

# WORKING P A P E R

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## Analysis of Case-Mix Strategies and Recommendations for Medicare Fee-for-Service CAHPS

Case-Mix Adjustment Report: 2004

MARC N. ELLIOTT, KATRIN HAMBARSOOMIANS,  
AND CAROL A. EDWARDS

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Prepared for Edward Sekscenski

Centers for Medicare & Medicaid Services

7500 Security Boulevard

Mail Stop S1-15-03

Baltimore, MD 21244

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Prepared for

**Edward S. Sekscenski**  
Centers for Medicare & Medicaid Services  
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Mail Stop S1-15-03  
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ANALYSIS OF CASE-MIX STRATEGIES AND RECOMMENDATIONS FOR MEDICARE  
FEE-FOR-SERVICE CAHPS

CASE-MIX REPORT: 2004

RAND Task Leader: Marc N. Elliott  
RAND MFFS Team: Katrin Hambarsoomians and Carol Edwards

Federal Project Officer: Edward S. Sekscenski

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## EXECUTIVE SUMMARY

For readers familiar with the 2000-2002 (Years 1-3) Case-Mix Reports, we will briefly describe how this report differs from the previous year’s report. First, this report seeks to evaluate the stability of many of the findings and resultant decisions from the 2000-2002 Case-Mix Reports, including the choice of case-mix adjusters, their parameterization, and their impact. Second, we have reformatted the presentation of information in a way that favors comparative tables across years were possible and which relegates older data to the Appendix when this is not possible, with the hopes of producing a more concise document.

The Medicare Fee-for-Service (MFFS) Consumer Assessment of Health Plans (CAHPS) project is centered around two types of comparisons: beneficiary comparisons of MFFS and Medicare Advantage (MA, formerly Medicare Managed Care) within local areas and administrative comparisons of MFFS across local areas. Case-mix adjustment (CMA) is a central element in these comparisons. CMA attempts to remove from ratings and reports of care response patterns that are systematically associated with such patient-level characteristics as demographics, socio-economic status, and general health status, which may vary considerably across reporting units. These systematic patterns of association may reflect “response bias,” response patterns that do not correspond to actual differences in quality of care. In any event, these are patient characteristics that are generally agreed to be beyond the control of providers or plans once they have been selected by beneficiaries. The goal of CMA can therefore be thought of as follows: to estimate the ratings and reports that a plan or collection of FFS providers would have received if all providers and plans treated the same standardized population of patients (Medicare beneficiaries). This adjustment should make attributions of ratings and reports to FFS providers and MA plans more appropriate, supporting better decision-making by beneficiaries and quality improvement by PROs and HCFA.

The two goals of MFFS CMA (within-MFFS comparison and MFFS-vs.-MA comparison) suggest two different, but similar, CMA models. Table ES-1 describes the independent variables recommended for case-mix adjustment. This set of variables is the same as that used in the previous year.

Table ES-1: Description of Independent Variables Used in MFFS Case-Mix Adjustment, 2004 (Year 5)

Name (Dummies)	Description	Response Options
AGE (AGE44, AGE4564, AGE6569, AGE7579, AGE8085, AGE85)	Age	<44, 45-64, 65-69, 70-74, 75-79, 80-85, >85

EDUC (LESS8GRD, SOMEHIGH, SOMECOLL, COLLGRAD, COLLMORE)	Education	<8th grade, some high school, high school graduate or GED, some college (but less than 4 yr. Degree), 4 year college graduate, >college graduate (some graduate school beyond the 4 year degree)
GHP (EXCEL, VERYGOOD, FAIR, POOR)	General health perception	Excellent, very good, good, fair, poor
MHP (MHEXCEL, MHGOOD, MHFAIR, MHPOOR)	Mental health perception	Excellent, very good, good, fair, poor
(PROXY, ANSPROXY)	Proxy respondent status	No assistance on survey, someone helped but did not answer for you, someone answered for you
DUALELIG <sup>1</sup>	Dual-eligibility indicator (eligible for Medicaid program)	Yes, no

The present study found that the case-mix adjusters employed in 2001-2003 MFFS-vs.-MA CMA (age, education, self-rated health status, self-rated mental health status and proxy respondent status<sup>2</sup>) constitute an effective case-mix model for both comparison purposes. Self-rated health, self-rated mental health, and education were the three most important CMA variables. An indicator of dual-eligibility, long used in the within-MFFS model, is a useful addition to the MFFS-vs.-MA model, given the new inclusion of the dually eligible in these comparisons. These findings are consistent with CMA results for 2000-2003.

Within-MFFS CMA employs the above independent variables plus dummies corresponding to the geographic units being compared (county-based sampling stratum, state, or HCFA region) in a linear regression. In these regressions, CAHPS® ratings in reports serve as dependent variables, sometimes in their original forms, sometimes dichotomized to correspond to displays of data to consumers. Although age is very important for adjusting the rating of Medicare, the most important CMA variables for within-MFFS CMA 2002-2004 were education and self-rated mental health.

In MFFS-vs.-MA CMA these same variables from Table 1 also serve as independent variables in a linear regression, but dummies correspond to MA plans, with MFFS treated as an additional “plan.” While the direction of CMA coefficients are similar for MFFS and MA, the magnitudes of the effects sometimes differ. In 2000- 2001, the well-established tendency of healthier beneficiaries<sup>3</sup> to rate their care more positively or to report better health

<sup>1</sup> CMS data contain the indicator of state buy-in, which is a proxy for dual-eligibility status; state buy-in can exist for an individual who is not actually on Medicaid

<sup>2</sup> While proxy respondent status has only a small empirical effect on CMA, it has been included because many stakeholders feel it is important for the face-validity of CMA.

<sup>3</sup> As measured by general self-rated health

care experiences was considerably stronger in MA than in MFFS, with MA slopes generally 50 to 100% larger than MFFS slopes for the general self-rated health item for most subjective global ratings and many objective report items. In other words, ratings and reports of one's health care were considerably more sensitive to one's (general) health status in MA than it was in MFFS. In 2002-2004, this pattern was largely restricted to the global ratings. If this is a reliable trend, and if one considers the report items to be more objective, one possible interpretation of these findings would be that health-status based differences in MFFS and MA experiences may be diminishing, though not the perceptions of those differences. Interestingly, the self-rated mental health item did not follow this pattern- mentally healthier beneficiaries reported more positively than less mentally healthy beneficiaries to the same extent in MFFS and MA, 2000-2004. In the case of the global rating of Medicare or Medicare Advantage Plan, the tendency of the dually eligible to be especially positive about Medicare was stronger than the tendency of the dually eligible to be especially positive about Medicare Advantage. For three report items within the Getting Needed Care composite and three report items within the Getting Care Quickly composite, the dually eligible provided less favorable reports than others within MFFS, whereas within MA dually eligible differed little or not at all from other beneficiaries.

A major implication of the difference in general health status coefficients is that the difference between the case-mix adjusted mean of a MA plan and a FFS reporting entity depends upon the reference population. Case-mix adjustment to a healthy reference population would be relatively more favorable to MA, and case-mix adjustment to an unhealthy reference population would be relatively more favorable to MFFS. In 2000-2004 Medicare Compare consumer materials MFFS-vs.-MA CMA used the midpoint of MFFS beneficiary and MA beneficiary characteristics as the reference population. Because of the generally poorer health status of MFFS beneficiaries (even excluding the dually-eligible), the GHP component of CMA tends to adjust in favor of MFFS relative to MA.

In comparing MFFS and MA, there was concern that underlying geographic factors not captured in a case-mix model might inappropriately influence MFFS-vs.-MA comparisons. In order to ensure geographic equivalence of state-level comparisons county-based "geographic equivalence weights" were created (GEW) in the "states"<sup>4</sup> where MA exists. These weights were then combined with MFFS non-response weights.

Comparison weights have gone from moderate adjustments in favor of MA in 2001 to very small adjustments 2002-2004. One interpretation is that MFFS sample was initially scarce in the geographic regions that had the least positive Medicare experiences among those regions with MA penetration. The shrinking effect of the comparison weights may be attributable to the reallocation of MFFS sample into the counties with high MA penetration but low population that were initially unrepresentative, in the efforts to reduce the comparison weights design effect. In other words, the geographic distribution of the MFFS sample is much better matched to MA in 2004 than it was in 2001.

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<sup>4</sup> Including the District of Columbia and Puerto Rico

The impact of case-mix adjustment on Within-MFFS comparisons has remained moderate. The adjustments for the most affected states are quite substantial for both between-state comparisons of MFFS and within-state comparisons of MFFS with MA. Nationally, case-mix adjustment has gone from moderate adjustments in favor of MA in 2001 to small adjustments in favor of MA in 2002 to moderate adjustments in favor of MFFS in 2003-2004. A similar pattern exists for case-mix adjustment of state-level comparisons of MA and MFFS, except that the amount of adjustment of these estimates by CMA has increased notably 2002-2004.

Adjustments favoring MA probably correspond to MA having a higher proportion of certain types of negative responders: the young and the better educated. Adjustments favoring MFFS probably correspond to MFFS having a higher proportion of a different class of negative responders: the unhealthy. The shift from adjustments favoring MA to adjustments favoring MFFS could mean that age and education selection into MA is becoming weaker or is being dominated by stronger selection on the basis of health. Future research should investigate trends in MFFS vs. MA case-mix demographics.