	8.29/-9.88
Access and Use						
% with personal doctors	3.17 (.64) [†]	70.93	24.37/-10.21	4.32 (.75) [†]	83.33	14.59/-11.07
% with 0 visit	-2.82 (.55) [†]	25.58	8.87/-20.35	-3.98 (.71) [†]	16.67	4.8/-13.95
% seeing specialist	9.01 (.72) [†]	93.02	29.1/-6.1	6.02 (.73) [†]	87.50	16.36/-2.36
% need & see specialist	4.57 (.65) [†]	77.91	23.96/-6.79	2.34 (.70) [†]	75.00	11.41/-8.58

Includes only plans with 50+ whites and 50+ comparing minorities.

Adjusted for gender, age, general health status, education, length of enrollment, and health plan random effects.

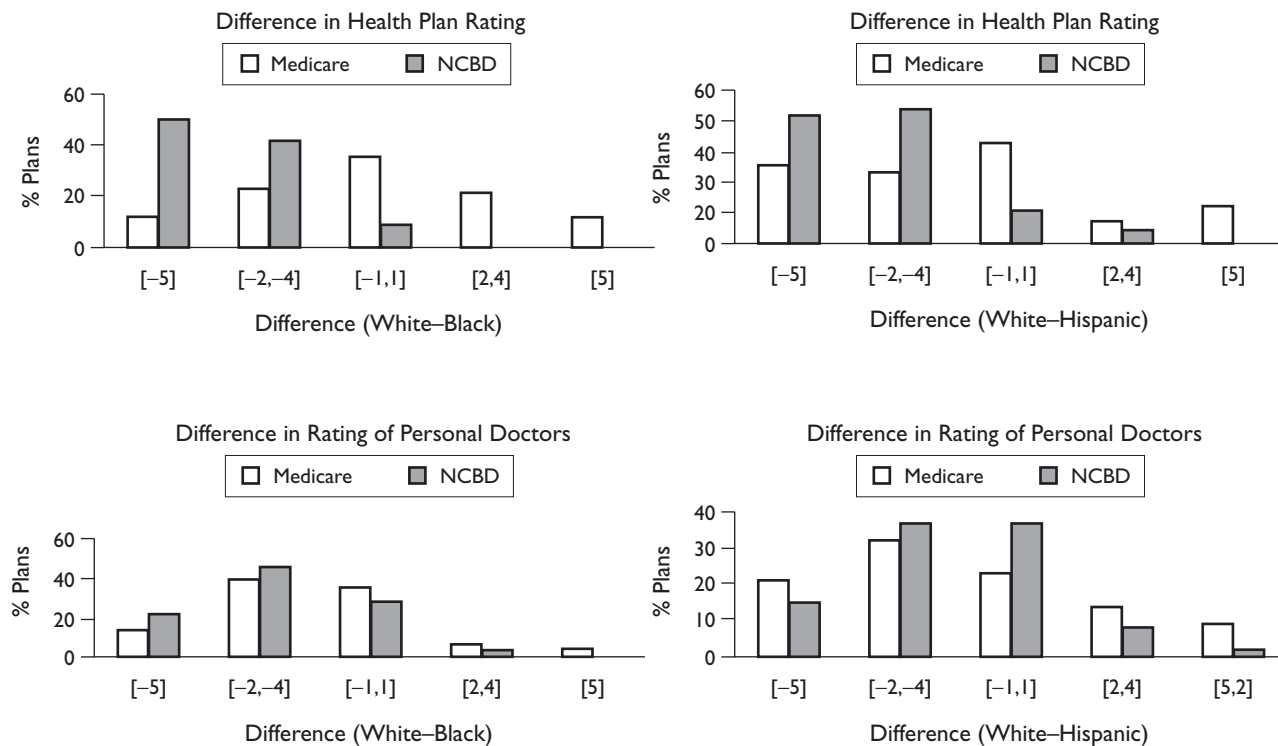
* $P < .05$, [†] $P < .001$ tested on hypothesis that the minority race has equal mean as white.

findings point to the need for further studies to identify factors with plans that are associated with disparities. Unfortunately, we do not have information about characteristics of the health plans or of their enrollees in this sample, so we are unable to partition the plan-to-plan variation into differences in variance in the underlying measure vs other factors, such as differences in enrollment patterns. We also cannot explore how plan characteristics might be associated with race/ethnic differences. Nevertheless, the imperative to eliminate disparities in care points to the need for, and potential benefit of, an in-depth study of “best practice” plans. For example, plans with less disparity may have better language access (linguistic competence), a more diverse workforce, or active outreach to enrollees who do not present for care. Prior research by Morales et al¹⁷ suggested the importance of language as a barrier to access, but language is unlikely to explain the plan-to-plan variation in ratings for blacks. Conversely, it would be important to learn whether some plan practices might unintentionally contribute to racial/ethnic differences. Identifying such practices may provide actionable information to health plans them-

selves as well as to those organizations (such as CMS Quality Improvement Organizations) that promote quality improvement activities across multiple plans.

Several limitations to this study deserve attention. First, health plans included in our analysis do not represent all health plans, and those responding from participating plans may not represent all enrollees in the plans. While consistent with other CAHPS data from the NCBD, the response rates to the commercial survey were lower than those desired²² and the degree to which response rates might differ by race/ethnicity is unknown. However, the results from the Medicare sample, which included all Medicare managed care plans and had a response rate of 80% from randomly selected enrollees, were largely similar to those from the commercial sample, suggesting that the low response rate did not create substantial bias in the results. Second, our analysis was limited by the small sample of minority respondents, which made cross-plan comparisons more challenging. Third, the surveys were administered in either English or Spanish; respondents speaking other languages may have interpreted some questions

Figure. Plan-to-Plan Level Variation in Rating of Health Plan and Personal Doctor (Medicare+Choice and NCBD)



differently. Our commercial and Medicare CAHPS instruments did not have information on primary or survey administration language to be able to distinguish the effect of language and race in our findings. Next, the distinction between access and use is not always clear. However, adjusting for age and health status provides information about use in relation to need, which most often reflects access.²⁹ Finally, we are unable to determine whether there was a response bias within any particular racial/ethnic group. Only 1 previous study¹⁷ examined response bias in consumer assessment for some racial groups, finding that the degree of response bias was small. This suggests that response bias probably did not significantly influence our results.

This study has demonstrated that the magnitude of race/ethnic differences in experiences with and use of care differs from plan to plan. It also shows that minority enrollees, particularly blacks, report significantly lower access to and use of care, but report similar or better experiences with care compared with their white counterparts in US health plans. More studies are needed to better understand underlying characteristics of respondents and the role that expectation might play in CAHPS interpretation. Factors within health plans that contribute to or ameliorate disparities should be identi-

fied and studied. Nonetheless, variation in general, and variation in the level of disparity across health plans in particular, suggests compromised quality of care¹⁰ and points toward opportunities for healthcare improvement, aimed at meeting our national goal of eliminating disparities.

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