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Do Medicaid and Commercial CAHPS Scores Correlate Within Plans?

A New Jersey Case Study

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Background: The Consumer Assessment of Health Plans Study (CAHPS) health plan survey is currently administered to large independent samples of Medicaid beneficiaries and commercial enrollees for managed care organizations that serve both populations. There is interest in reducing survey administration costs and sample size requirements by sampling these 2 groups together for health plan comparisons. Plan managers may also be interested in understanding variability within plans.

Objective: The objective of this study was to assess whether the within plan correlation of CAHPS scores for the 2 populations are sufficiently large to warrant inferences about one from the other, reducing the total sample sizes needed.

Research Design: This study consisted of an observational cross-sectional study.

Subjects: Subjects were 3939 Medicaid beneficiaries and 3027 commercial enrollees in 6 New Jersey managed care plans serving both populations.

Measures: Outcomes are 4 global ratings and 6 report composites from the CAHPS 1.0 survey.

Results: Medicaid beneficiaries reported poorer care than commercial beneficiaries for 6 composites, but none of the 4 global ratings. Controlling for these main effects, variability between commercial enrollees and Medicaid beneficiaries within plans exceeded variability by plans for commercial enrollees for 4 of the 10 measures (2 composites, 2 global ratings).

Conclusions: Within-plan variability in evaluations of care by Medicaid and commercial health plan member evaluations is too great to permit meaningful inference about plan performance for one population from the other for many important outcomes; separate surveys should still be fielded.

Key Words: patient evaluations of care, case-mix adjustment, variance components, small-area estimation, composite estimators (*Med Care* 2005;43: 1027–1033)

The Consumer Assessment of Health Plans Study (CAHPS) was initiated in 1995 by the Agency for Healthcare Research and Quality (AHRQ) to help consumers choose plans by giving them information from a survey of plan members.¹ The first CAHPS survey and reporting products were released in late 1996, and private and public sponsors across the country began using them to gather consumer assessment data for the health plans with which the sponsors contracted. These sponsors included large private employers, the state and federal governments as employers, the Medicare program, and state Medicaid programs. Some health plans were included in the samples of more than one CAHPS survey effort because the plans served enrollees from multiple employers or other insurance sponsors.

Because of the costs of conducting separate CAHPS surveys for different beneficiaries and payer classes from the same plan, each of which requires a large sample size, sponsors are interested in performing a single survey that includes enrollees from more than one sponsor group or in reducing sample sizes for the 2 surveys and using small-area estimation techniques to borrow strength from the other beneficiary population. Because commercial plans field these surveys as part of HEDIS requirements, cost savings might be greatest for the Medicaid program if a managed care plan commercial survey could be used as a partial proxy for Medicaid enrollees' experience of care.

This study compares scores from separate CAHPS surveys conducted in 1997 for 6 health plans in New Jersey that serve both Medicaid and commercial enrollees. The New Jersey Office of Managed Health Care fielded the CAHPS Medicaid managed care survey, and the Department of Health and Senior Services fielded the CAHPS survey for commercial plan enrollees.

The Policy Issue

To assess the advisability of combining surveys for different populations, it is necessary to know the extent to which the performance of a health plan in one sector (eg,

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commercial) provides similar information about that plan's performance in another sector (eg, Medicaid) and vice versa. If the scores for one beneficiary type are very predictive of the other, then combined surveys may be efficient because surveys of one beneficiary type are informative for the other beneficiary type as well. In the extreme hypothetical case that commercial and Medicaid scores were perfectly predictive of one another within plans, one would only need to survey one type of beneficiary to make valid inferences about the other type. In this instance, we would say that beneficiary type was *exchangeable*. On the other hand, if there were no relationship, then one must continue to survey commercial and Medicaid beneficiaries from the same plan as 2 unrelated populations at the same sample sizes as originally required.

There is a branch of small area estimation that builds composite estimates that combine a direct estimate of one beneficiary type with an indirect estimate based on a model.^{2,3} These estimates are weighted averages, weighted by the degree of applicability of the indirect estimates. These techniques thereby increase sample size (and thus decrease variance) but add bias if exchangeability does not hold. They can reduce the total mean squared error of estimation (variance plus squared bias) if the variance reduction exceeds the increase in bias.

In our case, the implicit model is a hierarchical model of people within beneficiary types within plans that posits additive effects of plan and beneficiary type (no plan by beneficiary type interaction). The ratio of between-beneficiary type variability within plans to across-plan variability is a continuous measure of how informative interbeneficiary type intraplan inference is. The magnitude of the variance component for intraplan variability attributable to beneficiary type (the interaction term) relative to the variance component for interplan variability tunes the weights of the composite estimate. As the interaction term increases, the weight of the indirect estimate decreases, and the extent to which sample sizes might be reduced on the 2 separate surveys without sacrificing power or precision through combined inference correspondingly decreases.

CAHPS response rates have been consistently higher for commercial beneficiaries than for Medicaid beneficiaries with averages of 63% versus 52%, respectively, for CAHPS 1.0 in the 1997–1998 National CAHPS Benchmarking Data (NCBD).⁴ Nonetheless, unless differences such as these also interact with plans, they do not limit the potential to learn about plan performance for one beneficiary type from plan performance from another beneficiary type.

Evidence on Group Differences in Experiences and Perceptions

Enrollees' ratings of their health plans could vary as a result of differences in the characteristics and preferences of the enrollees, characteristics and practices of the health plans and providers serving them, and interactions among these multiple factors. Intuitively, one might hypothesize that the experiences of subgroups of enrollees in the same plan (eg, commercial or Medicaid enrollees, different racial/ethnic groups) would differ and, therefore, so would their ratings of their health plans. Indeed, previous research provides

evidence of such variations in health plan ratings by consumer groups.

A comparative study of commercial and Medicaid managed care plan enrollees in New York found demographic and geographic differences in responses to a CAHPS survey with older, less educated, black and Hispanic enrollees outside of New York City rating their plan higher than other groups. Differences by health status also were found. For enrollees who reported they were in *excellent* or *very good* health, Medicaid plan enrollees rated their plans higher than commercial plan enrollees, but no differences were found for those in *good*, *fair*, or *poor* health.⁵ These differences were estimated across all plans of each type; the study did not examine within-plan differences for the 2 groups of enrollees.

One source of differences in ratings by enrollee group could be disparities in perceptions of care among racial and ethnic groups, which have been found in previous work.^{6–9} Murray-Garcia and colleagues found that Asians and Hispanics enrolled in HMOs rated several aspects of physician performance less favorably than whites; blacks tended to rate them equal to or higher than whites. Weech-Maldonado and colleagues found differences for enrollees of Medicaid managed care plans as a result of language barriers. Non-English-speaking Asians and Hispanics rated their plans lower on CAHPS Medicaid surveys than whites and blacks for several dimensions of care (eg, getting needed care, timeliness of care, staff helpfulness). Lurie and colleagues found that for enrollees in commercial and Medicare managed care plans, blacks tended to rate several aspects of care on CAHPS surveys higher than whites, whereas ratings by Asians were lower. All minority groups reported larger problems with access to care. Differences in ratings among groups varied greatly across health plans.

Similar group variations were obtained for patients' ratings of behavioral health care. Older and healthier patients, patients with less education, commercial plan enrollees, and those with full insurance coverage of care rated their care more highly than other patients. These differences disappeared after adjusting for enrollee characteristics and coverage, illustrating the importance of adjusting ratings for these factors when comparing plans.¹⁰

The type of health plan and care management practices is another possible source of variation in enrollees' ratings of their care, and these effects have been found after controlling for enrollee characteristics and location. Moving from low to high management of care (indemnity plans, preferred provider organizations, open-model HMOs, and closed-model HMOs), enrollees' assessments of their care were found to be lower under the more managed products, especially the closed-model HMOs, reflecting problems with provider access, convenience, and organizational factors.¹¹ Similarly, for patients in an HMO that capitated its medical groups, patients enrolled in groups that required preauthorization for access to specialty care services were found to be less satisfied with their care, more likely to want to disenroll, and less likely to recommend their group.¹²

Another study showed that the delivery of effective services was the primary factor in the satisfaction of pregnant

black women with various characteristics of prenatal care regardless of health plan type. Patients enrolled in both Medicaid and commercial plans were more satisfied when their providers spent more time with them and engaged them by explaining procedures, asking them questions, and answering their questions.¹³ See van Ryn and Fu¹⁴ and Williams et al¹⁵ for reviews of evidence of racial/ethnic disparities in health and Harkness et al¹⁶ for a review of crosscultural comparison studies.

New Contributions of This Research

The existing evidence on variations in plan ratings by enrollees highlights the importance of the underlying care delivery processes that are driving patients' experiences with their health care. These processes can differ both across plans for the same type of enrollee group and within plan for different enrollee groups.

We designed this study to estimate both types of differences, looking not only at average differences in ratings across plans for commercial and Medicaid enrollees, but also at within-plan differences for these 2 enrollee groups in each plan. It is this analysis that can help us answer the question regarding the feasibility of combined reporting for these 2 groups. We conducted a study using CAHPS 1.0 data from the summer of 1997 for the 6 New Jersey HMOs with both commercial private health plans and Medicaid beneficiaries. A total of 3027 commercial and 3939 Medicaid beneficiaries completed surveys. Excluded from the analysis were survey results for 6 other HMOs with only commercial enrollees and 4 other HMOs with only Medicaid enrollees.

The New Jersey Commercial and Medicaid CAHPS Surveys

The New Jersey Medicaid Office of Managed Health Care conducted the CAHPS Medicaid survey with 5878 Medicaid HMO enrollees in the mandatory managed care program in July to October 1997.¹⁷ In the previous year, the state had surveyed Medicaid managed care enrollees using a different questionnaire. The New Jersey Department of Health and Senior Services conducted the CAHPS survey during July through August 1997 with interviews conducted with 5754 enrollees in 12 commercial HMO plans. Six of those HMOs served both commercial and Medicaid enrollees in New Jersey, and therefore 2 samples of enrollees from these plans were interviewed: 3939 Medicaid beneficiaries and 3027 commercial enrollees.¹⁸

In interviews, HMO staff described the Medicaid program as considerably more complex administratively, as requiring social work skills among customer service staff, and as involving greater enrollee education than commercial operations. Thus, some HMOs operate their Medicaid and commercial products within different structures. Of the 6 HMOs, 3 were described by HMO management representatives as structurally the same for commercial enrollees and Medicaid beneficiaries in terms of provider networks, customer service staff, and HMO management structure. The remaining 3 plans differed between commercial and Medicaid on exactly 2 of the 3 dimensions (all 3 differed in customer service, 2 differed in the network, and one differed

in management structure). We refer to the latter 3 plans as "differentiating plans" and the former 3 as "nondifferentiating plans." If well executed, these different structures could improve Medicaid experiences relative to commercial experiences, accommodating the greater complexity of Medicaid. On the other hand, these structural differences could also represent means of minimizing expenditures on Medicaid so that they could be associated with less positive Medicaid experiences relative to commercial experiences. See Thompson et al for a further discussion of these issues.¹⁹

The Medicaid and commercial surveys used slightly different survey designs. The Medicaid survey used a mixed-mode survey design in which respondents with telephone numbers known to the state were interviewed by telephone; otherwise, mail questionnaires were sent. The commercial survey was administered by telephone. Although the Medicaid and commercial surveys were administered by different organizations, a CAHPS protocol to standardize administration in different circumstances was established and followed in both instances. The CAHPS surveys were designed to be administered by mail or phone, and mode differences have been found to be minimal.²⁰ CAHPS survey items were developed anticipating the administration to Medicaid enrollees. As part of the development process, independent consultants evaluated the items and helped the items achieve a sixth-grade reading level.

As noted in Brown et al,²¹ the use of the mixed-mode approach is designed to improve the coverage and representativeness of the Medicaid beneficiary population. Zaslavsky et al²² found that the mixed mode does, in fact, increase representativeness.

METHODS

All analyses are based on multiple linear regressions of pooled Medicaid and commercial data from the 6 New Jersey HMOs with both Medicaid and commercial beneficiaries. A series of 10 models were run, one for each of 10 outcomes. Four outcomes were global ratings on a 0 to 10 scale (regarding one's personal doctor, specialist, health plan, and overall health care received), and 6 (getting needed care, getting care without long waits, communication, office staff, customer service, and doctor knowledge/time) were composites of reports that used a 4-level response scale (always/usually/sometimes/never). See Table 1 for a description of the report items that comprised the composites.

All models were linear mixed models sharing the same specification of independent variables. Fixed effects were a dummy variable for commercial (as opposed to Medicaid) and a set of case-mix adjusters. Random effects were plans and plan by commercial interaction terms. The case-mix adjuster variables used were the standard case-mix variables used for CAHPS 1.0 (self-rated health, age, education) plus a dummy variable for beneficiary gender.^{4,23} The beneficiary gender variable was also used because commercial and Medicaid plans differ substantially from one another in the proportion of beneficiaries who are female. Gender is not normally used as a case-mix adjuster for CAHPS because it

TABLE 1. CAHPS 1.0 Composites

Composite Measure	Survey Items in Composite
Getting needed care	How often did you get the tests or treatment you thought you needed? How often did your health insurance plan deal with approvals or payments without taking a lot of your time and energy? Was it easy to find a personal doctor or nurse you are happy with? Was it always easy to get a referral when you needed one?
Timeliness of care	How often did you get the medical help or advice you needed when you phoned the doctor's office or clinic during the day Monday to Friday? When you tried to be seen for an illness or injury, how often did you see a doctor or other health professional as soon as you wanted? When you needed regular or routine health care, how often did you get an appointment as soon as you wanted? How often did you wait in the doctor's office or clinic more than 30 min past the appointment to see the person you went to see?
Provider communication	How often did your doctors or other health professionals listen carefully to you? How often did your doctors or other health professionals explain things in a way you could understand? How often did your doctors or other health professionals show respect for what you had to say? How often did your doctors or other health professionals spend enough time with you?
Staff helpfulness	How often did office staff at your doctor's office or clinic treat you with courtesy and respect? How often was office staff at your doctor's office or clinic as helpful as you thought they should be?
Plan service	How often did you have more forms to fill out for your health insurance plan than you thought was reasonable? How often did you get all the information or other help you needed when you called the health insurance plan's customer service? How often were the people at the health insurance plan's customer service as helpful as you thought they should be?

varies very little among commercial plans. All analyses were carried out using SAS PROC MIXED (version 8).

Variance components for random effects were used to compare the magnitudes of variation in ratings and reports across plans within the same beneficiary type (the plan variance component) to variation in ratings and reports within plan but across beneficiary type (the plan by commercial variance component). All tests were 2-sided and used the 5% standard of statistical significance.

A second set of fixed-effect regressions sought to elucidate the influence of structural differences on within-plan differences in CAHPS ratings and reports by using a Medicaid indicator, a "differentiating plan" indicator, and the interaction between those terms (as well as the same fixed-effect case-mix adjustors described here) as predictors of the same set of CAHPS ratings and reports. Note that in this multivariate model, the *Medicaid* term estimates the difference between Medicaid and commercial in nondifferentiating plans, the *differentiating* term estimates the difference between differentiating and nondifferentiating plans in terms of their commercial product, and that the interaction estimates the extent to which the difference between Medicaid and commercial differs as a function of structural differences.

RESULTS

The results regarding differences in CAHPS scores for Medicaid and commercial enrollees in the 6 HMOs are summarized in Table 2. Overall, commercial beneficiaries rated plans higher than Medicaid beneficiaries for 4 of 6 report composites (column 2). None of the 4 global ratings showed a significant overall difference between commercial and Medicaid beneficiaries.

All 10 outcomes showed significant variation by plan (column 3). The difference between commercial and Medicaid beneficiaries differed significantly by plan for 7 of 10 outcomes: 2 of 4 global ratings and 5 of 6 report composites (column 4 by block tests of the set of plan by Medicaid interactions). In these 7 instances, the within-plan variance component is 67% to 325% as large as the between-plan variance component (column 5). For 2 outcomes (rating of doctor, rating of specialist), maximum likelihood estimates of variance components for plan-by-Medicaid interactions were zero, meaning that they were consistent with exchangeability of beneficiary type. Overall, point estimates for within-plan variance components exceeded point estimates for between-plan variance components for 4 of 10 outcomes. There were 4 instances in which the within-plan variation by type is both statistically significant and larger than between-plan variation: rating of health plan, rating of all health care, long waits, and communication.

The sixth column of Table 2 converts the ratio of variance components into an easily understandable form: the R-square that would result from predicting plan performance for one beneficiary type from plan performance of the other beneficiary type. These measures are an index of the extent to which the implicit model of no plan by beneficiary-type interactions holds, with R-squares of one corresponding to exchangeability of beneficiary type. They are calculated as the inverse of the square of the variance component ratio plus one. Note that these R-squares are less than 0.4 for 7 of 10 measures and less than 0.3 for 5 of 10 measures, including 2 overall ratings. This inconsistency can be illustrated with strong shifts in rankings among the 6 plans by beneficiary type. For example, the best 2 plans with respect to waits for

TABLE 2. Comparison of CAHPS Scores for Enrollees in Commercial versus Medicaid Products of the Same New Jersey Health Plans, 1997 Variances

Measure	Commercial Fixed-Effect Coefficient	Across-Plan Within-Beneficiary Type Variance Component	Across-Beneficiary Type Within-Plan Variance Component	Ratio of Within Plan to Across Plan Variance Components	R-square for Predicting Commercial From Medicaid or Vice Versa
Ratings (0–10 scale)					
Rating of health plan	−0.033	0.044*	0.053*	1.211	0.205
Rating of all health care	0.067	0.028*	0.033*	1.156	0.215
Rating of doctor	0.008	0.015*	(0) [†]	(0)	(1.000)
Rate of specialist	0.078	0.051*	(0) [†]	(0)	(1.000)
Composite reports (1–4 scale)					
Getting needed care	0.194*	0.007*	0.005*	0.671	0.358
Customer service	0.201*	0.011*	0.008*	0.764	0.321
Long waits	0.130	0.005*	0.015*	3.250	0.055
Courtesy of office staff	0.045	0.002*	0.002*	0.854	0.291
Communication	0.079*	0.002*	0.002*	1.068	0.234
Doctor knowledge and time	0.160*	0.007*	<0.001	0.076	0.864

*P < 0.05.

[†]F-statistic less than 1, so variance component estimated at 0.

Medicaid beneficiaries are the worst 2 plans with respect to waits for commercial beneficiaries (these are the only plans in which commercial and Medicaid waits are similar). The 2 plans that have the worst customer service for Medicaid beneficiaries have the best customer service for commercial beneficiaries.

Table 3 summarizes the associations of structural differences with the size and direction of Medicaid versus commercial differences. Six of 10 measures (all 6 report composites) show significant differences between Medicaid and commercial in nondifferentiating plans, all in the direction of more favorable commercial reports (column 2). For example, within nondifferentiating plans, Medicaid reports of

customer service averaged 0.236 points lower than commercial reports of customer service. Among commercial enrollees, differentiating plans had higher-rated doctors than nondifferentiating plans (by an average of 0.166 points), but were less favorably rated as plans than nondifferentiating plans (column 3). Finally, 3 of 10 measures show evidence of significantly different Medicaid versus commercial gaps when there is different structure: rating of all health care, getting needed care, and communication. In all 3 cases, different structure for Medicaid and commercial was associated with a within-plan discrepancy that was less favorable to Medicaid (column 4). In the case of getting needed care and communication, Medicaid ratings were less favorable even in

TABLE 3. Comparisons of CAHPS Scores for Enrollees in Commercial versus Medicaid Products Within Plans by Plan Structure (Differentiating or Nondifferentiating Between Products)

Measure	Coefficients		
	Medicaid (Medicaid vs Commercial, Nondifferentiating Plans)	Differentiating (Differentiating vs Nondifferentiating for Commercial Product)	Medicaid by Differentiating Plan Interaction
Ratings (0–10 scale)			
Rating of health plan	0.120	−0.188*	0.130
Rating of all health care	0.109	0.157	−0.362*
Rating of doctor	0.090	0.166*	−0.040
Rate of specialist	−0.052	0.148	−0.239
Composite (1–4 scale)			
Getting needed care	−0.210*	0.060	−0.147*
Customer service	−0.236*	−0.053	0.119
Long waits	−0.198*	−0.021	−0.030
Courtesy of office staff	−0.099*	−0.028	0.009
Communication	−0.079*	0.048	−0.099*
Doctor knowledge and time	−0.181*	0.056	−0.081

*P < 0.05.

nondifferentiating plans, but this was even more the case in differentiating plans. For example, for getting needed care, Medicaid had ratings that were 0.210 points lower than commercial within nondifferentiating plans, but Medicaid ratings were 0.357 points ($0.210 + 0.147$) lower than commercial for differentiating plans. In the case of rating of health care, Medicaid reports are less favorable than commercial reports only in differentiating plans.

DISCUSSION

One way to reduce the costs of administering the CAHPS survey is to field it using a combined sample of commercial and Medicaid enrollees within each health plan. However, this approach assumes that the direction and magnitude of within-plan differences between CAHPS scores for Medicaid and commercial enrollees are similar across plans. Medicaid and commercial samples could be combined even if their respective scores were not expected to be equivalent on average. A constant difference across plans could be corrected by applying a simple constant. In this study, the Medicaid scores are consistently lower for report composites. If this difference were representative of average differences for all plans, the adjustment constant could be calculated from these data. None of the 4 global ratings showed a significant overall difference between Medicaid and commercial beneficiaries, which is consistent with prior research (eg, Weech-Maldonado et al⁸) showing reports to be more sensitive to differences between subgroups.

To fully address comparability of scores for different enrollee groups, however, the within-plan differences of scores also need to be considered. One could combine data and estimate a plan's commercial score as a weighted average of commercial and Medicaid scores, weighting commercial more heavily (and vice versa) using composite estimators discussed in the small area estimation and empirical Bayes literature.²⁴ Some savings in the total sample size needed would be realized, but this savings will only be meaningful if the within-plan variance is substantially smaller than the between-plan variance.

This study showed that, indeed, there was wide variation across New Jersey HMOs in score differences for Medicaid and commercial enrollee samples. For 4 of 10 measures, large and statistically significant within-plan variation precludes any useful combination of Medicaid and commercial scores. Within-plan variation was greater than between-plan variation for the rating of health plan, the rating of all health care, the long wait composite, and the communication composite.

There is some evidence that plans with structure that differs for commercial and Medicaid have greater discrepancies and are less favorably rated by Medicaid enrollees. In particular, lesser ease for Medicaid beneficiaries in finding in-plan doctors in differentiating plans is consistent with the more restrictive networks for Medicaid enrollees that characterize 2 of 3 differentiating plans. Nonetheless, different structure alone does not explain all of the observed within-plan variation in ratings and reports by product. Of the 4 outcomes in which differentiating structure is associated with

greater gaps in favor of commercial beneficiaries, only one is among the 6 outcomes with the greatest within-plan variability.

We conclude from these findings that a decision to combine Medicaid and commercial health plan enrollees in one CAHPS survey sample would risk losing important differences in perspectives of these 2 groups regarding their health plan experiences. In particular, the finding that the 2 groups in some HMOs in the sample reported quite different experiences, but those in other HMOs had more similar experiences, has the implication that it is impossible to know in advance how the experience of Medicaid and commercial populations may differ in any given health plan. Our analysis of the correlation between CAHPS scores and plan features suggests that independent samples must be drawn to assess commercial and Medicaid experiences within a given plan, and that there is little opportunity to save on sample size by making inferences to one population from another within the same plan. Assuming these results are generalizable, it is advisable to continue sampling from commercial and Medicaid enrollees separately to ensure valid estimates of the experiences of both groups.

In addition, although plan managers may be interested in interplan variability to understand their performance relative to competitors, the substantial intraplan variation by beneficiary type relative to the average Medicaid versus commercial difference may represent particularly actionable areas of improvement.

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REFERENCES

1. Crofton C, Lubalin JS, Darby C. Consumer Assessment of Health Plans Study (CAHPS). Foreword. *Med Care*. 1999;37(suppl):MS1-9.
2. Ghosh M, Rao JNK. Small area estimation—an appraisal. *Stat Sci*. 1994;9:55-76.
3. Rao JNK. Some recent advances in model based small area estimation. *Survey Methodology*. 1999;25:175-186.
4. Elliott MN, Swartz R, Adams J, et al. Case-mix adjustment of the National CAHPS benchmarking data 1.0: a violation of model assumptions? *Health Serv Res*. 2001;36:555-573.
5. Roohan PJ, Franko SJ, Anarella JP, et al. Do commercial managed care members rate their health plans differently than Medicaid managed care members? *Health Serv Res*. 2003;38:1121-1134.
6. Murray-Garcia JL, Selby JV, Schmittiel J, et al. Racial and ethnic differences in a patient survey: patients' values, ratings, and reports regarding physician primary care performance in a large health maintenance organization. *Med Care*. 2000;38:300-310.
7. Weech-Maldonado R, Morales LS, Elliott M, et al. Race/ethnicity, language, and patients' assessments of care in Medicaid managed care. *Health Serv Res*. 2003;38:789-808.

8. Weech-Maldonado R, Morales LS, Spritzer K, et al. Racial and ethnic differences in parents' assessments of pediatric care in Medicaid managed care. *Health Serv Res.* 2001;36:575-594.
9. Lurie N, Zhan C, Sangl J, et al. Variation in racial and ethnic differences in consumer assessments of health care. *Am J Manag Care.* 2003;9:502-509.
10. Carlson MJ, Shaul JA, Eisen SV, et al. The influence of patient characteristics on ratings of managed behavioral health care. *J Behav Health Serv Res.* 2002;29:481-489.
11. Reschovsky JD, Kemper P, Tu H. Does type of health insurance affect health care use and assessments of care among the privately insured? *Health Serv Res.* 2000;35:219-237.
12. Kerr EA, Hays RD, Mitchinson A, et al. The influence of gatekeeping and utilization review on patient satisfaction. *J Gen Intern Med.* 1999;14:287-296.
13. Handler A, Rosenberg D, Raube K, et al. Prenatal care characteristics and African-American women's satisfaction with care in a managed care organization. *Womens Health Issues.* 2003;13:93-103.
14. van Ryn M, Fu SS. Paved with good intentions: do public health and human service providers contribute to racial/ethnic disparities in health? *Am J Public Health.* 2003;93:248-255.
15. Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: Findings from community studies. *Am J Public Health.* 2003;93:200-208.
16. Harkness JA, van de Vijver FJR, Mohler PP. *Cross-Cultural Survey Methods.* New York: Wiley; 2002.
17. Farley DO, Short PF, Elliott MN, et al. Effects of CAHPS health plan performance information on plan choices by New Jersey Medicaid beneficiaries. *Health Serv Res.* 2002;37:985-1007.
18. Center for Public Interest Polling. *HMO Member Satisfaction Survey:* New Jersey: Technical Report prepared for the New Jersey Department of Health and Senior Services, The Eagleton Institute, Rutgers University; 1997.
19. Thompson J, Ryan K, Bost J. Quality of care in Medicaid managed care vs commercial managed care plans: reply. *JAMA.* 2004;291:1196-1197.
20. Fowler FJ, Gallagher PM, Nederend S. Comparing telephone and mail responses to the CAHPS survey instrument. *Med Care.* 1999;37(suppl):MS79-88.
21. Brown J, Nederend SE, Hays RD, et al. Special issues in assessing care of Medicare recipients. *Med Care.* 1999;37(suppl):MS79-88.
22. Zaslavsky AM, Zaborski LB, Cleary PD. Factors affecting response rates to the consumer assessment of health plans study survey. *Med Care.* 2002;40:MS41-49.
23. Zaslavsky AM, Zaborski L, Cleary PD. Does the effect of respondent characteristics on consumer assessments vary across health plans? *Med Care Res Rev.* 2000;57:374-394.
24. Carlin BP, Louis TA. *Bayes and Empirical Bayes Methods for Data Analysis,* 2nd ed. Boca Raton: Chapman&Hall/CRC; 2000.