



Implementing the HEDIS[®] Medicare Health Outcomes Survey

Medicare Health Outcomes Survey: Differentiating Health Status Within and Across Different Medicare Programs

FINAL

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Prepared for the Centers for Medicare & Medicaid Services

Under Contract Number HHSM-500-2009-00051C

Y2 Deliverables 406 and 408

February 22, 2012

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Summary

Health care reform changes have drawn attention to Medicare quality reporting and the experience of vulnerable Medicare enrollees in specialized health plans: Medicare Advantage Special Needs Plans (SNPs) and Program for All Inclusive Care for the Elderly (PACE) plans. However, policymakers face challenges in distinguishing plan performance based on current quality measurement efforts. At the program level, policymakers want to know how Medicare programs compare to each other, particularly the uniqueness of SNPs and PACE compared to regular Medicare Advantage. At the plan level, there have been difficulties demonstrating distinction among Medicare health plans using physical and mental health scores from the Medicare Health Outcomes Survey (HOS). To better examine the challenges and opportunities raised by these issues, this report addresses three related questions: (i) How do PACE and SNPs differ from regular Medicare Advantage health plans on health status and basic member demographics? (ii) How do at-risk subgroups of Medicare members—who may report lower levels of health than overall plan populations—compare on physical and mental health, both within and between different Medicare programs? (iii) Among specialized programs with patients in uniformly poorer physical health, are there plans that do a better job maintaining patient health status, as measured by better-than-expected mental health?

Findings from this report indicate that specialized PACE and SNP plans report lower levels of physical and mental health than regular Medicare Advantage plans, consistent with findings from previous years and with the expectation that PACE and SNP populations will look sicker and frailer than those in regular Medicare Advantage plans. Likewise, across plan types, mean physical and mental health scores for specified, at-risk members reporting urinary incontinence, depressed mood, obesity and proxy response were highest in regular Medicare Advantage, followed by SNPs and PACE. Within plan types, mean plan physical and mental health scores were also generally lower among at-risk subgroups than not-at-risk counterparts, with the most pronounced differences between depressed and non-depressed members (e.g., in regular Medicare Advantage, differences of ≥ 4 standard deviations on physical health, ≥ 11 standard deviations on mental health). These patterns remained virtually unchanged after controlling for age and gender. Among specialized Medicare programs, there were large differences across plan types in terms of observed-to-expected mental health scores. Mean mental health scores in nearly 1 in 4 PACE plans, and nearly half of all institutional SNPs, were significantly lower than expected. However, small sample sizes limit the feasibility of targeting specified at-risk subgroups, or using mental health data in specialized models, to show more comparative plan distinction.

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The performance of coordinated care provided by specialized plans will need to be monitored and studied to determine if structural changes must be made in the future. To address the issue of small sample sizes, the literature has suggested that more beneficiaries must be surveyed for HOS results to be reported at any level smaller than the current contract level. Another consideration would be to target sampling to those who may be more responsive to health status change, e.g., pre- and post-surgery patients or cancer patients. To show more distinctions in plan performance, future efforts should also consider additional health indicators or domains that may show more distinction between plans. Further evaluation and data development may be needed to identify sets of measures that reflect more plan distinction, are relevant to the Medicare population, and are appropriate for use in the HOS self-reported format.

Introduction

The 2010 Patient Protection and Affordable Care Act began revisions in the Medicare program that include an increased emphasis on quality reporting and specialized programs serving frailer subgroups of Medicare beneficiaries. These changes have drawn attention to the experience of these vulnerable subgroups, as well as to the challenges of distinguishing plan performance with regard to quality measurement. At the program level, policymakers want to know how specialized programs are performing and how they compare with other Medicare programs.ⁱ At the health plan contract (“plan”) level, there have been challenges in demonstrating distinction among Medicare health plans based on quality of care.ⁱⁱ

Medicare monitors care for beneficiaries in Medicare Advantage (MA) health plans through various quality measures. One of these is the Medicare Health Outcomes Survey (HOS), an assessment of respondents’ physical and mental health status. Results are collected and reported for the entire MA organization (contract) or health plan. These results can cover both regular MA and MA Special Needs Plans (SNPs) that limit enrollment to certain, vulnerable beneficiaries.¹ There is also a HOS-Modified (HOS-M) instrument, a shorter version of the HOS that targets frail patients enrolled in Programs of All Inclusive Care for the Elderly (PACE).

The Centers for Medicare and Medicaid Services (CMS) has a special interest in knowing where PACE, SNPs and regular, non-SNP MA plans (“Other MA”) fall on the health status continuum. Recent reports have raised concerns about how specialized programs – such as SNPs – serve vulnerable Medicare beneficiaries.¹ There is particular interest in whether specialized programs are indeed “special” in their enrollment of frailer beneficiaries. A previous report by the Health Services Advisory Group (HSAG) compared PACE and SNPs to Other MA plans using Medicare HOS and HOS-M 2008 and 2009 health data.ⁱⁱⁱ These results did not include 2010 data, which reflected the first year of health care reform implementation. In light of these ongoing concerns, CMS wanted to take advantage of an opportunity to glean health status data on PACE and SNPs from the HOS and HOS-M, and to examine the uniqueness of PACE and SNPs relative to Other MA plans.

There are also concerns about the ability of the HOS to distinguish among MA plans.ⁱⁱ In recent years, HOS results have shown limited distinction between plans. However, at-risk subgroups may report different patterns of physical, mental or social well-being than the overall population. These important subgroup differences may be “washed out” in overall analyses. Examining the differences in

¹ For more detail, see <https://www.cms.gov/specialneedsplans/>.

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HOS results for specified, at-risk subgroups can inform the feasibility of better differentiating plan performance using subgroups. In addition, vulnerable subgroups have long attracted policy interest because they are traditionally less healthy and more costly than the average Medicare beneficiary. That PACE and SNPs target frailer beneficiaries highlights the importance of comparing results among different program designs in Medicare.ⁱⁱ

Moreover, for frail members in PACE and SNP—who may otherwise report uniformly poorer physical health^{iii,iv}—new applications of HOS and HOS-M mental health data may provide an alternative approach to discerning plan performance. It can probably be assumed that frail plan members have poorer physical health and that their physical health is related to their mental health. But if mental health is an indicator of quality of life, with regard to whether people are satisfied with their care or accepting of their poor physical status, then better-than-expected mental health may be a cross-sectional indicator of high-quality care.

To address these concerns and issues, we conducted a series of analyses focusing on three key research questions:

1) Differences in patients and health status across different Medicare program designs:

How do specialized Medicare programs (i.e., PACE and SNP) differ from Other MA plans on health status and basic member demographics? This question will also help confirm the stability of HOS and HOS-M results between previous 2008-2009 findings, and current 2009-2010 findings.

2) Physical and mental health in at-risk subgroups: How do at-risk subgroups of Medicare members—who may report poorer health than overall plan populations—compare on physical and mental health, both within and between different Medicare programs? This study focuses on key subgroups whose health or sociodemographic conditions increase their risk of adverse health—specifically, subgroups reporting depression,^{v,vi} obesity,^{vii} urinary incontinence,^{viii} racial/ethnic minority status^{ix} and survey proxy responses.^x

3) Mental health among beneficiaries in specialized Medicare programs: Among specialized Medicare programs—whose patients may be in uniformly poorer physical health—are there PACE plans and SNPs that do a better job at maintaining patient health, as measured by better-than-expected mental health? What is the correlation between physical and mental health in PACE and SNPs?

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This report provides background on major Medicare program designs, documents the study methods and key findings as they relate to research questions on program and plan-level distinctions in physical and mental health status, and briefly discusses the opportunities and challenges for policymakers in distinguishing health plan performance using data from the HOS.

Medicare Programs

The Centers for Medicare & Medicaid Services (CMS) monitors patient-reported health outcomes in specialized Medicare programs, including PACE and SNP. PACE and SNP populations have a level of frailty and acuity of healthcare needs differing from the regular MA population because they are comprised of a different pool of eligible beneficiaries. PACE plans were authorized by the 1997 Balanced Budget Act; PACE is not part of Medicare Advantage.^{iii,xi} PACE provides comprehensive medical and social services to frail, nursing home-eligible elderly, and acute and long-term services (including all needed medical and supportive services) that integrate Medicare and Medicaid financing; many patients are dual-eligible, although this is not a requirement for enrollment.^{iii, xi} PACE helps members maintain independence in their own homes and is centered around the belief that it is better for the well-being of older adults with chronic care needs to be served in the community whenever possible.^{xi}

Medicare Advantage provides services through MA organizations as an alternative to traditional fee-for-service Medicare. Organizations (contracts) or health plans may offer various types of benefit packages, including health maintenance organizations (HMO), provider-sponsored organizations (PSO), preferred-provider organizations (PPO), private fee-for-services (PFFS) plans, medical savings account (MSA) plans or special needs plans (SNP MA). A single organization may comprise any combination of benefit packages mentioned above.

SNPs are the newest type of MA benefit package, authorized under the 2003 Medicare Modernization Act and reauthorized under the 2010 Patient Protection and Affordable Care Act, which extended SNP authority through 2013. SNPs may exclusively enroll three types of special needs beneficiaries: institutional (which may include either those living in institutions or those meeting their state's level of care requirement for institutional care); dual eligible (Medicare and Medicaid) and those with severe or disabling chronic conditions (focusing on 15 chronic conditions).² The rationale is that specialization allows better coordination of care for Medicare beneficiaries who require more care than anticipated by Other MA plans or fee-for-service Medicare.ⁱ SNPs are financed like most MA plans,

² For detail on the most recent approved chronic conditions, see: <https://www.cms.gov/specialneedsplans/>.

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although certain dual eligible SNPs may also be eligible to receive payment adjustments depending on enrollees' demonstrated level of frailty.

Methods

The following section describes the data source, study sample, analytic approach and variables used in the three research questions addressed in this report. While the data source was common to all questions, the final study sample, analytic approach and variables were unique to each question and are thus described separately. Table A below summarizes key methods for each question; further detail is provided in the following section.

Table A. Summary of Key Methods			
	1: Differences in patients and health status across Medicare programs	2: Physical and mental health in at-risk subgroups	3: Mental health among beneficiaries in SNPs and PACE
Key research questions	How do specialized Medicare programs (i.e., PACE and SNP) differ from Other MA plans on health status and basic member demographics?	How do at-risk subgroups of Medicare beneficiaries compare on physical and mental health, within and between different Medicare managed care programs?	Among specialized Medicare programs, are there PACE plans and SNPs that do a better job at maintaining patient health, as measured by better-than-expected mental health? What is the correlation between physical and mental health in PACE and SNPs?
Data Source	HOS: 2010 Cohort 13 Baseline. HOS-M: 2010. Data are cross-sectional.	Same	Same
Study Sample	HOS: Three types of SNPs (dual, chronic, institution); Other MA. HOS-M: PACE.	HOS: SNP and Other MA at-risk subgroup samples, based on urinary incontinence, depressed mood, obesity, race/ethnicity, proxy response. HOS-M: PACE at-risk subgroup samples, based on urinary incontinence, memory loss, race/ethnicity, proxy response. Refer to Table C for more detail on subgroups.	HOS: All SNP benefit packages. HOS-M: PACE Plans.
Basic Analytic Approach	Compare specialized plans (PACE and 3 SNP types) with Other MA plans on health status. Unit of Analysis: Health plan <u>contract</u> . Note: This analysis attempts to duplicate previous efforts by HSAG, with newer data, to assess stability of results across different years.	Compare physical and mental health scores for at-risk subgroups within and across plan types: PACE, all SNPs and Other MA. Within: Compare at-risk vs. not-at-risk groups within plan types. Across: Compare at-risk groups in PACE vs. SNP vs. Other MA. Unit of Analysis: <u>PACE vs. SNP vs. Other MA plan benefit packages, aggregated to the contract level.</u>	Correlate physical and mental health scores. Calculate Observed to Expected Ratio for Mental Health Score as predicted by Age, Gender, and Activity of Daily Living status Unit of analysis: Health plan <u>benefit package</u> .

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Table A. Summary of Key Methods

	1: Differences in patients and health status across Medicare programs	2: Physical and mental health in at-risk subgroups	3: Mental health among beneficiaries in SNPs and PACE
		Note: Preliminary member-level analysis was first conducted to ascertain if there were differences among individuals. Supplemental analysis of variables contributing or related to health scores was also used.	Note: To explore the feasibility of reporting results at a level smaller than the current contract level, and to complement concurrent case-mix work, this analysis focused on benefit packages as the unit of analysis.
Main variables of interest	<ul style="list-style-type: none"> • Physical & mental health scores • Self-rated general health • Activity of daily living (ADL) limitations • Chronic conditions • Body mass index (BMI) • Measures from the Healthcare Effectiveness Data and Information set (HEDIS®). • Socio-demographics <p>Refer to <i>Medicare Health Outcomes Survey Final Report on Health-Related Quality of Life and Quality of Care in Specialized Medicare Managed Care Plans</i>, prepared by the HSAG, November 2010, for more detailed information.ⁱⁱⁱ</p>	<p>Main variables:</p> <ul style="list-style-type: none"> • Physical & mental health scores <p>Supplemental analysis variables:</p> <ul style="list-style-type: none"> • Sickest quartile health scores • Participation in social activity • State of mind • Choice in how spends time • Activity of daily living (ADL) limitations • HEDIS® measure of physical activity for obese members • Urinary incontinence problem for obese members <p>Refer to Table F for more detail on variables.</p>	<ul style="list-style-type: none"> • Physical & mental health scores • Observed-to-Expected Ratio for Mental Health Score as predicted by age, gender and ADL status

Data Source

All research questions in this study used existing, cross-sectional data from the 2010 Cohort 13 Baseline Medicare HOS data on SNP and Other MA, and the 2010 HOS-M data on PACE. All data were measured at baseline to facilitate HOS and HOS-M comparisons. The HOS assesses self-reported health status for all MA members and includes the Veterans RAND 12-Item Survey (VR-12), a generic health status measure, as the core measure of physical and mental health status. The VR-12 classifies responses into a Physical Component Summary (PCS) score and a Mental Component Summary (MCS) score. Both scores are standardized to a 0–100 scale; higher scores represent better health. The HOS also includes additional items assessing health status, chronic conditions and socio-demographic information. The HOS-M is a modified, shorter version of the HOS and targets PACE members; PCS and MCS scores are also derived from the HOS-M. Both the HOS and HOS-M survey protocols include mailings with telephone follow-up, and results are reported at the contract level.

The 2010 Cohort 13 Baseline HOS included data on 529 MA organizations (contracts) or plans; 224 plans offered a SNP and 410 plans offered Other MA benefit packages. The 2010 HOS-M data

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included 58 PACE plans. Former dual-eligible demonstration plans that were previously part of the HOS-M dataset for frailty-adjusted payment rates were not included starting in 2010 due to a transition to the MA program as Dual SNPs with regular quality reporting requirements for HOS. Seniors (age 65 and older) and disabled members (under age 65) were included in all analyses. Unlike MA members, all PACE members are considered special needs because of their frailer status.

Study Sample

Each of the three research questions relied on different study samples, with different final analytic sample sizes and populations.

Differences in patients and health status across Medicare programs (Question 1); Mental health among beneficiaries in specialized Medicare programs (Question 3): Table B below describes the final analytic sample sizes and number of contracts, by plan type, used to address Question 1 and, in part, Question 3. Since Question 3 focuses on specialized programs in 2010, **only** PACE and SNP 2010 samples in Table A were included in Question 3’s final analytic sample (all 2009 and Other MA samples were excluded for Question 3).

Plan Type	Survey Type	Sample Size (n) 2009	Sample Size (%) 2009	Number of Contracts 2009	Sample Size (n) 2010	Sample Size (%) 2010	Number of Contracts 2010
Institutional SNP	HOS	2,776	0.9	31	3,457	1.0	30
Chronic Condition SNP	HOS	12,231	4.0	78	9,825	2.8	68
Dual Eligible SNP	HOS	38,584	12.6	200	50,812	14.6	199
Dual Demonstration SNP	HOS-M	8,907	2.9	16	NA	NA	NA
PACE Organization	HOS-M	8,489	2.8	42	9,652	2.8	58
Other MA	HOS	235,203	76.8	380	273,155	78.7	410
Totals		306,190	100.0	747	346,901	100.0	765

Physical and mental health in at-risk subgroups (Question 2): For the analysis of subgroups of PACE, SNP and other MA members at increased risk for adverse health, we used health and other characteristics from the HOS-M and HOS questions. All subgroup samples were classified into two categories: at-risk and not-at-risk. Three subgroup samples were common to PACE, SNP and Other MA: urinary incontinence, race/ethnicity and proxy response subgroup samples. Table C below describes all subgroup samples:

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Table C. At-Risk Subgroup Samples, Medicare 2010 HOS and HOS-M		
Subgroup Sample	Dataset and Plan Type	Identification
By Health Characteristics		
Urinary Incontinence	HOS: SNP and MA HOS-M: PACE	HOS: Members with a response to question asking if they experienced problems with urinary incontinence in the past six months (not-at-risk = “no,” at-risk = “yes”). HOS-M: Members with a response to question asking how often they had difficulty controlling urination (not-at-risk = “never,” at-risk = “less than once a week,” “once a week or more often,” “daily” or “catheter”).
Depressed Mood	HOS: SNP and MA	Members with a response to question asking whether they felt depressed or sad much of the time in the past year (not-at-risk = “no”; at-risk = “yes”).
Obesity	HOS: SNP and MA	Members with a response to questions on weight and height, used to calculate Body Mass Index (not-at-risk = BMI <30; at risk = BMI ≥30).
Interfering Memory Loss	HOS-M: PACE	Members with a response to question asking whether they experienced memory loss that interfered with daily activities (not-at-risk = “no”; at-risk = “yes”).
By Other Characteristics		
Race/Ethnicity	HOS: SNP and MA HOS-M: PACE	HOS: Members with responses to two questions about Hispanic or Latino descent (“yes,” “no”) and race (“White,” “Black/African American,” “American Indian/Alaskan Native,” “Asian,” “Native Hawaiian/Pacific Islander”). Three race categories were used: <ul style="list-style-type: none"> • Not-at-risk = Non-Hispanic White; • At-risk = Non-Asian, non-White (Hispanic of any race, non-Hispanic Black/African American, non-Hispanic American Indian/Alaskan Native, non-Hispanic Native Hawaiian/Pacific Islander and non-Hispanic Multi-Race individuals reporting more than one race); • At-risk = Asian, non-White (non-Hispanic Asian). Asians were distinguished in this study because they may differ from other racial/ethnic minority groups.^{xii} HOS-M: CMS administrative data on race/ethnicity.
Proxy Response	HOS: SNP and MA HOS-M: PACE	Members with a response to question asking who completed the survey form (not-at-risk = “Medicare participant/person to whom survey was addressed”; at-risk = “Family member, relative, or friend” or “Nurse/other health professional/professional caregiver”).

Table D below describes the 2010 final analytic sample size of each subgroup sample for PACE, SNP and Other MA plans. The largest subgroup sample, based on health characteristic, was urinary incontinence; the smallest was depressed mood. Relative to other plan types, non-White race/ethnicities composed the largest proportion in SNP (55.4 percent of non-whites) and proxy respondents composed the largest proportion in PACE (57.6 percent).

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Table D. Distribution of At-Risk Subgroup Samples, HOS and HOS-M Data, 2010			
	Program of All Inclusive Care for the Elderly (PACE), n = 58 Plans (HOS-M Data)	Medicare Advantage Special Needs Plans (SNP), n = 224 Plans (HOS Data)	Other Medicare Advantage (MA), n = 410 Plans (HOS Data)
Subgroup Sample, Number of People (Percentage)			
By Health Characteristic			
Urinary Incontinence			
Have Urinary Incontinence	4,927 (54.5%)	23,248 (39.1%)	95,222 (36.5%)
No Urinary Incontinence	4,114 (45.5%)	36,286 (61.0%)	165,516 (63.5%)
All	9,041 (100%)	59,534 (100%)	260,738 (100%)
Memory Loss			
Have Memory Loss	4,758 (52.6%)	NA	NA
No Memory Loss	4,283 (47.4%)	NA	NA
All	9,041 (100%)	NA	NA
Depressed			
Depressed mood	NA	22,716 (38.2%)	44,698 (17.1%)
No Depressed Mood	NA	36,818 (61.8%)	216,040 (82.9%)
All	NA	59,534 (100%)	260,738 (100%)
Obesity			
Obese (BMI \geq 30)	NA	21,645 (36.4%)	75,639 (29.0%)
Not obese	NA	37,889 (63.6%)	185,099 (71.0%)
All	NA	59,534 (100%)	260,738 (100%)
By Other Characteristic			
Race			
Non-Asian, non-White	2,801 (31.7%)	29,123 (50.3%)	54,043 (21.2%)
Asian, non-White	754 (8.5%)	2,925 (5.1%)	6,263 (2.5%)
White	5,290 (59.8%)	25,839 (44.6%)	194,781 (76.4%)
All	8,845 (100%)	57,887 (100%)	255,087 (100%)
Proxy Response			
Used proxy respondent	5,206 (57.6%)	17,347 (29.1%)	29,495 (11.3%)
No Proxy Respondent	3,835 (42.4%)	42,187 (70.9%)	231,243 (88.7%)
All	9,041 (100%)	59,534 (100%)	260,738 (100%)

Analytic Approach and Variable Descriptions

SAS 9.1 was used for data analysis of all three research questions. The analytic approach and variable descriptions unique to each question are described below.

Differences in patients and health status across Medicare programs (Question 1): This report presents results of comparisons of the sociodemographic characteristics and the six health-related areas described below by five plan types (Institutional, Chronic Condition and Dual Eligible SNPs, PACE and Other MA).

Arithmetic mean, standard deviation and standard errors were calculated for the continuous variables (age, grouped annual household income, composites of ADLs, self-rated general health, PCS, MCS, chronic conditions and BMI). Composite scores were generated by summing the dummy-coded categorical variables. Proportions were calculated for the individual categorical variables.

In addition to descriptive statistics, means and proportions were adjusted using multivariate logistic regression models. Two regression models were estimated for each outcome. The first model (linear and logistic) covariates used plan type, age, gender, race/ethnicity, marital status, income and education as covariates. It was applied only to HOS data because the last three covariates were not present in the HOS-M data set. The second model used plan type, age, gender and race/ethnicity. These covariates were common across HOS and HOS-M data sets. Tests of significance were performed to compare the means of specialized plans (PACE and SNPs) with Other MA plans by a linear regression model, with plan type as the only independent variable. Similarly, proportions of specialized plans were compared with Other MA plans by a logistic regression, with plan type as the only independent variable. The sociodemographic and health variables used in this analysis are defined below in Table E:

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Table E. Description of Variables		
	HOS and HOS-M	HOS Only (Not included for PACE members)
Sociodemographics	Age, CMS gender and CMS race/ethnicity	Marital status, education category and annual household income
Function	Activities of Daily Living: bathing, getting in and out of chairs, dressing, eating, using the toilet and walking	NA
Health Status	Self-rated general health: categories include poor, fair, good, very good and excellent	NA
Health Related Quality of Life (HRQOL)	Mean PCS and MCS Baseline scores derived from VR-12 questions	NA
Chronic Conditions	NA	Arthritis of the hip or knee, arthritis of the hand or wrist, diabetes, inflammatory bowel diseases, high blood pressure, other heart conditions (such as problems with heart valves or the rhythm of the heartbeat), myocardial infarction, osteoporosis, sciatica, stroke, coronary artery disease, congestive heart failure, COPD and any cancer. Four additional measures of treatment of cancer: breast, colon, lung and prostate.
Body Mass Index (BMI)	NA	Five categories: underweight (BMI <20), normal weight (BMI 20-24), overweight (BMI 25-29), obese (BMI 30-34) and morbidly obese (BMI ≥35).
HEDIS Effectiveness of Care Measures	NA	<i>Fall Risk Management</i> (discussing and managing fall risk), <i>Management of Urinary Incontinence in Older Adults</i> (discussing incontinence and receiving treatment), <i>Physical Activity in Older Adults</i> (discussing and advising physical activity) and <i>Osteoporosis Testing in Older Women</i> .

Physical and mental health in at-risk subgroups (Question 2): The basic analytic approach for this subgroup analysis was to compare differences in physical and mental health among subgroup samples. Comparisons were assessed within and among the three types of Medicare plans: PACE, SNPs and Other MAs. Special analysis focused on the subgroup that showed the greatest difference in physical and mental health, to inform the feasibility of differentiating plan performance based on subgroups of Medicare beneficiaries.

The study used descriptive comparisons and regression analyses to assess the association of subgroup risk status (independent variable) and health status and other health indicators (dependent variables). Descriptive statistics included calculations of arithmetic means and differences, standard deviations and chi-square statistics (the latter was used primarily for comparison between plan types) and were based on continuous variables and proportions of categorical variables. All regression models adjusted for age in years and gender. For consistency with HOS reporting, the organization (contract) or plan was the unit of analysis. Member data were aggregated to the organization level for this main

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phase of analysis, but some preliminary analyses used the member as the unit of analysis, to ascertain if subgroup health differences could first be observed among individuals. (Regression modeling in this preliminary phase accounted for clustering of individuals in organizations using hierarchical models. The final phase of the study focused on the plan as the unit of analysis, and thus did not need to account for clustering of individuals).

The VR-12 PCS and MCS scores were the main health variables of interest. However, the study used supplemental analysis to examine additional health variables, based on their relationship to PCS and MCS scores (e.g., individual items used to calculate PCS and MCS scores) or on their representation of key aspects of health-related quality of life. While these additional indicators were not core variables of interest, analysis helped clarify whether patterns observed with core PCS and MCS scores were also observed with, and stable across, related health indicators. These supplemental analyses included examining members in the sickest quartile of the PCS and MCS score distribution, to better understand the dynamics of being in the poorest health, as well as other additional variables, defined as follows:³

Table F. Supplemental Analysis of At-Risk Subgroups: Additional Variables		
Variable	Description	Dataset
Variables Contributing to PCS and MCS Scores		
Sickest Quartile PCS and MCS Scores	<ul style="list-style-type: none"> Proportion of members scoring in the sickest quartile of the PCS score distribution (PCS score of ≤ 20.6 in PACE, ≤ 23.4 in SNP and ≤ 29.2 in Other MA) Proportion of members scoring in the sickest quartile of the MCS score distribution (MCS score of ≤ 31.6 in PACE, ≤ 34.2 in SNP and ≤ 43.6 in Other MA) 	HOS and HOS-M
Participation in Social Activity	<ul style="list-style-type: none"> Proportion of members whose health interfered with social activities all or most of the time 	HOS and HOS-M
State of Mind	<ul style="list-style-type: none"> Proportion of members who felt calm some, little or none of the time Proportion of members who had energy some, little or none of the time Proportion of members who felt downhearted all or most of the time 	HOS and HOS-M
Choice in How One Spends Time	<ul style="list-style-type: none"> Proportion of members who accomplished less all or most of the time because of physical health Proportion of members limited in work or other activities all or most of the time because of physical health Proportion of members who accomplished less all or most of the time because of emotional health Proportion of members limited in work or other activities all or most of the time because of emotional health 	HOS and HOS-M
Other Health-Related Quality of Life Variables		
Activities of Daily Living Limitations	<ul style="list-style-type: none"> Proportion of members with any difficulty: bathing, dressing, eating, getting in/out of chairs, walking, toileting 	HOS and HOS-M

³ Preliminary analyses, which used the member instead of the organization as the unit of analysis, primarily examined whether the member reported a given *adverse* health indicator (e.g., whether the member was in the sickest quartile PCS score distribution).

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Table F. Supplemental Analysis of At-Risk Subgroups: Additional Variables

Variable	Description	Dataset
HEDIS Effectiveness of Care and Interfering Health Issues for Obese Members	<ul style="list-style-type: none"> • Proportion of members who did not discuss physical activity with their health provider • Proportion of members who were not advised on physical activity level by their health provider • Proportion of members who reported urinary incontinence was a big problem 	HOS

Mental health among beneficiaries in specialized Medicare programs (Question 3): The overall analytic approach estimated the correlation between PCS and MCS scores at the member and benefit-package levels; used linear regression to predict MCS mean scores given a member’s PCS score, difficulty with ADL and demographics; and examined whether there were benefit packages with MCS scores that were higher than expected, considering the PCS scores, ADL difficulties and demographics of its members (since a larger MCS-to-PCS differential may signal better quality of life). To explore the feasibility of reporting results at a level smaller than the current contract level, and to complement concurrent case-mix adjustment work, this analysis focused on benefit packages as the unit of analysis.

Analysis began with descriptive demographics on gender; age; PCS score; and any difficulty with one or more of the six ADLs (“ADL limitations”): difficulty bathing, dressing, eating, getting in and out of chairs, walking and using the toilet. Demographic calculations included the number of members with valid responses to HOS or HOS-M questions, summarized by each plan type (PACE and SNP). The mean and standard deviation of the MCS score were calculated separately for PACE and SNPs by the specified demographics (see Appendix Tables 34-35c).

Next, the correlation between PCS and MCS was calculated for PACE and SNPs, using the Pearson Correlation Coefficient to test the strength of a linear association between MCS and PCS scores (see Appendix Table 36a). This coefficient was calculated at the member level and at the benefit-package level. The member-level coefficient was calculated for all members without grouping them in benefit packages, to show the overall correlation between MCS and PCS for PACE and SNP populations. The benefit package-level coefficient was calculated for each benefit package to show how the relationship between PCS and MCS scores varies across benefit packages. The 5th, 10th, 25th, 50th, 75th, 90th and 95th percentiles were reported, as well as minimum and maximum benefit-package level correlation coefficients.

After determining the member-level and benefit package-level correlations, a regression model was developed to estimate the expected MCS score (see Appendix Table 37). A multiple linear

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regression model estimated the effects of specified member factors on MCS scores. Parameter estimates were based on all members across all different plan types. The model form was:

$$Y = \alpha + \left(\sum_{j=1}^m x_j \beta_j \right) + e$$

where Y was the Baseline VR-12 MCS score for a member, x_j was one of several member characteristics (e.g. age or gender), β_j was the regression coefficient relating one of several member characteristics to MCS score, m was the number of member characteristics considered in the model, α was the model intercept and e represented a random error term. The specific effects included in the model were Baseline PCS score (continuous variable), female gender, ADL difficulty and age (continuous variable).

Interactions occur when the effect of one variable on an MCS score is modified by the effect of another variable; for example, increasing PCS scores on increasing MCS scores. As age increases, the effect of increasing PCS scores on MCS scores diminishes significantly. Interactions used in the regression model were PCS score and female gender; PCS score and age; PCS score and ADL difficulty; and gender and age. Age, gender, PCS and ADL difficulty were included based on prior knowledge of their relationship to MCS.

The main effects for each variable had to be significant for interactions to be included in the model; for example, the age-by-gender interaction was included only if age and gender were individually significant predictors. Interactions were added using a stepwise selection approach with a p-value limit of 0.05 for entry and 0.10 for retention. In this way, the most significant interaction was added to the model first. If the interaction had a p-value of less than 0.1 after inclusion, it remained and the next interaction was evaluated. This process was repeated until all interactions were evaluated.

Significance of the regression model was evaluated using r-square statistics, which for linear regression indicates the proportion of variation in MCS scores explained by age, gender, PCS score and ADL difficulty, as well as the interactions between these variables that were included in the model. Members missing data on any variable in the model were excluded (as is currently done for the case-mix adjustment of longitudinal PCS and MCS outcomes).

After the regression coefficients were estimated for member factors and significant interactions, the MCS score for each member was predicted using the member characteristics in combination with the estimated regression coefficients. After calculating an expected MCS score, the mean for each

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benefit package, identified by the combination of CMS Contract ID and Plan ID (e.g., H3371-001), was calculated from all expected MCS scores for all members in the benefit package. For each benefit package, the mean observed MCS score was divided by the mean expected MCS score, which provided an indication of how well plans did against expected performance. An observed-to-expected ratio (O/E) that was significantly less than 1 denoted a mean MCS score lower than expected; a ratio significantly greater than 1 indicated a mean MCS score higher than expected.

Another way to express risk-adjusted rates is to calculate a case-mix adjusted average. For each benefit package, the O/E ratio was multiplied by the mean MCS score, calculated across all plans (Supplemental Data Tables⁴). To determine if a ratio is significantly higher or lower than 1, the 95 percent confidence interval was calculated around the O/E using the following equation (reviewed by A.S. Ash, M. Shwartz and E.A. Peköz^{xiii}):

$$SE_{Plan} = \frac{(Observed\ mean\ MCS) \pm (1.96 \times \sum_{i=1}^n (SE_i^2))}{n}$$

where SE_{Plan} was the standard error of the benefit package's O/E ratio; *Observed mean MCS* was the observed mean MCS score for a benefit package; 1.96 was the value of z corresponding to a two-sided 95 percent confidence interval; SE_i^2 was the squared standard error for an individual's predicted MCS score obtained from the regression model; n was the benefit package's denominator and i indicated a specific member. If the 95 percent confidence interval included 1, the benefit package's mean MCS score was not significantly higher or lower than expected. If the 95 percent confidence interval did not include 1 and the O/E was less than 1, the benefit package's mean MCS score was lower than expected. Conversely, if the O/E was higher than 1 and the 95 percent confidence interval did not include 1, the benefit package's MCS score was higher than expected.

The percentile distribution of the O/E was provided, as well as the proportion of benefit packages identified as having a mean MCS score higher or lower than expected (considering only case-mix). Given the small sizes of some PACE and MA SNPs, the percentile distribution of denominator size across all benefit packages was also calculated, to understand how wide an application the proposed MCS proxy has.

⁴ The supplemental tables are not included in the appendix, but can be requested electronically.

Results

This section describes the separate findings from all three research questions addressed in this report. Table G below summarizes key results:

	1: Differences in patients and health status across Medicare programs	2: Physical and mental health in at-risk subgroups	3: Mental health among beneficiaries in SNPs and PACE
Key research questions	How do specialized Medicare programs (i.e., PACE and SNP) differ from Other MA plans on health status and basic member demographics?	How do higher-risk subgroups of Medicare beneficiaries compare on physical and mental health, within and between different Medicare programs?	Among specialized Medicare programs, are there PACE plans and SNPs that do a better job at maintaining patient quality of life, as measured by better-than-expected mental health? What is the correlation between physical and mental health in PACE and SNPs?
Key results	<ul style="list-style-type: none"> • Overall, 2010 results were comparable to 2009 results. • Specialized plans, PACE and SNPs, had poorer health than Other MA plans. • There was a notable increase in poor health for Institutional SNPs from 2009 to 2010, especially in the ADL measures. 	<ul style="list-style-type: none"> • Within plan types, mean plan PCS and MCS scores were generally lower among at-risk than not-at-risk members. • Across plan types, mean plan PCS and MCS for at-risk members were lowest in PACE, followed by SNPs and Other MA. • The largest PCS or MCS difference was observed in members reporting depressed versus non-depressed mood. • But small samples limit the feasibility of targeting this subgroup to show more plan distinction. <p>(All main plan-level results were consistent with preliminary individual-level results, and with supplemental results using additional related variables).</p>	<ul style="list-style-type: none"> • Correlation between PCS and MCS scores was generally low. • Among PACE and SNPs, there were large differences across plan types in terms of observed-to-expected MCS score means. • Mean MCS scores for half of all Institutional SNP, and nearly 23 percent of PACE plans, were significantly lower than expected. • Fewer Chronic Condition and Dual Eligible SNP MCS score means were significantly lower than expected. • But the small size of many SNPs and PACE limits the feasibility of using MCS data to show more plan distinction, especially if results are to be reported at a level smaller than the contract.

Differences in patients and health status across Medicare programs (Question 1): This section briefly compares 2010 results with 2009 results from the HSAG report. It also compares 2010 results of specialized plans (PACE and SNPs) with Other MA plans. Refer to *Medicare Health Outcomes Survey Final Report on Health-Related Quality of Life and Quality of Care in Specialized Medicare Managed Care Plans*, prepared by the HSAG in November 2010 for the 2009 data.ⁱⁱⁱ

Tables H and I below summarize both the 2009 and 2010 results by plan type.

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Table H. Summary of Demographics, Health Status and Function for Specialized Plans Compared With Traditional Medicare Advantage Beneficiaries for 2009 and 2010								
Characteristics for Plan Type vs. Other MA	Type of Plan							
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE	
	2009	2010	2009	2010	2009	2010	2009	2010
More Females	+	+		—	+	+	+	+
More Minorities	+	+	+	+	+	+	+	+
Older Age	+	+	—	—	—	—	+	+
Fewer Married	+	+	+	+	+	+	NA	NA
Less Education	+	+	+	+	+	+	NA	NA
Lower Income	+	+	+	+	+	+	NA	NA
More ADL Limitations	+	+	+	+	+	+	+	+
Poorer Self-Rated Health	+	+	+	+	+	+	+	+
Lower PCS Score	+	+	+	+	+	+	+	+
Lower MCS Score	+	+	+	+	+	+	+	+
More Chronic Conditions	+	+	+	+	+	+	NA	NA
More Underweight	+	+	—				NA	NA
More Morbid Obesity		—	+	+	+	+	NA	NA

+ = Generally differs substantially from Other MA group in the direction indicated
 — = Generally differs substantially from Other MA group in the opposite direction indicated
 Blank cell indicates small or inconsistent differences compared to Other MA group
 NA indicates that data are not available for these categories

Table I. Summary of Performance on HEDIS Measures for Specialized Plans Compared With Traditional Medicare Advantage Beneficiaries for 2009 and 2010								
Characteristics for Plan Type vs. Other MA	Type of Plan							
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE	
	2009	2010	2009	2010	2009	2010	2009	2010
Higher Discussing Fall Risk Rate	+	+	+	+	+	+	NA	NA
Higher Managing Fall Risk Rate	+	+	+	+	+	+	NA	NA
Higher Discussing Urinary Incontinence Rate	+	+			+	+	NA	NA
Higher Receiving Urinary Incontinence Treatment Rate	+	+				+	NA	NA
Higher Discussing Physical Activity Rate		—	+	+	+	—	NA	NA
Higher Advising Physical Activity Rate			+	+	+	+	NA	NA
Higher Osteoporosis Testing in Women Rate	—	—	—	—	—	—	NA	NA

+ = Generally differs substantially from Other MA group in the direction indicated
 — = Generally differs substantially from Other MA group in the opposite direction indicated
 Blank cell indicates small or inconsistent differences compared to Other MA group
 NA indicates that data are not available for these categories

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Overall, 2010 results were comparable to 2009 results. The general conclusion was that PACE and SNPs reported lower levels of health than Other MA plans. Some Effectiveness of Care measures changed slightly in 2010 (*Management of Urinary Incontinence in Older Adults, Physical Activity in Older Adults, Osteoporosis Testing in Older Women*), although in each plan type there was a notable increase in poor health for Institutional SNPs from 2009 to 2010, especially in the ADL measures.

Sociodemographic characteristics. Overall, sociodemographic characteristics (gender, age, race/ethnicity, marital status, annual household income and education) were the same in 2010 as they were in 2009 (see Table H). There were more females, minorities, older members, members with low education and low annual household income, and fewer married members. For more detailed information, see Appendix Table 1.

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
PCS, mean (SD)	32.1 (13.0)	29.1 (11.9)	34.4 (11.9)	33.9 (12.2)	33.0 (11.8)	32.6 (11.8)	28.1 (10.2)	27.9 (10.1)	38.6 (12.4)	38.7 (12.5)
(SE)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	NA	(0.1)	(0.06)	(0.1)
MCS, mean (SD)	45.0 (14.5)	42.7 (14.7)	47.1 (12.6)	46.2 (13.2)	43.2 (13.2)	43.1 (13.2)	41.6 (13.5)	41.9 (13.5)	51.2 (11.5)	50.9 (11.9)
(SE)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	NA	(0.1)	(0.06)	(0.1)

All differences by plan type compared to Other MA category are significant at $p < 0.0001$ unless otherwise indicated.
 NS = Not significant * = $p < 0.05$ ** = $p < 0.01$ *** = $p < 0.001$

Health Status, Function and HRQOL. Overall, 2010 results for health status, function and HRQOL were analogous with 2009 data. Members in PACE and SNPs had significantly greater difficulty performing all ADLs than members in Other MA plans. PACE and SNPs also reported poorer self-rated general health than Other MA plans. The HRQOL measures included PCS and MCS Baseline mean scores for all plan types. As would be expected, all specialized plans had significantly lower PCS and MCS mean scores than Other MA plans (Table J). There was also some variation within the various types of SNPs and PACE, with PACE generally reporting the lowest mean PCS and MCS scores, Chronic Condition SNPs reporting the highest mean PCS and MCS, and Institutional and Dual SNPs generally in the middle of the health score continuum (Table J). For more detailed information, see Appendix Tables 2-6.

Chronic Conditions and BMI. Overall, chronic conditions and BMI measures were consistent from 2009 to 2010. The mean number of chronic conditions was significantly higher for members in all

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SNPs compared with Other MA plans. Chronic Condition SNPs had the highest mean (see Appendix Table 9). Other MA plans had lower rates of separate chronic conditions than all SNPs for all conditions, with the exception of osteoporosis and cancer. For BMI, the mean was significantly higher for only Chronic Condition and Dual Eligible SNPs, compared with Other MA plans. For more detailed information, see Appendix Tables 7-10.

Effectiveness of Care Measures. For the most part, 2009 and 2010 results of Effectiveness of Care measures (see Table I) were equal. Both eligibility rates and measure results were analyzed, but only measure results are discussed in this report. *Discussing Fall Risk* and *Managing Fall Risk* rates were significantly higher for all three SNPs than for Other MA plans. *Discussing Urinary Incontinence* and *Receiving Urinary Incontinence Treatment* rates were significantly higher for Institutional and Dual Eligible SNPs than for Other MA plans, although the 2009 *Receiving Treatment* rate for Dual Eligible SNPs was not significantly different from Other MA plans after adjusting for demographics. The *Discussing Physical Activity* rate was significantly lower for Institutional and Dual Eligible SNPs in 2010 than for Other MA plans, although Chronic Condition SNPs and Dual Eligible SNPs had significantly lower rates than Other MA plans in 2009. Chronic Condition and Dual Eligible SNPs had a higher *Advising Physical Activity* rate than Other MA plans in both years. All three MA SNPs had a lower *Osteoporosis Testing in Older Women* rate than Other MA plans in both years. For more detailed information, see Appendix Tables 11A-12B.

Physical and mental health in at-risk subgroups (Question 2): This section describes the basic distribution of at-risk subgroups used in this analysis; the main findings regarding differences in physical and mental health within and among plan types (PACE, SNPS, Other MA); and special analysis focusing on a subgroup that showed the greatest differences in physical and mental health.

Basic Distribution of Medicare Subgroups. The largest plan type reporting was Other MA (410 plans, n = 260,738 members), followed by SNP (224 plans, n = 59,534 members) and PACE (58 plans, n = 9,041 members), as described in Table B previously. Of the subgroup samples common to all three programs (urinary incontinence, race/ethnicity, proxy response), the proportion of members varied by plan type. Members reporting urinary incontinence composed 36.5 percent of Other MA members, 39.1 percent of MA SNP members and 45.5 percent of PACE members. Non-Asian, non-White members composed 21.2 percent of Other MA members, 50.3 percent of MA SNP members and 31.7 percent of PACE members. Asian, non-White members composed 2.5 percent of Other MA members, 5.1 percent of MA SNP members and 8.5 percent of PACE members. Proxy response members composed 11.3 percent of Other MA members, 29.1 percent of SNP members and 57.6 percent of PACE members.

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A few subgroups were unique to PACE (members reporting memory loss [52.6 percent]) or to MA plans (members reporting depression [38.2 percent in SNP; 17.1 percent in Other MA] or obesity [36.4 percent in MA SNP; 29.0 percent in Other MA]).

Differences Within and Between Plan Types: PCS and MCS Scores. Differences in mean plan physical and mental health among all subgroup samples, as measured by PCS and MCS scores, are summarized in Table K (PCS) and Table L (MCS), below. Within plan types, overall, mean plan PCS and MCS scores were lower among at-risk members than not-at-risk counterparts. Across plan types, mean PCS and MCS for at-risk members were lowest in PACE, followed by SNPs, then Other MA plans. Among health-based subgroups, the urinary incontinence subgroup sample generally had the highest PCS scores compared to the memory-loss, depressed, and obese subgroups (although SNPs proved an exception). Among subgroups based on other factors, race/ethnicity subgroup samples had the highest PCS scores compared to the proxy response subgroup. Obese subgroup samples had the highest MCS scores compared to urinary incontinence, memory-loss, and depressed subgroups; race/ethnicity subgroup samples had the highest MCS scores compared to the proxy response subgroup.

The largest PCS or MCS difference was observed between members reporting depressed mood versus non-depressed mood, particularly in Other MA (PCS difference of ≥ 4 standard deviations [SDs]; MCS difference of ≥ 11 SDs). There were consistent PCS and MCS differences in PACE of at least ≥ 1 SD between the urinary incontinent and non-incontinent subgroups across all plan types, and among those with memory loss. There were also PCS differences for the obese and non-obese in SNP (≥ 1 SD) and Other MA (≥ 2 SDs), but no MCS differences. Little or no substantial PCS and MCS difference (< 1 SD) was observed between Whites and non-Whites in any plan type. Other subgroups did not consistently exhibit differences based on risk status across all plan types.

Patterns and associations between PCS and MCS scores and subgroup status remained virtually unchanged with regard to additional health variables related to PCS and MCS or to other health-related quality of life aspects, confirming the stability of PCS and MCS findings among related variables contributing to PCS and MCS scores. Controlling for age and gender in regression models also did not greatly change overall patterns. (For detailed information on supplemental plan-level results, see Appendix Tables 16-18, 22-24 and 29-32). Additionally, findings from preliminary analyses, which used the individual instead of the plan as the unit of analysis, were consistent with all main plan-level findings, confirming their stability at both levels of analyses. (For detailed information on preliminary analyses of individual-level results, see Appendix Tables 13-15, 19-21, and 25-28).

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Table K. Plan Mean Physical Component Summary (PCS) Scores, by At-Risk Subgroup Samples and Plan Type, 2010				
Plan Members' At-Risk Subgroup Status	PACE n = 58 Plans	MA SNP n = 224 Plans	Other MA n = 410 Plans	Difference of At-Risk Subgroup Between Plan Type
By Health Characteristic				
Urinary Incontinence				
Have Urinary Incontinence (At-Risk)	25.5	29.5	35.1	P ≤0.05
No Urinary Incontinence	30.3 (SD = 2.4)	34.7 (SD = 3.0)	40.4 (SD = 2.3)	—
Difference, Within Plan Type	≥2 SDs	≥1 SD	≥2 SDs	—
Memory Loss				
Have Memory Loss (At-Risk)	26.2	NA	NA	NA
No Memory Loss	29.3 (SD = 2.9)	NA	NA	—
Difference, Within Plan Type	≥1 SD	NA	NA	—
Depressed				
Have Depressed Mood (At-Risk)	NA	29.8	31.2	NA
No Depressed Mood	NA	34.3 (SD = 3.2)	40.1 (SD = 2.0)	—
Difference, Within Plan Type	NA	≥1 SD	≥4 SDs	—
Obesity				
Obese (BMI≥30, at-risk)	NA	30.4	34.7	NA
Not obese	NA	33.9 (SD = 3.1)	40.0 (SD = 2.3)	—
Difference, Within Plan Type	NA	≥1 SD	≥2 SDs	—
By Other Characteristics				
Race				
Non-Asian, non-White (At-Risk)	27.4	32.7	37.0	P <0.05
Asian, non-White (At-Risk)	30.7	36.6	42.0	P <0.05
White	27.3 (SD = 2.6)	32.3 (SD = 4.2)	38.8 (SD = 2.6)	—
Difference, Within Plan Type: Non-Asian, Non-White vs. White	0*	0*	0*	—
Difference, Within Plan Type: Asian vs. White	≥1 SD	≥1 SD	≥1 SD	—
Proxy Response				
Used Proxy Respondent (At-Risk)	26.3	31.7	32.4	P <0.05**
No Proxy Respondent	29.6 (SD = 2.7)	33.1 (SD = 2.8)	39.3 (SD = 2.3)	—
Difference, Within Plan Type	≥1 SD	0*	≥3 SDs	—

SD = Standard deviation.

All within-plan type differences in PCS means of at-risk subgroups and not-at-risk groups are >1 standard deviation, unless otherwise specified. All between-plan type differences in PCS means of at-risk subgroups are statistically significant with p≤0.05 (chi-square statistics), unless otherwise specified.

* = The within-plan type difference in means of the at-risk subgroup versus the non-risk group are small and <1 standard deviation.

** = The between-plan type differences in means of PACE and SNP Plans and of PACE and Other MA Plans are statistically significant with p ≤0.05, but the difference in means of SNP and Other MA Plans is not significant.

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Table L. Plan Mean Mental Component Summary (MCS) Scores, by At-Risk Subgroup Samples and Plan Type, 2010				
Plan Members' At-Risk Subgroup Status	PACE n = 58 Plans	MA SNP n = 224 Plans	Other MA n = 410 Plans	Difference of At-Risk Subgroup Between Plan Type
By Health Characteristic				
Urinary Incontinence				
Have Urinary Incontinence (At-Risk)	39.6	41.2	47.9	P≤0.05
No Urinary Incontinence	45.2 (SD = 3.5)	45.4 (SD = 3.8)	51.8 (SD = 2.6)	—
Difference, Within Plan Type	≥1 SD	≥1 SD	≥1 SD	—
Memory Loss				
Have Memory Loss (At-Risk)	37.9	NA	NA	NA
No Memory Loss	46.5 (SD = 2.7)	NA	NA	—
Difference, Within Plan Type	≥3 SDs	NA	NA	—
Depressed				
Have Depressed Mood (At-Risk)	NA	33.6	34.9	NA
No Depressed Mood	NA	50.0 (SD = 2.5)	53.9 (SD = 1.7)	—
Difference, Within Plan Type	NA	≥6 SDs	≥11 SDs	—
Obesity				
Obese (BMI ≥30, at-risk)	NA	42.8	49.0	NA
Not obese	NA	44.4 (SD = 3.9)	51.1 (SD = 2.6)	—
Difference, Within Plan Type	NA	0*	0*	—
By Other Characteristics				
Race				
Non-Asian, non-White (At-Risk)	43.1	43.3	48.5	P≤0.05
Asian, non-White (At-Risk)	47.7	45.9	51.4	P≤0.05**
White	40.9 (SD = 4.9)	43.8 (SD = 5.0)	51.1 (SD = 2.6)	—
Difference, Within Plan Type: Non-Asian/Non-White vs. White	0*	0*	≥1 SD	—
Difference, Within Plan Type: Asian vs. White	≥1 SD	0*	0*	—
Proxy Response				
Used Proxy Respondent (At-Risk)	40.5	42.8	45.5	P≤0.05
No Proxy Respondent	44.2 (SD = 3.4)	44.2 (SD = 3.9)	51.1 (SD = 2.7)	—
Difference, Within Plan Type	≥1 SD	0*	≥2 SDs	—

SD = Standard deviation.

All within-plan type differences in MCS means of at-risk subgroups and non-risk groups are ≥1 standard deviation, unless otherwise specified. All between-plan type differences in MCS means of at-risk subgroups are statistically significant with p≤0.05 (chi-square statistics), unless otherwise specified.

* = The differences in means of the at-risk subgroup versus the non-risk group are small and <1 standard deviation.

** = The difference in means of SNP and Other MA Plans is statistically significant with p≤0.05, but the differences in means of PACE and SNP Plans and PACE and Other MA Plans are not significant.

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Depressed Mood Subgroup: Distribution of Denominators and Scores. PCS and MCS differences were far larger between depressed and non-depressed MA members than other subgroups. Additional analyses were conducted to examine the denominator and score distribution of depressed members because this could affect the feasibility of differentiating comparative plan PCS and MCS performance among specified subgroups instead of among all members, as is currently reported. Table M summarizes the distribution of denominators and PCS and MCS scores for depressed subgroup members in SNP and Other MA, compared with all members. The PCS and MCS distribution is somewhat wider in SNPs than in Other MA plans. In SNPs, depressed members' PCS distribution is larger than that of all members, but this is not true of MCS distribution because depressed members generally have lower MCS scores than the overall population. This pattern was also observed in Other MA plans. Generally, there are not many observations among the depressed members: the 50th percentile denominators were $n = 79$ in SNP and $n = 105$ in Other MA.

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Table M. Distribution of Denominators and PCS/MCS Scores: Depressed Mood and All Member Samples

Population	Sample	Quantity	Number of Organizations	Min	5th	10th	25th	50th	75th	90th	95th	Max
SNPs	Depressed Members	Denominator	224	2	5	11.5	29	79	164	236	266	384
		PCS	224	12.7	24.9	26.3	28.3	29.7	31.4	33.1	34.3	40.1
		MCS	224	16.7	30.0	30.9	32.3	33.7	35.2	36.0	36.7	46.2
	All Members	Denominator	224	1	10	24	71	199	441	584	649	772
		PCS	224	20.5	27.3	29.3	31.4	32.7	34.4	35.6	36.9	39.6
		MCS	224	16.7	38.5	40.3	42.0	43.6	45.4	47.7	49.1	58.8
Other MA	Depressed Members	Denominator	410	1	48	62	82	105	131	161	183	339
		PCS	410	23.3	28.1	28.7	29.8	31.3	32.5	33.5	34.4	37.9
		MCS	410	30.1	32.1	32.9	33.8	34.9	35.9	36.8	37.5	40.1
	All Members	Denominator	410	3	171	371	532	710	770	812	840	911
		PCS	410	31.2	34.5	35.4	37.0	38.7	40.0	41.3	42.1	44.9
		MCS	410	39.5	44.7	46.6	49.2	51.1	52.3	53.1	53.7	55.3

Mental health among beneficiaries in specialized Medicare programs (Question 3): This section describes the main findings related to the correlation of physical and mental health, and the exploration of mental health as a proxy for quality of life among frail members in PACE and SNPs.

Demographic Information. Survey completion rates (survey disposition = M10, M11, M31, T10, T11 or M31) were highest for PACE (67.2 percent). Response rates for SNPs were lower than for PACE, and varied across SNP types. Chronic Condition SNPs had the highest completion rate of MA SNPs (60.8 percent), followed by Dual Eligible SNPs (53.2 percent) and Institutional SNPs (31.1 percent). For more detailed information on demographic information, see Appendix Table 33.

For PACE and SNPs, there were no substantial differences in mean MCS between men and women. MCS scores did not vary substantially by age for PACE, but MCS score tended to increase with age for MA SNPs. For example, the mean MCS score was 35.3 for members in Chronic Condition SNPs who were 35 years old and younger, and increased to 49.0 for members 65–74 years old. A U-shaped distribution was observed for MCS with PCS for both PACE and SNPs, though the highest and lowest PCS groups had relatively few observations. The lowest PCS group had the highest MCS. Mean MCS decreased for the next higher PCS group and increased linearly until reaching the highest PCS group, at which point it decreased. For PACE and SNPs, the mean MCS score for members with at least one ADL difficulty was substantially lower than the mean MCS score for members with no ADL difficulties. For more detailed information on descriptive statistics for MCS by plan type, see Appendix Tables 34-35c.

Correlation of PCS and MCS. The Pearson Correlation coefficient was calculated for all members by plan type (PACE and SNPs). The correlation between PCS and MCS scores was generally low (ranging from 0.12 for PACE and 0.25 for Institutional SNPs). Part of this weak correlation may have resulted from the U-shaped distribution of MCS with PCS; however, bends in the distribution were based on relatively small member numbers.

The benefit package-level correlation calculation between PCS and MCS scores examined how the relationship varies across plan types. Considerable differences were noted across benefit packages for all plan types, ranging from moderate-to-strong negative correlations to moderate-to-strong positive correlations. For more information on the correlation of PCS and MCS, see Appendix Table 36a-b.

Estimation of Expected MCS. A multiple linear regression model predicted MCS scores. The model included PCS; ADL difficulty and age; and interactions for PCS and gender, PCS and age, PCS and ADL difficulty and age and gender. Interactions indicated that the effect of PCS on MCS was

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modified by age, gender and ADL status. The r-square value was 0.12 (i.e., the variables included in the model, and their interactions, explained nearly 12 percent of the variation in observed MCS). PCS score, ADL difficulty and age were all significant predictors of MCS score ($p < .0001$ for PCS and ADL difficulty; $p < 0.05$ for age). The single largest predictor of MCS was ADL difficulty, although the strength of its influence was modified by PCS— in the absence of any ADLs, an increase in PCS is associated with a slight increase in expected MCS (conversely a decrease in PCS is associated in a decrease in expected MCS). However, in the presence of any ADL difficulties, this relationship is subtly reversed. An increase in PCS is associated with a slight decrease in expected MCS and vice versa.. For more information on the estimation of expected MCS, see Appendix Table 39.

Identification of Plans With Higher-Than-Expected or Lower-Than-Expected Mean MCS. An O/E ratio was not calculated for PACE and SNPs with denominators less than 30, which resulted in the exclusion of a number of SNP benefit packages from identification of higher- or lower-than-expected mean MCS scores (see Table N). Fifty-six of 118 (47.5 percent) Chronic Condition SNPs, 190 of 287 (66.2 percent) Dual Eligible SNPs and 19 of 38 (50 percent) Institutional SNPs had denominators of 30 or greater. By contrast, 53 of 58 (91.4 percent) PACE benefit packages had denominators of 30 or greater.

Table N. Summary of SNP and PACE Plan Performance on MCS Scores, 2010

Population	Total Number of Benefit Packages	Number of Benefit Packages With Denominators >30 (%)	Proportion of Plans by Performance Status		
			Worse Than Expected	Same as Expected	Better Than Expected
Chronic SNPs	118	56 (47%)	5.4	48.2	46.4
Dual SNPs	287	190 (66%)	10.0	75.8	14.2
Institutional SNPs	38	19 (50%)	52.6	31.6	15.8
PACE	58	53 (91%)	22.6	69.8	7.5

Among PACE and SNPs with an O/E ratio, there were large differences across plan types in terms of O/E MCS score means. Half of all Institutional SNP mean MCS scores were significantly lower than expected. This proportion was nearly 23 percent for PACE. Many fewer Chronic Condition and Dual Eligible SNP MCS score means were significantly lower than expected.

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Almost half of Chronic Condition SNP observed MCS score means were significantly greater than expected. The MCS score means of nearly 15 percent of Dual Eligible and Institutional SNPs were significantly higher than expected, but very few PACE benefit packages had MCS score means that were significantly higher than expected.

Table O below shows the percentile distribution of denominator size, observed MCS mean score, expected MCS mean score and O/E ratio for PACE and SNPs. Generally, the mean observed MCS score varied considerably across benefit packages of each plan type. As anticipated, there was much less variation in expected mean MCS scores.

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Table O. Distribution of Denominators, Observed and Expected MCS Scores, 2010

Population	Quantity*	Number of Benefit Packages	Percentile Distribution								
			Min	5th	10th	25th	50th	75th	90th	95th	Max
Chronic SNPs	Denominator	118	1	1	1	5	24	87	295	410	667
	Observed Mean MCS	118	22.53	34.18	37.34	43.59	46.34	49.52	53.39	56.73	62.30
	Expected Mean MCS	56	42.04	42.22	42.77	43.94	44.84	45.44	45.98	46.71	47.97
	Observed to Expected Ratio	56	0.85	0.91	0.97	1.02	1.06	1.08	1.12	1.13	1.20
Dual SNPs	Denominator	287	1	2	5	17	76	273	506	585	712
	Observed Mean MCS	287	16.67	37.19	38.94	41.54	43.12	44.93	47.06	48.89	62.32
	Expected Mean MCS	190	40.53	41.50	41.82	42.47	43.22	43.99	44.54	44.91	45.86
	Observed to Expected Ratio	190	0.85	0.90	0.95	0.98	1.00	1.03	1.05	1.07	1.12
Institutional SNPs	Denominator	37	1	2	3	8	30	133	245	396	641
	Observed Mean MCS	37	27.62	29.99	32.92	37.32	39.48	42.39	49.03	50.73	52.58
	Expected Mean MCS	19	41.87	41.87	42.41	42.65	42.87	43.68	46.94	47.84	47.84
	Observed to Expected Ratio	19	0.86	0.86	0.87	0.89	0.94	1.05	1.08	1.10	1.10
PACE	Denominator	58	17	23	30	46	94.5	191	465	631	700
	Observed Mean MCS	58	33.74	35.21	38.27	39.91	42.29	44.01	45.71	46.84	48.14
	Expected Mean MCS	53	41.45	41.81	41.94	42.38	42.79	43.14	43.47	44.06	44.60
	Observed to Expected Ratio	53	0.82	0.89	0.91	0.95	0.99	1.02	1.07	1.08	1.09

***Note:** MCS, PCS, Age, Gender and ADL status must all be non-missing for each respondent in order for an expected MCS, and consequently an observed to expected ratio to be calculated. In addition, plans must have a denominator of at least 30 to report an observed to expected ratio.

The size of many SNP and PACE benefit packages was an issue. Less than 25 percent of Chronic Condition SNPs, less than 50 percent of Dual Eligible SNPs, just over 25 percent of Institutional SNPs and about 50 percent of PACE plans had a denominator of 100 or more—indicating that using MCS scores as a proxy for quality of life among frail beneficiaries in PACE and SNPs is not possible for most plans because of their small size.

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(Supplemental Data Tables that can be requested electronically provide benefit package-level results for observed and adjusted means.)

Looking at the O/E ratios for plans by higher-than-expected or lower-than-expected status against denominator size (see Appendix Figure 1: “Association of Denominator Size and Outlier Status”), the smallest O/E ratio for which a plan was identified as having an MCS mean significantly different from expected was 0.05 above or below 1.00. For denominators below 100, the O/E ratios must be extreme in order to identify better or worse means than expected.

Discussion

Findings from the three research questions addressed in this report suggest that at the program level, PACE and MA SNPs tend to have significantly higher proportions of members with poor health, relative to more traditional Medicare Advantage (Other MA). These findings were consistent even when broken down by the different types of SNPs (Institutional, Chronic Condition and Dual Eligible). Among SNPs and PACE, there were some consistent variations, with PACE generally exhibiting the lowest health scores, Chronic Condition SNPs exhibiting the highest, and Institutional and Dual SNPs in the middle of the health score continuum. For the most part, results were consistent with findings from the HSAG 2009 analysis, and suggest stability across multiple years.

Subgroup analyses also indicate that at the plan level, urinary incontinence, memory loss and depressed mood (in particular) were consistently linked to lower physical and mental health scores. In addition, the feasibility of differentiating plan performance using targeted analyses of existing HOS and HOS-M data—whether of at-risk subgroups or mental health scores among frailer PACE and SNP members—is an issue, primarily because of the small size of plans and PACE and SNP benefit packages.

Comparing results of PACE and specialized SNP plans with Other MA plans, one notable difference in the 2010 versus 2009 data was an increase in poor health for Institutional SNPs. There were increases in nearly all measures, including an increase of more than 5 percent in difficulty or inability to perform all ADLs and in eligibility and prevalence rates for *Fall Risk Management* and *Management of Urinary Incontinence in Older Adults* (see Table P). For example, from 2009 to 2010 there was a 14.1 percent increase in members who reported

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having any difficulty bathing and an 11.2 percent increase in members who reported being unable to bathe. Increases in poor health in self-rated general health, HRQOL, most chronic conditions, BMI and measure rates of physical activity in older adults were less than 5 percent (see Table P). There was a slight decrease in eligibility rates of physical activity in older adults and osteoporosis testing in older women (less than 5 percent) from 2009 to 2010.

Table P. Summary of Differences in Institutional SNP Findings From 2009 to 2010

Characteristics	Difference
Limitations on ADLs	++
Self-Rated General Health	+
Health-Related Quality of Life	+
Chronic Conditions	+
Body Mass Index	+
Fall Risk Management	++
Management of Urinary Incontinence in Older Adults	
Physical Activity in Older Adults	
Osteoporosis Testing in Older Women	-

- + = Results generally increased from 2009 to 2010 by ≤5 percent
 - ++ = Results generally increased from 2009 to 2010 by >5 percent
 - = Results generally decreased from 2009 to 2010 by >5 percent
 - = Results generally decreased from 2009 to 2010 by ≤5 percent
- Blank cell indicates small or inconsistent differences from 2009 to 2010

Differences in Institutional SNP data from 2009 and 2010 could result from a number of factors. There was also a 6.4 percent increase in the number of Institutional SNP members 85 years or older (from 33.4 percent to 39.8 percent) from 2009 to 2010. If the Institutional SNP population is aging, this may indicate a decrease in functioning. Another factor could be the 2009 enrollment spike in SNP plans, which could have affected the 2010 data. Additionally, it is possible that the population of Institutional SNPs included more individuals with developmental disabilities in 2010, which could have led to more members with ADL limitations. Because one year of data does not determine a trend, there must be further investigation to determine the cause of these changes.

There were slight increases in ADL limitations and the Effectiveness of Care measures for Dual Eligible SNPs. This may be a result of the Dual Demonstration SNPs phasing out of HOS-M and becoming part of HOS in 2010.

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Findings from analyses of at-risk subgroup samples (Question 2) reconfirmed separate findings (from Question 1) that SNPs and PACE plans (in particular) reported lower levels of health than Other MA plans. In addition, findings indicate that specified, at-risk PACE or SNP subgroups face the added “double-jeopardy” of not only being frailer overall, but also having lower levels of health than not-at-risk PACE and SNP counterparts.

Subgroup findings further suggest that the feasibility of differentiating comparative plan PCS and MCS performance, based on at-risk subgroups, is more promising if the focus is on the depressed-mood subgroup sample. The difference between depressed and non-depressed members was particularly pronounced (e.g., ≥ 4 standard deviations on PCS scores and ≥ 11 standard deviations on MCS scores in Other MA). But because additional analyses found small plan denominators for this subgroup (50th percentile denominators were $n = 79$ in SNP, $n = 105$ in Other MA, see Table M), efforts to find greater distinction in plans based on subgroups will be exacerbated by the issue of small numbers. (In concurrent case-mix adjustment work, a sample of 250 members is recommended to minimize “small numbers” issues).

This theme is consistent with other findings in this report regarding variation in MCS scores in PACE and SNP (Question 3). While there was substantial variation in the relationship between PCS and MCS scores across benefit packages, overall, the association between PCS and MCS was slight. Nearly half of all Institutional SNPs had a mean MCS score significantly lower than expected, while half of all Chronic Condition SNPs had a mean MCS score significantly higher than expected (see Table N). These differences may be real, or they may have resulted from poor model fit, 69 percent of all members included in the development of the MCS prediction model were from Dual Eligible SNPs (see Appendix Table 33), which had the lowest proportion of benefit packages with significantly higher or lower MCS means than expected. Therefore, this model, whose parameter estimates were predominantly based on members from Dual Eligible SNPs, was not a good fit for PACE, Chronic Condition SNPs and Institutional SNPs.

Although there could be separate models for each plan type, the number of observations on which regression coefficients would be estimated would become smaller (3,457 for Institutional SNPs; 9,652 for PACE; 9,825 for Chronic Condition SNPs, see Appendix Table 33). An alternative methodology would be to include plan type in the model, therefore adjusting for the effects of gender, age, PCS and ADL difficulty that may exist for each plan type. However, the relationship between plan type and the predictors for MCS score mean may be complex,

exacerbating the small-number issue rather than solving it (because there are too few members to evaluate interactions between plan type and member characteristics).

Assessment of lower-than-expected or higher-than-expected MCS scores was negatively affected by small denominators for many benefit packages. Less than half of all PACE and Dual Eligible SNPs had denominators of 100 or more, and roughly a quarter of Institutional and Chronic Condition SNPs had denominators of 100 or more.

This study has several limitations that should be kept in mind when interpreting results. Like many health surveys, there is the potential for non-response bias, with the expectation that those in poorer health may be less likely to respond to the survey. There is no information on the health of individuals who did not respond to the HOS or HOS-M. Questions on health status in the HOS and HOS-M also refer only to the time of the (Baseline) 2010 survey, and so do not account for respondents' health status prior to enrolling in their plans. PACE and SNP members are expected to be in generally frailer and poorer health than those in Other MA. Thus, even if PACE and SNP plans improved or slowed decline in an individual's health, vulnerable PACE and SNP respondents may still report worse health status relative to Other MA respondents. There is also potential for selection bias based on length of time a person has been enrolled in a health plan, which could not be addressed within the scope of this analysis, but should be incorporated in future research where warranted.

Conclusions

As the analysis suggests, the physical and mental health conditions of members in specialized managed care plans are significantly different from members of non-specialized MA organizations, and specified at-risk subgroups face greater risk of poor physical and mental health. The performance of coordinated care provided by specialized plans will need to be monitored and studied to determine if structural changes are warranted in the future.

The feasibility of highlighting distinctions between plans is an issue because of small sizes; therefore, we can "rule out" the possibility of using Mental Component scores (in PACE and SNPS) to distinguishing comparative plan performance. To address this, the literature has suggested that more beneficiaries must be surveyed for results to be reported at any level smaller than the current contract level.ⁱⁱ Another consideration would be to target sampling to those who may be more responsive to health status change, e.g., pre- and post-surgery

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patients, cancer patients. To show more distinctions in plan performance, future efforts should also consider additional health indicators or domains that may show more distinction at the contract level. The current HOS instruments address many key aspects of health. However, further evaluation and data development may identify sets of different measures that might be used to assess MA and PACE performance, including measures that reflect more plan distinction, are relevant to the Medicare population, and are appropriate for use in the HOS self-reported format.

Appendix Tables

Differences in Patients and Health Status Across Medicare Programs (Question 1):

Table 1. 2009 and 2010 Sociodemographic Characteristics by Plan Type

Characteristics	HOS (%)				HOS-M (%)		HOS (%)			
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Sample Size (n)	2,776	3,457	12,231	9,825	38,584	50,812	8,489	9,652	235,203	273,155
Gender										
Female	68.4	71.1	54.5**	54.3	63.5	64.3	73.0	74.1	56.0	56.7
Age Category										
Age, mean (SD)	80.0 (10.2)	81.1 (10.7)	72.4 (10.2)	69.8 (11.9)	66.2 (14.8)	66.5 (15.0)	79.9 (9.6)	79.8 (9.6)	74.3 (8.9)	72.8 (9.4)
(SE)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	NA	(0.1)	(0.1)	(0.1)
<65	5.3	7.4	16.0	24.4	38.1	37.2	7.5	7.7	9.0	11.5
65 to 74.9	26.5	18.3	43.4	42.7	32.3	32.8	22.9	23.2	45.4	49.4
75 to 84.9	34.8 ^{NS}	34.5	31.7	24.9	22.4	21.0	36.5*	36.2	35.2	29.9
≥85	33.4	39.8	8.9	8.0	7.2	9.0 ^{NS}	33.1	32.9	10.4	9.2
Race/Ethnicity										
White	74.7	76.0	67.1	67.8	56.6	57.5	55.5	58.5	85.3	84.0
African American	18.2	17.2	26.8	25.0	24.2	23.0	23.5	22.4	9.2	10.2
Native American, Other, Unknown	2.6*	1.8*	1.9 ^{NS}	2.2 ^{NS}	2.9	3.6	2.9	2.8***	2.1	2.3
Asian/Pacific Islander	1.9 ^{NS}	1.5 ^{NS}	1.1***	1.1	5.3	5.8	9.0	8.0	1.5	1.6
Hispanic	2.6**	3.5	3.1	4.0	10.9	10.0	9.1	8.2	1.9	1.9
Marital Status										
Married	28.2	23.6	44.9	40.4	23.2	21.3	NA	NA	55.9	53.9
Never Married, Separated, Divorced	23.4	23.3	23.0	29.2	47.2	48.5	NA	NA	16.2	18.7
Widowed	41.6	44.1	26.9	24.7	24.4*	24.3	NA	NA	24.2	23.1
Missing	6.8	9.0	5.2	5.7	5.2	6.0	NA	NA	3.7	4.3
Education Category										
8th Grade or Less	16.1	16.7	17.5	16.2	28.8	26.6	NA	NA	9.7	9.2
Some High School, But Did Not Graduate	16.4	14.3***	19.6	17.4	19.7	19.3	NA	NA	13.4	13.2
High School Graduate or GED	29.9	30.9*	30.5	30.6	25.8	27.4	NA	NA	35.3	35.1
Some College or 2-Year Degree	17.8***	16.3	18.1	20.6***	13.6	14.0	NA	NA	21.8	22.4

Appendix

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
4-Year College Degree	5.8**	5.7**	4.4	4.9	2.9	3.1	NA	NA	7.6	7.7
More Than 4-Year College Degree	5.0	4.3	4.0	4.0	2.0	2.0	NA	NA	8.2	7.6
Missing	8.9	11.9	5.9	6.3	7.2	7.6	NA	NA	4.1	4.8
Annual Household Income Category										
Income, mean (SD)— Excludes "Don't know"	3.4 (1.7)	3.2 (1.7)	3.5 (1.5)	3.5 (1.6)	2.5 (1.2)	2.4 (1.2)	NA	NA	4.3 (1.7)	4.2 (1.7)
(SE)	(0.04)	(0.03)	(0.02)	(0.02)	(0.01)	(0.009)	NA	NA	(0.01)	(0.01)
<\$5,000	9.4	11.3	7.1	8.5	15.3	15.6	NA	NA	3.3	3.7
\$5,000 to \$9,999	9.3	9.3	10.4	10.3	28.5	30.2	NA	NA	5.2	5.4
\$10,000 to \$19,999	22.8	20.4 ^{NS}	28.7	28.0	21.5*	22.0 ^{NS}	NA	NA	20.6	21.4
\$20,000 to \$29,999	11.6	10.6	16.6***	15.3	4.6	4.5	NA	NA	17.6	17.7
\$30,000 to \$39,999	6.0	5.5	8.0	7.7	2.1	1.9	NA	NA	11.5	11.1
\$40,000 to \$49,999	3.2	3.0	4.3	4.1	1.2	1.0	NA	NA	7.7	7.3
≥\$50,000	6.3	4.2	5.0	5.3	1.6	1.4	NA	NA	13.1	12.2
Don't know	12.8	17.3	9.4 ^{NS}	10.3**	15.4	14.2	NA	NA	9.2	9.4
Missing	18.7	18.5	10.3	10.4	9.9	9.2	NA	NA	11.8	11.9

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated (missing rows were not tested).

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 2. 2009 and 2010 Limitations in Activities of Daily Living by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
ADL Limitations Category										
Any Difficulty§, mean (SD)	2.7 (2.5)	3.5 (2.4)	1.4 (1.8)	1.5 (1.9)	1.9 (2.0)	2.1 (2.1)	3.3 (2.1)	3.4 (2.1)	1.0 (1.6)	1.0 (1.6)
(SE)	(0.03)	(0.03)	(0.02)	(0.02)	(0.01)	(0.01)	NA	(0.02)	(0.01)	(0.01)
Any Difficulty Bathing	47.9	62.0	23.9	25.3	32.7	36.0	68.3	68.4	15.2	15.9
Any Difficulty Getting In/Out of Chairs	49.0	60.2	30.9	32.4	38.4	40.5	61.2	62.0	22.9	23.1
Any Difficulty Dressing	42.6	56.6	19.2	20.5	27.6	29.9	56.2	56.7	12.5	13.1
Any Difficulty Eating	26.1	33.4	8.5	8.6	13.5	14.7	24.5	24.8	5.2	5.5
Any Difficulty Using Toilet	38.4	50.9	14.0	14.9	20.2	22.8	44.6	45.5	9.3	9.5
Any Difficulty Walking	58.1	69.6	44.4	45.6	51.0	53.7	76.9	77.4	32.2	32.4
Unable to do, mean (SD)	1.4 (2.1)	1.9 (2.3)	0.2 (0.7)	0.2 (0.7)	0.3 (1.0)	0.4 (1.1)	1.0 (1.7)	1.0 (1.7)	0.1 (0.6)	0.1 (0.6)
(SE)	(0.013)	(0.01)	(0.007)	(0.01)	(0.004)	(0.004)	NA	(0.01)	(0.004)	(0.004)
Unable to Bathe	30.5	41.7	4.3	4.5	7.5	9.5	30.3	30.9	2.8	2.8
Unable to Get In/Out of Chairs	22.8	30.3	2.1	2.1	4.1	5.2	13.1	13.6	1.4	1.4
Unable to Dress	25.3	34.1	2.5	2.8	5.0	6.3	18.7	19.4	1.7	1.7
Unable to Eat	8.2	11.6	1.2	1.2	2.2	2.7	5.2	5.0	0.7	0.8
Unable to Use Toilet	21.9	28.7	1.8	1.9	3.6	4.6	12.5	12.8	1.2	1.3
Unable to Walk	27.4	36.0	4.4	4.5	6.9	8.3	20.5	21.3	2.7	2.9

§- Any difficulty with ADL limitations is defined as having difficulty or inability to perform one or more of the six individual activities.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 3. 2009 and 2010 Adjusted Limitations in Activities of Daily Living by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
ADL Limitations Category										
Any Difficulty§, mean (SE) ¹	2.9 (0.03)	3.5 (0.03)	1.7 (0.02)	1.8 (0.02)	1.9 (0.01)	2.1 (0.01)	3.4 (0.02)	3.5 (0.02)	1.4 (0.01)	1.4 (0.01)
Any Difficulty§, mean (SE) ²	2.7 (0.04)	3.4 (0.03)	1.6 (0.02)	1.6 (0.02)	1.7 (0.01)	1.9 (0.01)	NA	NA	1.3 (0.02)	1.4 (0.01)
Difficulty Bathing ³	47.9	62.0	23.9	25.3	32.7	36.0	68.3	68.4	15.2	15.9
Difficulty Getting In/Out of Chairs	49.0	60.2	30.9	32.4	38.4	40.5	61.2	62.0	22.9	23.1
Difficulty Dressing	42.6	56.6	19.2	20.5	27.6	29.9	56.2	56.7	12.5	13.1
Difficulty Eating	26.1	33.4	8.5	8.6	13.5	14.7	24.5	24.8	5.2	5.5
Difficulty Using Toilet	38.4	50.9	14.0	14.9	20.2	22.8	44.6	45.5	9.3	9.5
Difficulty Walking	58.1	69.6	44.4	45.6	44.4	53.7	76.9	77.4	32.2	32.4
Unable to do, mean (SE) ¹	1.4 (0.02)	1.9 (0.01)	0.2 (0.01)	0.2 (0.01)	0.3 (0.005)	0.4 (0.004)	1.0 (0.01)	1.0 (0.01)	0.2 (0.005)	0.2 (0.004)
(SE) ²	1.3 (0.01)	1.8 (0.01)	0.2 (0.01)	0.2 (0.01)	0.3 (0.005)	0.4 (0.004)	NA	NA	0.2 (0.007)	0.2 (0.004)
Unable to Bathe ³	30.5	41.7	4.3	4.5	7.5	9.5	30.3	30.9	2.8	2.8
Unable to Get in or out of Chairs	22.8	30.3	2.1	2.1	4.1	5.2	13.1	13.6	1.4	1.4
Unable to Dress	25.3	34.1	2.5	2.8	5.0	6.3	18.7	19.4	1.7	1.7
Unable to Eat	8.2	11.6	1.2	1.2	2.2	2.7	5.2	5.0	0.7	0.8
Unable to Use Toilet	21.9	28.7	1.8	1.9	3.6	4.6	12.5	12.8	1.2	1.3
Unable to Walk	27.4	36.0	4.4	4.5	6.9	8.3	20.5	21.3	2.7	2.9

§- Any difficulty with ADL limitations is defined as having difficulty or inability to perform one or more of the six individual activities.

¹ Adjusted means from models including Plan type and three covariates (age, gender, race/ethnicity)

² Adjusted means from models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education, household income)

³ Unadjusted proportions with significance from adjusted models including Plan type and three covariates (age, gender, race/ethnicity)

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 4. 2009 and 2010 Self-Rated General Health by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Self-Rated General Health Category										
Self-Rated General Health, mean (SD)§	2.5 (1.0)	2.3 (1.0)	2.6 (1.0)	2.5 (1.0)	2.4 (1.0)	2.4 (1.0)	2.3 (0.9)	2.3 (0.9)	3.0 (1.0)	3.0 (1.0)
(SE)§	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.005)	NA	(0.01)	(0.01)	(0.005)
Poor	19.3	23.5	12.8	14.4	12.8	17.2	19.4	19.2	6.6	7.1
Fair	33.0	35.1	35.1	36.1	35.1	41.1	43.7	42.8	23.7	23.8
Good	30.5	27.5	34.5	33.4	34.5	28.5	26.0	26.8	37.9	36.9
Very Good	13.0	9.6	13.4	12.0	13.4	8.7	7.2	7.5	24.4	24.2
Excellent	2.9	2.6	2.3	2.5	2.3	2.8	2.0	1.8	5.9	6.4
Missing	1.2	1.7	1.9	1.7	1.9	1.8	1.6	1.9	1.5	1.6

§ - Excludes "Missing"

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 5. 2009 and 2010 Adjusted Self-Rated General Health by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Self-Rated General Health Category										
Self-Rated General Health, mean (SE) § ¹	2.3 (0.02)	2.2 (0.02)	2.4 (0.01)	2.3 (0.01)	2.3 (0.01)	2.3 (0.01)	2.1 (0.01)	2.1 (0.01)	2.7 (0.01)	2.7 (0.005)
(SE) § ²	2.4 (0.02)	2.3 (0.02)	2.6 (0.01)	2.5 (0.01)	2.6 (0.01)	2.6 (0.01)	NA	NA	2.8 (0.01)	2.8 (0.006)
Poor ³	19.3	23.5	12.8	14.4	17.4	17.2	19.4	19.2	6.6	7.1
Fair	33.0	35.1	35.1	36.1	40.8	41.1	43.7	42.8	23.7	23.8
Good	30.5	27.5	34.5	33.4	27.7	28.5	26.0	26.8	37.9	36.9
Very Good	13.0	9.6	13.4	12.0	9.4	8.7	7.2	7.5	24.4	24.2
Excellent	2.9	2.6	2.3	2.5	2.9	2.8	2.0	1.8	5.9	6.4
Missing	1.2	1.7	1.9	1.7	1.7	1.8	1.6	1.9	1.5	1.6

§—Excludes “Missing”

¹ Adjusted means from models including Plan type and three covariates (age, gender and race/ethnicity)

² Adjusted means from models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

³ Unadjusted proportions with significance from adjusted models including Plan type and three covariates (age, gender and race/ethnicity)

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 6. 2009 and 2010 Adjusted Health Related Quality of Life (PCS & MCS Scores)

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
PCS, mean (SE) ¹	31.3 (0.2)	29.2 (0.2)	32.7 (0.1)	32.7 (0.1)	33.1 (0.07)	32.7 (0.1)	27.7 (0.1)	27.6 (0.1)	36.3 (0.08)	36.3 (0.06)
(SE) ²	33.2 (0.3)	30.7 (0.2)	34.5 (0.1)	34.6 (0.1)	35.4 (0.1)	35.1 (0.1)	NA	NA	37.0 (0.11)	37.2 (0.07)
MCS, mean (SE) ¹	41.9 (0.2)	40.1 (0.2)	44.5 (0.1)	44.5 (0.1)	43.2 (0.07)	43.2 (0.1)	39.3 (0.1)	39.6 (0.1)	47.6 (0.08)	47.5 (0.06)
(SE) ²	43.1 (0.2)	41.2 (0.2)	45.8 (0.1)	45.9 (0.1)	45.8 (0.1)	45.8 (0.1)	NA	NA	47.9 (0.11)	47.9 (0.07)

¹ Adjusted means from models including Plan type and three covariates (age, gender and race/ethnicity)

² Adjusted means from models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 7. 2009 and 2010 Chronic Conditions by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Chronic Conditions, mean (SD)	3.4 (2.3)	3.7 (2.4)	3.9 (2.4)	3.9 (2.3)	3.7 (2.6)	3.7 (2.5)	NA	NA	3.1 (2.2)	3.1 (2.1)
(SE)	(0.04)	(0.04)	(0.02)	(0.02)	(0.01)	(0.01)	NA	NA	(0.01)	(0.01)
Arthritis of Hip or Knee										
Yes—All observations	42.9	46.3	47.1	45.8	50.1	49.3	NA	NA	41.0	40.8
Yes—Among non-missing	47.1	51.5	49.7	48.5	52.8	52.3	NA	NA	42.5	42.6
Missing	8.8	10.0	5.1	5.6	5.1	5.8	NA	NA	3.6	4.2
Arthritis of Hand or Wrist										
Yes—All observations	38.1	39.9	41.5	40.9	43.7	43.2	NA	NA	36.7	36.3
Yes—Among non-missing	42.3	44.3	43.9	43.5	46.3	46.0	NA	NA	38.1	38.0
Missing	9.8	9.9	5.5	5.9	5.6	6.1	NA	NA	3.9	4.4
Diabetes										
Yes—All observations	26.7	30.5	43.4	45.7	33.2	34.6	NA	NA	23.8	25.2
Yes—Among non-missing	29.0	33.3	45.5	48.1	34.9	36.5	NA	NA	24.6	26.2
Missing	8.2	8.6	4.8	4.9	4.8	5.3	NA	NA	3.3	3.8
Inflammatory Bowel Diseases										
Yes—All observations	5.9	6.5	5.7	6.1	8.4	8.1	NA	NA	5.3	5.3
Yes—Among non-missing	6.6*	7.3	6.1**	6.6	9.0	8.7	NA	NA	5.5	5.5
Missing	9.8	10.2	6.5	6.4	6.7	7.0	NA	NA	4.2	4.6
High Blood Pressure										
Yes—All observations	62.3	62.3**	74.7	74.4	64.4	65.1	NA	NA	63.5	63.5
Yes—Among non-missing	67.6*	68.4**	78.0	77.9	67.3	68.5	NA	NA	65.5	65.8
Missing	7.9	9.0	4.3	4.6	4.3	4.9	NA	NA	3.0	3.5
Other Heart Conditions¹										
Yes—All observations	20.6	22.8	27.1	27.3	22.2	22.4	NA	NA	22.2	21.3
Yes—Among non-missing	23.0 ^{NS}	25.4	28.9	29.1	23.6*	24.0	NA	NA	23.1	22.3
Missing	10.3	10.3	6.1	6.0	6.0	6.4	NA	NA	4.0	4.4
Myocardial Infarction										
Yes—All observations	10.3	11.6	15.5	15.3	11.2	11.3	NA	NA	10.8	10.1

Appendix

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Yes—Among non-missing	11.5 ^{NS}	13.0	16.4	16.3	11.9 ^{***}	12.1	NA	NA	11.2	10.6
Missing	9.8	10.3	5.8	6.1	5.9	6.4	NA	NA	3.8	4.3
Osteoporosis										
Yes—All observations	27.4	29.6	19.3	17.8	24.1	24.7	NA	NA	20.1	19.7
Yes—Among non-missing	30.4	33.1	20.6 ^{NS}	18.9	25.6	26.5	NA	NA	21.0	20.6
Missing	9.9	10.7	6.1	6.0	6.1	6.8	NA	NA	4.1	4.6
Sciatica										
Yes—All observations	20.2	22.6 ^{NS}	26.3	27.7	30.2	30.6	NA	NA	22.8	23.3
Yes—Among non-missing	22.6 ^{NS}	25.3 ^{NS}	28.0	29.6	32.2	32.7	NA	NA	23.8	24.4
Missing	10.7	10.5	6.2	6.4	6.1	6.6	NA	NA	4.1	4.5
Stroke										
Yes—All observations	16.9	21.8	13.6	12.5	11.8	12.6	NA	NA	8.6	8.4
Yes—Among non-missing	18.5	24.0	14.3	13.3	12.5	13.3	NA	NA	8.9	8.7
Missing	8.6	9.1	8.6	5.5	5.5	5.9	NA	NA	3.6	4.1
Coronary Artery Disease										
Yes—All observations	15.0	16.5	19.6	18.7	15.5	15.0	NA	NA	14.6	13.9
Yes—Among non-missing	16.7 ^{NS}	18.6	21.1	20.1	16.6	16.2	NA	NA	15.3	14.6
Missing	10.4	11.5	6.9	6.8	6.7	7.2	NA	NA	4.5	4.9
Congestive Heart Failure										
Yes—All observations	14.0	18.1	15.4	15.4	13.2	13.5	NA	NA	8.8	8.4
Yes—Among non-missing	15.5	20.1	16.4	16.4	14.0	14.4	NA	NA	9.2	8.8
Missing	9.7	10.2	6.0	6.2	6.3	6.6	NA	NA	4.1	4.5
COPD										
Yes—All observations	14.9	16.6*	22.0	23.5	23.0	24.6	NA	NA	15.2	16.1
Yes—Among non-missing	16.5 ^{NS}	18.4*	23.3	24.9	24.3	26.1	NA	NA	15.8	16.7
Missing	9.4	9.7	5.3	5.5	5.6	6.0	NA	NA	3.6	4.1
Any Cancer										
Yes—All observations	12.9	13.3 ^{NS}	13.5	13.2 ^{**}	9.8	10.3	NA	NA	15.2	14.3
Yes—Among non-missing	14.1*	14.6 ^{NS}	14.2	13.9 ^{**}	10.3	10.9	NA	NA	15.7	14.9

Appendix

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Missing	8.5	8.9	4.8	5.1	5.0	5.4	NA	NA	3.2	3.8
Under Treatment for Breast Cancer²										
No	98.1	98.0	98.3	98.3	98.4	98.3	NA	NA	98.2	98.2
Yes	2.1 ^{NS}	2.0 ^{NS}	1.8 ^{NS}	1.8 ^{NS}	1.7*	1.7 ^{NS}	NA	NA	1.9	1.8
Under Treatment for Colon Cancer										
No	99.1	99.2	99.0	98.7	99.1	99.0	NA	NA	99.1	99.1
Yes	0.9 ^{NS}	0.8 ^{NS}	1.0 ^{NS}	1.3	1.0 ^{NS}	1.0 ^{NS}	NA	NA	1.0	0.9
Under Treatment for Lung Cancer										
No	99.6	99.8	99.3	99.1	99.4	99.4	NA	NA	99.4	99.4
Yes	0.5 ^{NS}	0.3*	0.7 ^{NS}	0.9 ^{***}	0.6 ^{NS}	0.7 ^{NS}	NA	NA	0.6	0.6
Under Treatment for Prostate Cancer³										
No	98.1	98.2	97.4	97.9	98.6	98.6	NA	NA	97.3	97.5
Yes	2.1*	1.8*	2.7 ^{NS}	2.1*	1.4	1.5	NA	NA	2.8	2.5

¹ Other Heart Conditions, such as problems with heart valves or the rhythm of the heartbeat.

² Breast Cancer includes 163 observations from CMS data reporting male gender.

³ Prostate Cancer includes 169 observations from CMS data reporting female gender.

Statistical tests were performed only for the non-missing results.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 8. 2009 and 2010 Adjusted Chronic Conditions by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Chronic Conditions, mean (SE) ¹	3.3*** (0.05)	3.5 (0.04)	3.4 (0.02)	3.7 (0.02)	3.4 (0.02)	3.4 (0.01)	NA	NA	3.1 (0.02)	3.1 (0.01)
Arthritis of Hip or Knee²										
Yes—All observations	42.9	46.3	47.1	45.8	50.1	49.3	NA	NA	41.0	40.8
Yes—Among non-missing	47.1 ^{NS}	51.5	49.7	48.5	52.8	52.3	NA	NA	42.5	42.6
Missing	8.8	10.0	5.1	5.6	5.1	5.8	NA	NA	3.6	4.2
Arthritis of Hand or Wrist										
Yes—All observations	38.1	39.9**	41.5	40.9	43.7	43.2	NA	NA	36.7	36.3
Yes—Among non-missing	42.3 ^{NS}	44.3**	43.9	43.5	46.3	46.0	NA	NA	38.1	38.0
Missing	9.8	9.9	5.5	5.9	5.6	6.1	NA	NA	3.9	4.4
Diabetes										
Yes—All observations	26.7	30.5	43.4	45.7	33.2	34.6	NA	NA	23.8	25.2
Yes—Among non-missing	29.0	33.3	45.5	48.1	34.9	36.5	NA	NA	24.6	26.2
Missing	8.2	8.6	4.8	4.9	4.8	5.3	NA	NA	3.3	3.8
Inflammatory Bowel Diseases										
Yes—All observations	5.9	6.5**	5.7	6.1 ^{NS}	8.4	8.1	NA	NA	5.3	5.3
Yes—Among non-missing	6.6 ^{NS}	7.3**	6.1 ^{NS}	6.6 ^{NS}	9.0	8.7	NA	NA	5.5	5.5
Missing	9.8	10.2	6.5	6.4	6.7	7.0	NA	NA	4.2	4.6
High Blood Pressure										
Yes—All observations	62.3	62.3 ^{NS}	74.7	74.4	64.4	65.1*	NA	NA	63.5	63.5
Yes—Among non-missing	67.6 ^{NS}	68.4 ^{NS}	78.0	77.9	67.3 ^{NS}	68.5*	NA	NA	65.5	65.8
Missing	7.9	9.0	4.3	4.6	4.3	4.9	NA	NA	3.0	3.5
Other Heart Conditions³										
Yes—All observations	20.6	22.8 ^{NS}	27.1	27.3	22.2	22.4	NA	NA	22.2	21.3
Yes—Among non-missing	23.0 ^{NS}	25.4 ^{NS}	28.9	29.1	23.6	24.0	NA	NA	23.1	22.3
Missing	10.3	10.3	6.1	6.0	6.0	6.4	NA	NA	4.0	4.4
Myocardial Infarction										
Yes—All observations	10.3	11.6**	15.5	15.3	11.2	11.3	NA	NA	10.8	10.1
Yes—Among non-missing	11.5 ^{NS}	13.0 ^{NS}	16.4	16.3	11.9	12.1	NA	NA	11.2	10.6

Appendix

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Missing	9.8	10.3	5.8	6.1	5.9	6.4	NA	NA	3.8	4.3
Osteoporosis										
Yes—All observations	27.4	29.6	19.3	17.8 ^{NS}	24.1	24.7	NA	NA	20.1	19.7
Yes—Among non-missing	30.4	33.1	20.6 ^{NS}	18.9 ^{NS}	25.6	26.5	NA	NA	21.0	20.6
Missing	9.9	10.7	6.1	6.0	6.1	6.8	NA	NA	4.1	4.6
Sciatica²										
Yes—All observations	20.2	22.6*	26.3	27.7***	30.2	30.6	NA	NA	22.8	23.3
Yes—Among non-missing	22.6 ^{NS}	25.3*	28.0	29.6***	32.2	32.7	NA	NA	23.8	24.4
Missing	10.7	10.5	6.2	6.4	6.1	6.6	NA	NA	4.1	4.5
Stroke										
Yes—All observations	16.9	21.8	13.6	12.5	11.8	12.6	NA	NA	8.6	8.4
Yes—Among non-missing	18.5	24.0	14.3	13.3	12.5	13.3	NA	NA	8.9	8.7
Missing	8.6	9.1	5.1	5.5	5.5	5.9	NA	NA	3.6	4.1
Coronary Artery Diseases										
Yes—All observations	15.0	16.5	19.6	18.7	15.5	15.0	NA	NA	14.6	13.9
Yes—Among non-missing	16.7*	18.6	21.1	20.1	16.6	16.2	NA	NA	15.3	14.6
Missing	10.4	11.5	6.9	6.8	6.7	7.2	NA	NA	4.5	4.9
Congestive Heart Failure										
Yes—All observations	14.0	18.1	15.4	15.4	13.2	13.5	NA	NA	8.8	8.4
Yes—Among non-missing	15.5	20.1	16.4	16.4	14.0	14.4	NA	NA	9.2	8.8
Missing	9.7	10.2	6.0	6.2	6.3	6.6	NA	NA	4.1	4.5
COPD										
Yes—All observations	14.9	16.6*	22.0	23.5	23.0	24.6	NA	NA	15.2	16.1
Yes—Among non-missing	16.5 ^{NS}	18.4*	23.3	24.9	24.3	26.1	NA	NA	15.8	16.7
Missing	9.4	9.7	5.3	5.5	5.6	6.0	NA	NA	3.6	4.1
Any Cancer										
Yes—All observations	12.9	13.3*	13.5	13.2 ^{NS}	9.8	10.3*	NA	NA	15.2	14.3
Yes—Among non-missing	14.1*	14.6*	14.2 ^{NS}	13.9 ^{NS}	10.3	10.9*	NA	NA	15.7	14.9
Missing	8.5	8.9	4.8	5.1	5.0	5.4	NA	NA	3.2	3.8

Appendix

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Under Treatment for Breast Cancer⁴										
No	98.1	98.0	98.3	98.3	98.4	98.3	NA	NA	98.2	98.2
Yes	2.1 ^{NS}	2.0 ^{NS}	1.8 ^{NS}	1.8 ^{NS}	1.7*	1.7 ^{NS}	NA	NA	1.9	1.8
Under Treatment for Colon Cancer										
No	99.1	99.2	99.0	98.7	99.1	99.0	NA	NA	99.1	99.1
Yes	0.9 ^{NS}	0.83 ^{NS}	1.0 ^{NS}	1.3**	1.0 ^{NS}	1.0 ^{NS}	NA	NA	1.0	0.9
Under Treatment for Lung Cancer										
No	99.6	99.8	99.3	99.1	99.4	99.4	NA	NA	99.4	99.4
Yes	0.5 ^{NS}	0.3 ^{NS}	0.7 ^{NS}	0.9*	0.6 ^{NS}	0.7 ^{NS}	NA	NA	0.6 ^{NS}	0.6
Under Treatment for Prostate Cancer⁵										
No	98.1	98.2	97.4	97.9	98.6	98.6	NA	NA	97.3	97.5
Yes	2.1 ^{NS}	1.8 ^{NS}	2.7 ^{NS}	2.1 ^{NS}	1.4 ^{NS}	1.5 ^{NS}	NA	NA	2.8	2.5

¹ Adjusted means from models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

² Unadjusted proportions with significance from adjusted models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

³ Other Heart Conditions, such as problems with heart valves or rhythm of the heartbeat.

⁴ Breast Cancer includes 163 observations from CMS data reporting male gender.

⁵ Prostate Cancer includes 169 observations from CMS data reporting female gender.

Statistical tests were performed only for the non-missing results.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 9. 2009 and 2010 Body Mass Index by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
BMI Category										
BMI, mean (SD)	26.8 (6.2)	27.0 (6.7)	29.0 (6.6)	29.3 (6.7)	28.8 (7.2)	28.9 (7.3)	NA	NA	27.5 (5.7)	27.8 (5.9)
(SE)	(0.1)	(0.1)	(0.1)	(0.1)	(0.03)	(0.03)	NA	NA	(0.03)	(0.03)
Underweight (BMI <20)	10.3	11.1	4.7**	4.6 ^{NS}	6.9	6.7	NA	NA	5.4	5.1
Normal (BMI 20-24)	27.8*	27.8	21.7	20.1	23.1	22.9	NA	NA	27.3	26.1
Overweight (BMI 25-29)	29.8	24.9	32.7	32.0	28.8	27.9	NA	NA	36.5	35.7
Obese (BMI 30-34)	15.4 ^{NS}	15.1*	19.4	20.4	18.4	18.5	NA	NA	17.2	17.8
Morbid Obesity (BMI ≥35)	7.5*	9.8 ^{NS}	15.3	16.1	15.6	16.3	NA	NA	9.1	10.3
Missing	9.1	11.3	6.4	6.8	7.3	7.7	NA	NA	4.5	5.1

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Table 10. 2009 and 2010 Adjusted Body Mass Index by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
BMI Category										
BMI, mean (SE) ¹	26.6 ^{NS} (0.1)	26.9** (0.1)	27.4 (0.06)	27.4 (0.1)	26.9 (0.04)	27.0 (0.04)	NA	NA	26.6 (0.06)	26.6 (0.04)
Underweight (BMI <20)	10.3	11.1	4.7 ^{NS}	4.6 ^{NS}	6.9**	6.7 ^{NS}	NA	NA	5.4	5.1
Normal (BMI 20-24)	27.8**	27.8*	21.7	20.1	23.1***	22.9	NA	NA	27.3	26.1
Overweight (BMI 25-29)	29.8 ^{NS}	24.9	32.7	32.0***	28.8	27.9	NA	NA	36.5	35.7
Obese (BMI 30-34)	15.4 ^{NS}	15.1 ^{NS}	19.4**	20.4	18.4 ^{NS}	18.5*	NA	NA	17.2	17.8
Morbid Obesity (BMI ≥35)	7.5 ^{NS}	9.8	15.3	16.1	15.6	16.3	NA	NA	9.1	10.3
Missing	9.1	11.3	6.4	6.8	7.3	7.7	NA	NA	4.5	5.1

¹ Adjusted means from models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

² Unadjusted proportions with significance from adjusted models including Plan type and six covariates (age, gender, race/ethnicity, marital status, education and household income)

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 11A. 2009 and 2010 Eligibility Status for HEDIS Measures by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Fall Risk Management										
Eligible for Discussing Fall Risk	71.6	77.5	64.1	61.9	67.7	67.4	NA	NA	60.1	55.3
Eligible for Managing Fall Risk	46.9	57.6	43.1	43.5	49.0	50.2	NA	NA	35.0	33.3
Management of Urinary Incontinence (UI) in Older Adults										
Eligible for Discussing UI	39.1	46.1	30.2	29.6	31.1	32.2	NA	NA	26.7	26.0
Eligible for Receiving UI Treatment	38.6	46.4	30.1	29.6	31.0	32.0	NA	NA	26.6	25.9
Physical Activity in Older Adults										
Eligible for Discussing Physical Activity	84.5	83.4	88.0	89.1 ^{NS}	86.9	86.5	NA	NA	89.7	89.2
Eligible for Advising Physical Activity	86.6	84.7	91.3 [*]	91.4 ^{NS}	90.5	89.6	NA	NA	91.9	91.5
Osteoporosis Testing in Older Women										
Eligible for Osteoporosis Testing in Older Women	87.0	84.9	92.1	92.3	92.0	90.9	NA	NA	94.8	94.2

Unadjusted proportions with significance level based on adjustment for plan type only.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 11B. 2009 and 2010 HEDIS Measure Results by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Fall Risk Management										
Discussing Fall Risk Rate	37.1	45.0	34.3	37.1	41.8	44.1	NA	NA	27.9	28.9
Managing Fall Risk Rate	69.5	76.6	60.2	62.6	68.0	72.5	NA	NA	54.3	55.5
Management of Urinary Incontinence (UI) in Older Adults										
Discussing UI Rate	68.2	73.0	57.6 ^{NS}	57.7 ^{NS}	61.2	63.8	NA	NA	56.9	56.4
Receiving UI Treatment Rate	38.2 ^{NS}	36.6 ^{NS}	35.3 ^{NS}	33.0 ^{**}	34.9 [*]	36.8 [*]	NA	NA	36.3	35.8
Physical Activity in Older Adults										
Discussing Physical Activity Rate	49.1 ^{***}	50.0 ^{**}	52.5 ^{NS}	54.2 ^{NS}	48.0	50.8	NA	NA	52.7	53.1
Advising Physical Activity Rate	41.1	42.5	48.8	51.9	47.5 ^{***}	48.8	NA	NA	46.1	46.4
Osteoporosis Testing in Older Women										
Osteoporosis Testing in Older Women Rate	59.0	58.2	61.4	62.7	55.6	57.3	NA	NA	72.0	72.9

Unadjusted proportions with significance level based on adjustment for plan type only.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 12A. 2009 and 2010 Adjusted Eligibility Status for HEDIS Measures by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Fall Risk Management										
Eligible for Discussing Fall Risk	71.6 ^{NS}	77.5	64.1	61.9	67.7	67.4	NA	NA	60.1	55.3
Eligible for Managing Fall Risk	46.9	57.6	43.1	43.5	49.0	50.2	NA	NA	35.0	33.3
Management of Urinary Incontinence (UI) in Older Adults										
Eligible for Discussing UI	39.1	46.1	30.2	29.6	31.1	32.2	NA	NA	26.7	26.0
Eligible for Receiving UI Treatment	38.6	46.4	30.1	29.6	31.0	32.0	NA	NA	26.6	25.9
Physical Activity in Older Adults										
Eligible for Discussing Physical Activity	84.5 ^{NS}	83.4 ^{NS}	88.0 ^{NS}	89.1	86.9*	86.5**	NA	NA	89.7	89.2
Eligible for Advising Physical Activity	86.6 ^{NS}	84.7*	91.3***	91.4	90.5**	89.6 ^{NS}	NA	NA	91.9	91.5
Osteoporosis Testing in Older Women										
Eligible for Osteoporosis Testing in Older Women	87.0	84.9	92.1*	92.3 ^{NS}	92.0**	90.9	NA	NA	94.8	94.2

Unadjusted proportions with significance level based on adjustment for plan type, age, race, gender, marital status, education and income.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Appendix

Table 12B. 2009 and 2010 Adjusted HEDIS Measure Results by Plan Type

Characteristics	HOS (%)						HOS-M (%)		HOS (%)	
	Institutional SNP		Chronic Condition SNP		Dual Eligible SNP		PACE		Other MA	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Fall Risk Management										
Discussing Fall Risk Rate	37.1	45.0	34.3	37.1	41.8	44.1	NA	NA	27.9	28.9
Managing Fall Risk Rate	69.5	76.6	60.2	62.6	68.0	72.5	NA	NA	54.3	55.5
Management of Urinary Incontinence (UI) in Older Adults										
Discussing UI Rate	68.2	73.0	57.6 ^{NS}	57.7 ^{NS}	61.2	63.8	NA	NA	56.9	56.4
Receiving UI Treatment Rate	38.2*	36.6*	35.3 ^{NS}	33.0 ^{NS}	34.9 ^{NS}	36.8	NA	NA	36.3	35.8
Physical Activity in Older Adults										
Discussing Physical Activity Rate	49.1 ^{NS}	50.0 ^{***}	52.5	54.2 ^{NS}	48.0 ^{***}	50.8	NA	NA	52.7	53.1
Advising Physical Activity Rate	41.1 ^{NS}	42.5 ^{NS}	48.8	51.9	47.5	48.8	NA	NA	46.1	46.4
Osteoporosis Testing in Older Women										
Osteoporosis Testing in Older Women Rate	59.0	58.2	61.4	62.7	55.6	57.3	NA	NA	72.0	72.9

Unadjusted proportions with significance level based on adjustment for plan type, age, race, gender, marital status, education and income.

All differences by plan type compared to Other MA category are significant at p<0.0001 unless otherwise indicated.

NS = Not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Physical and Mental Health in At-Risk Subgroups (Question 2):

(Preliminary Analyses) Set I: Within-Plan Type Descriptive Comparisons
Individual-Level Assessment

Table 13. Prevalence of Adverse Health Indicators Among PROGRAM OF ALL INCLUSIVE CARE FOR ELDERLY (PACE) Members, by At-Risk Subgroup, 2010

Member Reported the Following	By Health Characteristic						By Other Characteristic							
	Has UI			Has Interfering Memory Loss			Race					Used Proxy Respondents		
	Yes (n=4,927)	No (n=4,114)	Diff.	Yes (n=4,758)	No (n=4,283)	Diff.	Non-Asian, Non-White (n=2,801)	Asian, Non-White (n=754)	White (n=5,290)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=5,206)	No (n=3,835)	Diff.
Mean VR-12 PCS and MCS Scores														
PCS Score, Mean	25.5	30.6	-5.1	26.2	29.6	-3.4	28.3	27.1	27.7	0.6	-0.6	26.4	29.7	-3.3
MCS Score, Mean	39.0	45.1	-6.1	37.7	46.4	-8.7	42.1	39.1	42.1	0.0	-3.0	40.1	44.1	-4.1
Sickest Quartile VR-12 PCS and MCS Scores														
Sickest Quartile PCS, %	30.3	19.0	11.3	28.4	21.6	6.8	24.7	28.5	25.0	-0.2	3.6	28.9	20.2	8.7
Sickest Quartile MCS, %	32.4	18.5	13.9	35.2	16.0	19.2	23.7	30.8	26.4	-2.7	4.4	30.9	19.5	11.4
Participation in Social Activities														
Health Interferes With Social Activities All or Most of Time, %	45.6	26.7	19.0	47.8	24.9	22.9	35.8	46.9	36.1	-0.3	10.8	42.7	29.4	13.3
State of Mind														
Felt Calm Some, Little or None of Time, %	53.8	41.3	12.5	55.2	40.2	15.0	48.4	46.8	48.2	0.2	-1.4	49.9	45.8	4.1
Had Energy Some, Little or None of Time, %	86.2	71.2	15.0	86.9	71.0	15.8	76.1	80.1	81.1	-5.0	-1.1	83.6	73.7	9.9
Downhearted All or Most of Time, %	25.3	18.3	7.0	27.7	15.9	11.8	21.0	22.1	22.7	-1.7	-0.7	23.9	19.8	4.1
Choice in How Spends Time														
Accomplish Less All or Most of Time Due to Physical Health, %	72.1	49.2	23.0	72.2	50.0	22.2	59.9	61.5	62.9	-3.0	-1.4	70.0	50.6	19.5

Appendix

Member Reported the Following	By Health Characteristic						By Other Characteristic								
	Has UI			Has Interfering Memory Loss			Race					Used Proxy Respondents			
	Yes (n=4,927)	No (n=4,114)	Diff.	Yes (n=4,758)	No (n=4,283)	Diff.	Non-Asian, Non-White (n=2,801)	Asian, Non-White (n=754)	White (n=5,290)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=5,206)	No (n=3,835)	Diff.	
Choice in How Spends Time															
Limited in Work/Other Activities All or Most of Time Due to Physical Health, %	74.9	50.9	24.0	74.5	52.2	22.3	62.1	64.8	65.3	-3.2	-0.4	72.8	52.1	20.8	
Accomplish Less All or Most of Time Due to Emotional Health, %	55.0	32.7	22.4	57.5	30.8	26.7	45.6	47.5	44.1	1.5	3.4	52.2	35.2	16.9	
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, %	51.9	30.6	21.3	54.3	28.5	25.8	41.7	50.6	41.3	0.4	9.3	49.7	32.0	17.7	
Activities of Daily Living Limitations															
Any Difficulty Bathing, %	81.3	55.8	25.5	79.9	58.4	21.4	68.6	72.0	69.9	-1.3	2.2	81.8	53.4	28.4	
Any Difficulty Dressing, %	71.7	41.6	30.1	70.2	44.5	25.7	59.7	58.8	56.9	2.8	1.8	71.3	40.0	31.2	
Any Difficulty Eating, %	35.5	14.0	21.5	35.5	15.0	20.6	25.0	27.5	25.7	-0.7	1.7	34.3	14.1	20.2	
Any Difficulty Getting In/Out of Chairs, %	75.8	48.2	27.7	71.5	54.1	17.4	64.8	58.6	63.1	1.7	-4.5	70.5	53.4	17.1	
Any Difficulty Walking, %	87.9	68.5	19.5	83.7	73.9	9.7	79.9	77.1	79.0	0.9	-1.9	83.0	73.7	9.4	
Any Difficulty Toileting, %	62.6	28.2	34.4	58.8	33.7	25.1	46.7	52.0	46.0	0.7	6.0	59.4	29.9	29.5	

Difference (Diff) is the numerical difference between the proportion among the at-risk subgroup and the proportion among their not-at-risk counterparts who reported an adverse outcome. For example, 45.6% of incontinent and 26.7% of non-incontinent members reported that health interfered with social activities all or most of the time; the numerical difference was 19.0 percentage points (45.6 minus 26.7). A positive difference indicates a less favorable result among the at-risk subgroup; a negative difference indicates a less favorable result among the non-at-risk group.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Appendix

Table 14. Prevalence of Adverse Health Indicators Among SPECIAL NEEDS PLAN (SNP) Members, by At-Risk Subgroup, 2010

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=22,716)	No (n=36,818)	Diff.	Yes (n=23,248)	No (n=36,286)	Diff.	Yes (n=21,645)	No (n=37,889)	Diff.	Non-Asian, Non-White (n=29,123)	Asian, Non-White (n=2,925)	White (n=25,839)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=17,347)	No (n=42,187)	Diff.
Mean VR-12 PCS and MCS Scores																	
PCS Score, Mean	29.9	34.3	-4.4	29.1	35.0	-5.9	30.7	33.8	-3.1	32.8	36.4	32.0	0.8	4.4	31.1	33.3	-2.1
MCS Score, Mean	33.2	50.0	-16.7	41.1	45.2	-4.1	42.5	44.2	-1.7	42.7	45.8	44.3	-1.6	1.5	42.3	44.1	-1.8
Sickest Quartile VR-12 PCS and MCS Scores																	
Sickest Quartile PCS, %	30.3	21.8	8.6	34.4	19.0	15.5	29.5	22.5	7.0	22.8	14.5	28.8	-6.1	-14.4	30.6	22.7	7.9
Sickest Quartile MCS, %	53.2	7.7	45.5	31.4	21.0	10.4	27.8	23.5	4.3	26.1	16.2	25.1	1.0	-8.9	29.3	23.3	6.1
Participation in Social Activities																	
Health Interferes With Social Activities All or Most of Time, %	53.4	16.9	36.5	39.2	25.5	13.7	34.0	29.1	4.9	31.8	18.9	31.2	0.6	-12.2	36.7	28.5	8.2
State of Mind																	
Felt Calm Some, Little or None of Time, %	77.8	32.7	45.1	56.3	45.8	10.5	54.0	47.6	6.4	52.6	41.1	47.9	4.8	-6.8	51.5	49.3	2.2
Had Energy Some, Little or None of Time, %	88.0	59.3	28.7	80.4	63.8	16.6	76.8	66.6	10.2	70.3	58.6	71.8	-1.5	-13.3	74.3	68.7	5.6
Down-Hearted All or Most of Time, %	49.3	10.1	39.2	28.6	22.8	5.8	27.4	23.7	3.6	27.6	17.9	23.0	4.7	-5.1	25.8	24.8	1.1

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=22,716)	No (n=36,818)	Diff.	Yes (n=23,248)	No (n=36,286)	Diff.	Yes (n=21,645)	No (n=37,889)	Diff.	Non-Asian, Non-White (n=29,123)	Asian, Non-White (n=2,925)	White (n=25,839)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=17,347)	No (n=42,187)	Diff.
Choice in How Spends Time																	
Accomplish Less All or Most of Time Due to Physical Health, %	57.5	31.6	25.8	53.5	33.8	19.7	46.2	38.8	7.4	40.0	26.6	45.1	-5.2	-18.5	49.9	38.1	11.8
Limited in Work/Other Activities All or Most of Time Due to Physical Health, %	59.8	33.7	26.2	56.3	35.5	20.8	48.8	40.7	8.1	42.0	28.3	47.5	-5.5	-19.2	53.2	39.7	13.5
Accomplish Less All or Most of Time Due to Emotional Health, %	53.1	12.2	40.9	35.8	22.8	13.0	30.9	26.1	4.9	28.9	19.5	27.7	1.2	-8.2	33.3	25.6	7.7
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, %	45.4	13.1	32.3	32.9	20.6	12.3	27.8	24.0	3.9	26.2	20.7	25.1	1.1	-4.5	32.0	22.6	9.4

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=22,716)	No (n=36,818)	Diff.	Yes (n=23,248)	No (n=36,286)	Diff.	Yes (n=21,645)	No (n=37,889)	Diff.	Non-Asian, Non-White (n=29,123)	Asian, Non-White (n=2,925)	White (n=25,839)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=17,347)	No (n=42,187)	Diff.
Activities of Daily Living Limitations																	
Any Difficulty Bathing, %	50.4	28.8	21.6	51.6	27.7	23.9	40.8	34.9	5.8	35.9	29.2	39.3	-3.3	-10.0	51.3	31.2	20.1
Any Difficulty Dressing, %	44.5	22.7	21.8	43.9	22.7	21.2	33.6	29.5	4.0	31.5	24.5	31.1	0.5	-6.5	46.3	24.7	21.7
Any Difficulty Eating, %	24.1	9.7	14.5	21.9	10.9	11.0	12.7	16.6	-3.9	14.7	15.4	15.7	-1.0	-0.3	25.4	10.9	14.5
Any Difficulty Getting In/ Out of Chairs, %	57.1	33.2	23.9	57.4	32.6	24.8	49.3	38.3	11.1	42.6	30.8	43.3	-0.6	-12.5	51.9	38.4	13.5
Any Difficulty Walking, %	70.2	47.2	23.1	70.6	46.6	24.0	64.2	51.3	12.9	55.8	42.6	57.7	-1.9	-15.1	63.4	52.9	10.6
Any Difficulty Toileting, %	34.4	17.4	16.9	36.1	16.1	20.1	25.2	23.2	2.1	23.6	22.3	24.4	-0.8	-2.1	38.4	17.9	20.5

Difference (Diff) is the numerical difference between the proportion among the at-risk subgroup and the proportion among their not-at-risk counterparts who report an adverse outcome.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Appendix

Table 15. Prevalence of Adverse Health Indicators Among OTHER (NON-SNP) MEDICARE ADVANTAGE Members, by At-Risk Subgroup, 2010

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=44,698)	No (n=216,040)	Diff.	Yes (n=95,222)	No (n=165,516)	Diff.	Yes (n=75,639)	No (n=185,099)	Diff.	Non-Asian, Non-White (n=54,043)	Asian, Non-White (n=6,263)	White (n=194,781)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=29,495)	No (n=231,243)	Diff.
Mean VR-12 PCS and MCS Scores																	
PCS Score, Mean	30.9	40.4	-9.4	35.4	40.7	-5.3	34.9	40.4	-5.5	36.7	41.7	39.2	-2.5	2.5	32.3	39.6	-7.3
MCS Score, Mean	34.7	54.3	-19.7	48.7	52.2	-3.5	49.4	51.6	-2.2	47.6	50.8	51.9	-4.3	-1.1	45.3	51.7	-6.4
Sickest Quartile VR-12 PCS and MCS Scores																	
Sickest Quartile PCS, %	49.2	20.0	29.2	33.9	19.9	14.1	35.2	20.9	14.3	29.3	13.9	24.2	5.1	-10.3	44.5	22.5	22.0
Sickest Quartile MCS, %	80.6	13.55	67	32.1	21.0	11.2	30.6	22.8	7.8	36.5	25.0	21.8	14.7	3.2	43.5	22.7	20.8
Participation in Social Activities																	
Health Interferes With Social Activities All or Most of Time, %	47.5	7.3	40.2	19.3	11.18	8.2	18.6	12.3	6.2	20.7	9.4	12.5	8.2	-3.2	30.6	12.1	18.5
State of Mind																	
Felt Calm Some, Little or None of Time, %	76.4	17.6	58.8	34.1	24.0	10.1	33.9	25.1	8.8	38.1	23.1	24.9	13.2	-1.8	45.3	25.4	19.9
Had Energy Some, Little or None of Time, %	86.6	39.8	46.8	59.3	41.2	18.1	59.8	42.9	17.0	54.9	37.4	46.2	8.7	-8.8	69.4	45.0	24.3

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=44,698)	No (n=216,040)	Diff.	Yes (n=95,222)	No (n=165,516)	Diff.	Yes (n=75,639)	No (n=185,099)	Diff.	Non-Asian, Non-White (n=54,043)	Asian, Non-White (n=6,263)	White (n=194,781)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=29,495)	No (n=231,243)	Diff.
State of Mind																	
Down-Hearted All or Most of Time, %	46.1	6.1	40.0	15.4	11.5	3.8	15.7	11.8	4.0	19.1	11.4	11.3	7.9	0.1	20.6	12.0	8.7
Accomplish Less All or Most of Time Due to Physical Health, %	54.6	16.7	37.9	31.2	18.6	12.6	31.0	20.0	11.0	28.6	14.8	22.0	6.5	-7.2	45.2	20.4	24.7
Limited in Work/Other Activities All or Most of Time Due to Physical Health, %	56.4	17.5	38.9	32.5	19.3	13.2	32.6	20.7	11.9	29.4	14.9	23.0	6.3	-8.1	47.5	21.1	26.3
Accomplish Less All or Most of Time Due to Emotional Health, %	45.9	5.0	40.9	16.6	9.4	7.3	15.9	10.4	5.5	18.0	8.6	10.5	7.5	-1.9	25.8	10.3	15.6
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, %	39.5	5.4	34.1	15.5	8.7	6.8	14.5	9.8	4.7	16.9	9.8	9.6	7.3	0.1	25.1	9.4	15.7

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Has Depressed Mood			Has UI			Is Obese (BMI≥30)			Race					Used Proxy		
	Yes (n=44,698)	No (n=216,040)	Diff.	Yes (n=95,222)	No (n=165,516)	Diff.	Yes (n=75,639)	No (n=185,099)	Diff.	Non-Asian, Non-White (n=54,043)	Asian, Non-White (n=6,263)	White (n=194,781)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (n=29,495)	No (n=231,243)	Diff.
Activity of Daily Living Limitations																	
Any Difficulty Bathing, %	40.9	11.1	29.8	23.7	11.8	11.9	21.8	13.9	8.0	22.2	10.9	14.6	7.6	-3.7	38.4	13.3	25.1
Any Difficulty Dressing, %	35.6	8.7	26.9	19.6	9.7	9.9	18.1	11.4	6.7	19.3	9.4	11.8	7.5	-2.4	34.0	10.7	23.3
Any Difficulty Eating, %	17.2	3.1	14.1	8.2	4.0	4.2	5.8	5.5	0.3	8.3	5.4	4.8	3.6	0.7	16.1	4.2	11.9
Any Difficulty Getting In/ Out of Chairs, %	51.2	18.2	33.0	34.6	17.7	17.0	34.6	19.5	15.1	29.7	14.4	22.6	7.1	-8.1	42.8	21.4	21.3
Any Difficulty Walking, %	64.4	27.1	37.2	45.4	26.6	18.8	46.9	28.0	18.9	39.7	23.2	32.1	7.6	-9.0	54.2	30.8	23.4
Any Difficulty Toileting, %	26.5	6.3	20.2	15.5	6.4	9.2	13.1	8.3	4.8	14.2	8.3	8.5	5.6	-0.3	25.5	7.7	17.9

Difference (Diff) is the numerical difference between the proportion among the at-risk subgroup and the proportion among their not-at-risk counterparts who report an adverse outcome.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Set II: Within-Plan Type Descriptive Comparisons Plan-Level Assessment

Table 16. Plan Prevalence of Adverse Health Indicators in PROGRAM OF ALL INCLUSIVE CARE FOR ELDERLY (PACE), by At-Risk Subgroups, 2010

Member Reported the Following	By Health Characteristic						By Other Characteristic								
	Plan Members With UI			Plan Members With Interfering Memory Loss			Race						Plan Members Who Used Proxy Respondents		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.	
Mean VR-12 PCS and MCS Scores															
PCS Score, Mean	25.5 (1.8)	30.3 (2.4)	-2.0	26.2 (1.8)	29.3 (2.9)	-1.1	27.4 (4.3)	30.7 (7.6)	27.3 (2.6)	0.04	1.3	26.3 (1.8)	29.6 (2.7)	-1.2	
MCS Score, Mean	39.6 (4.1)	45.2 (3.5)	-1.6	37.9 (3.4)	46.5 (2.7)	-3.2	43.1 (4.5)	47.7 (10.7)	40.9 (4.9)	0.5	1.4	40.5 (3.7)	44.2 (3.4)	-1.1	
Plan Rate: Percentage of Members Reporting the Following															
Sickest Quartile VR-12 PCS and MCS Scores															
Sickest Quartile PCS, %	30.3 (7.0)	20.0 (7.5)	1.4	28.8 (9.3)	22.4 (9.2)	3.2	28.3 (20.5)	22.9 (32.5)	25.3 (9.8)	0.3	-0.2	29.4 (8.6)	20.3 (9.4)	1.0	
Sickest Quartile MCS, %	31.7 (12.4)	18.9 (8.7)	1.5	35.8 (12.3)	16.1 (6.1)	0.7	21.6 (11.7)	12.7 (19.7)	30.4 (15.4)	-0.6	-1.2	30.7 (11.4)	20.2 (9.2)	1.1	
Participation in Social Activities															
Health Interferes With Social Activities All or Most of Time, %	46.3 (13.8)	27.3 (10.6)	1.8	48.9 (11.9)	25.6 (10.0)	2.3	33.2 (14.5) ^a	24.1 (32.5)	42.0 (16.7)	-0.5	-1.1	42.7 (12.6)	31.1 (13.0)	0.9	
State of Mind															
Felt Calm Some, Little or None of Time, %	52.8 (10.1)	41.0 (9.5)	1.2	54.4 (8.6)	39.9 (8.9)	1.6	43.6 (16.8)	43.6 (37.0)	49.6 (11.1)	-0.5	-0.5	48.4 (9.1)	45.9 (10.2)	0.2	
Had Energy Some, Little or None of Time, %	86.6 (6.1)	71.9 (9.1)	1.6	87.3 (6.1)	72.1 (10.7)	1.4	76.4 (11.8)	63.1 (36.2)	82.7 (8.5)	-0.7	-2.3	83.8 (7.0)	73.8 (12.0)	0.8	
Downhearted All or Most of Time, %	23.8 (9.5)	19.3 (10.1)	0.5	27.5 (10.1)	16.0 (8.2)	1.4	17.3 (12.0)	11.0 (16.8) ^b	24.1 (9.8)	-0.7	-1.3	23.3 (10.5)	20.2 (11.9)	0.3	

Appendix

Member Reported the Following	By Health Characteristic						By Other Characteristic								
	Plan Members With UI			Plan Members With Interfering Memory Loss			Race						Plan Members Who Used Proxy Respondents		
	Yes	No	Diff.	Yes	No	Diff.	Non-Asian, Non-White	Asian, Non-White	White	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes	No	Diff.	
	(SD)	(SD)		(SD)	(SD)		(SD)	(SD)	(SD)			(SD)	(SD)		
Plan Rate: Percentage of Members Reporting the Following															
Choice in How Spends Time															
Accomplish Less All or Most of Time Due to Physical Health, %	71.9 (12.0)	50.5 (10.0)	2.1	72.0 (10.9)	52.6 (12.6)	1.5	64.2 (17.8)	44.7 (38.2)	65.3 (12.9)	-0.1	-1.6	70.3 (10.3)	51.9 (13.6)	1.4	
Limited in Work/Other Activities All or Most of Time Due to Physical Health, %	73.9 (11.5)	52.7 (10.3)	2.1	73.5 (10.2)	54.2 (13.5)	1.4	65.6 (17.7)	50.6 (39.5)	67.6 (12.8)	-0.2	-1.3	73.0 (10.0)	52.5 (13.5)	1.5	
Accomplish Less All or Most of Time Due to Emotional Health, %	53.4 (13.7)	33.4 (12.0)	1.7	57.4 (10.8)	31.7 (9.4)	2.7	46.0 (20.3) ^a	23.4 (28.1)	47.6 (14.5)	-0.1	-1.7	51.9 (12.0)	36.3 (11.3)	1.4	
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, %	49.4 (12.5)	31.1 (12.2)	1.5	54.1 (11.6)	28.1 (9.8)	2.7	42.7 (19.9) ^a	26.0 (28.1)	44.3 (15.1)	-0.1	-1.2	48.8 (12.1)	32.0 (10.7)	1.6	
Activities of Daily Living Limitations															
Any Difficulty Bathing, %	80.1 (11.6)	57.7 (13.7)	1.6	78.7 (11.2)	61.4 (14.3)	1.2	70.8 (19.5)	65.4 (35.1)	70.8 (13.4)	0.0	-0.4	81.8 (8.9)	54.7 (14.7)	1.8	
Any Difficulty Dressing, %	69.9 (15.0)	44.1 (12.7)	2.0	68.7 (13.4)	47.4 (13.2)	1.6	61.3 (20.2)	46.7 (37.5)	59.3 (15.6)	0.1	-0.8	70.3 (12.0)	42.7 (14.7)	1.9	
Any Difficulty Eating, %	34.1 (12.5)	14.1 (6.3)	3.2	34.4 (11.1)	15.6 (6.9)	2.7	25.3 (14.1)	22.1 (26.3)	28.5 (14.2)	-0.2	-0.5	32.9 (10.4)	15.0 (7.7)	2.3	
Any Difficulty Getting In/Out of Chairs, %	74.5 (11.6)	51.3 (10.8)	2.2	72.0 (9.4)	56.8 (12.1)	1.3	67.8 (15.2)	58.0 (35.6)	65.5 (13.8)	0.2	-0.5	70.6 (10.3)	56.1 (12.6)	1.2	
Any Difficulty Walking, %	87.8 (6.3)	70.5 (10.2)	1.7	83.7 (7.1)	76.4 (10.4)	0.7	80.1 (16.5)	75.9 (24.1)	80.8 (9.6)	-0.1	-0.5	83.1 (7.9)	75.5 (10.2)	0.7	
Any Difficulty Toileting, %	59.6 (15.5)	29.7 (12.1)	2.5	56.8 (13.7)	35.6 (12.7)	1.7	47.4 (19.7)	48.5 (40.2)	47.8 (16.0)	-0.03	0.04	57.9 (13.3)	30.6 (14.3)	1.9	

^an=55 plans; ^bn=23 plans. SD=Standard Deviation.

Difference (Diff) is the numerical difference between SDs among the at-risk subgroup and among their not-at-risk counterparts who report an adverse outcome.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Appendix

Table 17. Plan Prevalence of Adverse Health Indicators Among SPECIAL NEEDS PLAN (SNP), by At-Risk Subgroups, 2010

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members with Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Health Scores																	
Mean VR-12 PCS and MCS Scores																	
PCS Score, Mean	29.8 (2.9)	34.3 (3.2)	-1.4	29.5 (2.9)	34.7 (3.0)	-1.7	30.4 (3.7)	33.9 (3.1)	-1.2	32.7 (3.4)	36.6 (6.7)	32.3 (4.2)	0.1	1.0	31.7 (4.1)	33.1 (2.8)	-0.5
MCS Score, Mean	33.6 (2.7)	50.0 (2.5)	-6.7	41.2 (3.6)	45.4 (3.8)	-1.1	42.8 (4.2)	44.4 (3.9)	-0.4	43.3 (4.1)	45.9 (7.8)	43.8 (5.0)	-0.1	0.4	42.8 (4.1)	44.2 (3.9)	-0.4
Plan Rate: Percentage of Members Reporting the Following																	
Sickest Quartile VR-12 PCS and MCS Scores																	
Sickest Quartile PCS, Mean	31.9 (12.7)	21.8 (10.9)	0.9	33.4 (11.2)	20.1 (10.2)	1.3	30.7 (14.5)	22.5 (10.5)	0.8	24.0 (11.3)	14.1 (25.2)	28.1 (14.2)	-0.3	-1.0	29.1 (13.4)	23.6 (11.4)	0.5
Sickest Quartile MCS, Mean	51.6 (11.9)	7.3 (4.2)	10.5	29.9 (10.5)	20.4 (10.1)	0.9	27.6 (12.7)	22.0 (10.6)	0.5	25.1 (12.2)	17.0 (25.8)	25.5 (14.0)	-0.02	-0.6	27.7 (13.7)	22.6 (10.0)	0.5
Participation in Social Activities																	
Health Interferes With Social Activities All or Most of Time, Mean	52.3 (12.2)	17.0 (8.1)	4.3	37.8 (12.5)	25.7 (10.5)	1.2	33.9 (13.9)	28.4 (11.5)	0.5	31.0 (12.4)	17.8 (24.6)	31.7 (14.1)	-0.1	-1.0	33.5 (14.2)	28.5 (11.1)	0.4
State of Mind																	
Felt Calm Some, Little or None of Time, Mean	78.0 (9.7)	34.1 (11.3)	3.9	57.3 (12.3)	46.4 (12.2)	0.9	54.8 (13.4)	48.1 (13.2)	0.5	51.5 (14.1)	44.7 (32.1)	51.2 (16.8)	0.02	-0.4	51.4 (15.2)	50.4 (12.9)	0.1

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members with Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
State of Mind																	
Had Energy Some, Little or None of Time, Mean	88.0 (6.9)	59.9 (10.4)	2.7	79.7 (10.1)	64.4 (9.8)	1.6	76.5 (11.3)	66.9 (10.9)	0.9	69.8 (11.5)	58.4 (31.4)	72.3 (13.1)	-0.2	-1.1	73.5 (13.6)	69.1 (9.8)	0.4
Down-Hearted All or Most of Time, Mean	47.0 (13.8)	10.0 (7.8)	4.7	27.7 (12.2)	21.6 (9.8)	0.6	26.1 (12.0)	22.6 (11.3)	0.3	25.3 (12.0)	17.8 (24.2)	24.1 (13.4)	0.1	-0.5	24.2 (13.6)	23.9 (11.4)	0.03
Choice of How Spends Time																	
Accomplish Less All or Most of Time Due to Physical Health, Mean	57.7 (13.3)	31.6 (12.4)	2.1	50.7 (14.0)	35.1 (12.2)	1.3	46.9 (13.7)	38.4 (14.5) ^d	0.6	40.0 (14.0)	27.4 (32.3)	43.9 (16.0) ^f	-0.3	-1.0	47.6 (17.0)	38.2 (12.0) ^d	0.8
Limited in Work/Other Activities All or Most of Time Due to Physical Health, Mean	60.5 (13.6)	33.3 (12.2)	2.2	54.1 (14.1)	36.3 (12.0)	1.5	49.4 (14.9)	40.1 (14.5)	0.6	42.2 (14.3)	28.0 (31.7)	46.2 (16.6)	-0.2	-1.1	50.6 (17.1)	40.0 (12.0)	0.9
Accomplish Less All or Most of Time Due to Emotional Health, Mean	52.0 (13.6)	11.6 (6.5)	6.2	34.2 (13.5)	22.2 (10.3)	1.2	30.1 (13.2)	25.6 (12.9)	0.3	27.9 (12.3)	18.7 (26.5)	27.7 (14.0)	0.01	-0.6	30.9 (14.2)	25.1 (11.2)	0.5

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members with Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
Choice of How Spends Time																	
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, Mean	44.0 (13.3)	12.9 (6.7)	4.7	30.9 (11.6)	20.6 (10.1)	1.0	27.0 (12.0)	23.5 (11.8)	0.3	25.1 (10.6)	20.7 (27.6)	24.5 (12.4) ^f	0.04	-0.3	29.9 (14.1)	22.2 (9.7) ^d	0.8
Activities of Daily Living Limitations																	
Any Difficulty Bathing, Mean	50.2 (15.6)	27.6 (16.0)	1.4	48.3 (17.0)	27.7 (13.9)	1.5	40.7 (16.3)	33.0 (16.4)	0.5	36.8 (16.8)	27.0 (31.3)	37.2 (18.6)	-0.02	-0.5	45.1 (20.2)	31.6 (13.4)	1.0
Any Difficulty Dressing, Mean	44.5 (15.7)	21.9 (14.7)	1.5	41.4 (16.8)	22.8 (12.5)	1.5	33.5 (15.8)	28.6 (15.7)	0.3	31.6 (15.3)	25.4 (30.2)	29.4 (18.3)	0.1	-0.2	41.4 (19.1)	25.3 (12.6)	1.3
Any Difficulty Eating, Mean	23.9 (12.7)	9.0 (7.6)	2.0	19.5 (10.7)	11.1 (7.6)	1.1	12.7 (8.9)	15.6 (9.8) ^d	-0.3	15.1 (10.7)	14.9 (24.0)	14.3 (12.5)	0.1	0.1	22.5 (14.2) ^g	10.6 (5.1)	2.3
Any Difficulty Getting In/ Out of Chairs, Mean	57.2 (13.7)	32.8 (12.9)	1.9	55.7 (13.3)	32.9 (12.4)	1.8	49.6 (13.9)	37.7 (15.2)	0.8	42.3 (14.1)	31.5 (32.0)	42.3 (15.4)	-0.002	-0.7	48.3 (17.2)	39.0 (12.4)	0.8
Any Difficulty Walking, Mean	70.6 (11.6)	46.8 (12.9) ^a	1.8	69.1 (12.5)	47.0 (12.0) ^a	1.9	64.7 (13.5) ^b	50.7 (14.3) ^d	1.0	55.4 (12.9) ^e	43.9 (34.1)	57.5 (15.9)	-0.1	-0.9	60.9 (15.7)	53.5 (12.3) ^d	0.6

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members with Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
Activities of Daily Living Limitations																	
Any Difficulty Toileting, Mean	33.8 (16.5)	16.6 (12.7)	1.4	33.2 (17.2)	16.1 (10.1)	1.7	25.2 (13.6)	21.4 (14.3)	0.3	23.4 (13.7)	19.6 (28.0)	21.2 (15.3)	0.1	-0.1	32.2 (18.6)	18.4 (10.7)	1.3
Health Maintenance and Interfering Health Issues for Obese Members																	
Did Not Discuss Physical Activity With Provider, Mean	NA	NA	NA	NA	NA	NA	40.0 (14.0)	50.4 (12.1)	-0.9	NA	NA	NA	NA	NA	NA	NA	NA
Not Advised on Physical Activity By Provider, Mean	NA	NA	NA	NA	NA	NA	41.3 (13.3)	54.9 (11.9)	-1.1	NA	NA	NA	NA	NA	NA	NA	NA
UI Is Big Problem, Mean	NA	NA	NA	NA	NA	NA	50.0 (19.2) ^c	38.6 (20.1) ^e	0.6	NA	NA	NA	NA	NA	NA	NA	NA

^an=221 plans; ^bn=220 plans; ^cn=215 plans; ^dn = 223; ^en=216; ^fn=218; ^gn=219. SD=Standard Deviation.

Difference (Diff) is the numerical difference between SDs among the at-risk subgroup and among their not-at-risk counterparts who report an adverse outcome.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Appendix

Table 18. Plan Prevalence of Adverse Health Indicators Among OTHER (Non-SNP) MEDICARE ADVANTAGE, by At-Risk Subgroups, 2010

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members With Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Health Scores																	
Mean VR-12 PCS and MCS Scores																	
PCS Score, Mean	31.2 (2.0)	40.1 (2.0)	-4.4	35.1 (2.5)	40.4 (2.3)	-2.3	34.7 (2.3)	40.0 (2.3)	-2.3	37.0 (2.3)	42.0 (5.9)	38.8 (2.6)	-0.7	1.2	32.4 (2.5)	39.3 (2.3)	-3.0
MCS Score, Mean	34.9 (1.6)	53.9 (1.7)	-11.5	47.9 (3.4)	51.8 (2.6)	-1.5	49.0 (3.2)	51.1 (2.6)	-0.8	48.5 (2.7)	51.4 (6.0)	51.1 (2.6)	-1.0	0.1	45.5 (2.5)	51.1 (2.7)	-2.0
Plan Rate: Percentage of Members Reporting the Following																	
Sickest Quartile VR-12 PCS and MCS Scores																	
Sickest Quartile PCS, Mean	48.0 (8.5)	20.6 (5.1)	5.4	34.6 (8.0)	20.6 (5.8)	2.4	35.5 (8.0)	21.5 (5.6)	2.5	28.7 (7.4)	14.5 (20.1)	25.4 (7.1)	0.5	-1.5	44.3 (9.3)	23.2 (6.3)	3.4
Sickest Quartile MCS, Mean	79.8 (5.4)	14.8 (5.6)	11.6	34.8 (11.7)	22.3 (8.7)	1.4	31.8 (10.7)	24.5 (8.9)	0.8	33.2 (9.8)	22.6 (23.2)	24.1 (8.6)	1.1	-0.2	42.6 (8.7)	24.7 (9.7)	1.9
Participation in Social Activities																	
Health Interferes With Social Activities All or Most of Time, Mean	46.3 (7.9)	7.8 (3.0)	12.9	20.8 (8.2)	11.9 (5.2)	1.7	19.4 (8.0)	13.2 (5.3)	1.2	18.9 (6.7)	8.9 (16.2)	14.1 (6.1)	0.8	-0.9	30.0 (7.9)	13.1 (5.8)	2.9
State of Mind																	
Felt Calm Some, Little or None of Time, Mean	76.1 (5.8)	19.0 (5.7)	9.9	36.1 (10.1)	25.5 (8.9)	1.2	34.9 (9.7)	26.9 (8.3)	1.0	35.7 (9.1)	23.0 (24.9)	27.5 (9.4)	0.9	-0.5	44.9 (8.8)	27.1 (8.4)	2.1

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members With Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
State of Mind																	
Had Energy Some, Little or None of Time, Mean	86.3 (4.3)	41.0 (7.2)	6.3	60.8 (8.9)	42.5 (8.5)	2.2	60.4 (8.2)	44.4 (8.4)	1.9	53.4 (9.2)	37.0 (28.5) ^b	48.0 (9.3)	0.6	-1.2	69.2 (7.9)	46.6 (8.5)	2.7
Down-Hearted All or Most of Time, Mean	45.5 (7.8)	6.6 (2.6)	14.7	16.8 (7.7)	12.3 (5.3)	0.9	16.5 (7.4)	12.8 (5.3)	0.7	17.2 (6.7)	12.4 (18.2) ^b	12.8 (5.5)	0.8	-0.1	20.3 (7.7)	13.0 (5.3)	1.4
Choice of How Spends Time																	
Accomplish Less All or Most of Time Due to Physical Health, Mean	53.7 (8.4)	17.5 (4.7)	7.7	32.3 (8.2)	19.5 (6.0)	2.1	31.5 (8.1)	20.9 (5.9)	1.8	27.9 (7.7)	13.3 (17.8)	23.4 (7.4)	0.6	-1.4	45.0 (9.7)	21.3 (6.3)	3.7
Limited in Work/Other Activities All or Most of Time Due to Physical Health, Mean	55.3 (8.3)	18.0 (4.5)	8.3	33.7 (8.5)	20.0 (5.9)	2.3	33.1 (8.2)	21.4 (6.0)	2.0	28.3 (8.1)	13.5 (18.4) ^c	24.5 (7.6)	0.5	-1.4	47.2 (9.8)	22.1 (6.5)	3.9
Accomplish Less All or Most of Time Due to Emotional Health, Mean	44.8 (7.5)	5.4 (2.2)	17.6	18.1 (7.7)	10.0 (4.7)	1.7	16.6 (7.2)	11.2 (4.9)	1.1	16.3 (6.4)	7.0 (13.5)	11.8 (5.5)	0.8	-0.9	25.4 (7.3)	11.2 (5.2)	2.7

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members With Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
Choice of How Spends Time																	
Limited in Work/Other Activities All or Most of Time Due to Emotional Health, Mean	38.6 (7.0)	5.8 (2.5)	13.1	16.7 (7.0)	9.2 (4.1)	1.8	15.1 (6.3)	10.5 (4.4)	1.1	15.5 (5.9)	8.2 (15.4) ^c	10.7 (5.0)	1.0	-0.5	24.6 (7.0)	10.2 (4.7)	3.1
Activities of Daily Living Limitations																	
Any Difficulty Bathing, Mean	40.3 (6.9)	11.6 (3.7)	7.9	25.1 (7.9)	12.4 (4.5)	2.8	22.5 (7.2)	14.6 (4.8)	1.7	21.3 (6.6)	9.9 (15.9)	16.0 (5.6)	1.0	-1.1	38.3 (9.2)	14.3 (5.2)	4.6
Any Difficulty Dressing, Mean	35.0 (6.8)	9.2 (3.1)	8.4	20.9 (7.5)	10.2 (4.1)	2.6	18.8 (6.5)	12.0 (4.6)	1.5	17.8 (6.1)	8.9 (16.0)	12.9 (5.0)	1.0	-0.8	33.7 (8.4)	11.5 (4.6)	4.9
Any Difficulty Eating, Mean	17.0 (5.0)	3.4 (1.6)	8.8	8.9 (4.4)	4.3 (2.3)	2.0	6.1 (3.2)	5.8 (2.8)	0.1	7.6 (3.6)	5.0 (12.1)	5.4 (3.7)	0.6	-0.1	15.9 (5.7)	4.6 (2.4)	4.7
Any Difficulty Getting In/ Out of Chairs, Mean	50.4 (7.6)	19.0 (4.6)	6.9	35.9 (8.4)	18.5 (6.7)	2.6	35.1 (7.7)	20.4 (6.2)	2.4	27.8 (7.7)	14.0 (19.4)	24.0 (6.9)	0.6	-1.5	42.6 (9.3)	22.4 (6.0)	3.4
Any Difficulty Walking, Mean	63.9 (6.7)	27.9 (5.7)	6.4	46.9 (9.1)	27.7 (6.7)	2.9	47.6 (8.0)	29.1 (6.8)	2.7	38.1 (7.9)	22.6 (23.5)	33.9 (8.1)	0.5	-1.4	54.1 (8.2)	32.0 (7.0)	3.2

Appendix

Member Reported the Following	By Health Characteristic									By Other Characteristic							
	Plan Members With Depressed Mood			Plan Members With UI			Plan Members With Obesity (BMI≥30)			Plan Members' Race					Plan Members Who Used Proxy		
	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Yes (SD)	No (SD)	Diff.	Non-Asian, Non-White (SD)	Asian, Non-White (SD)	White (SD)	Diff. Non-Asian, Non-White vs. White	Diff. Asian, Non-White vs. White	Yes (SD)	No (SD)	Diff.
Plan Rate: Percentage of Members Reporting the Following																	
Activities of Daily Living Limitations																	
Any Difficulty Toileting, Mean	26.1 (6.3)	6.6 (2.4)	8.2	16.6 (6.5)	6.7 (3.1)	3.2	13.7 (5.3)	8.8 (3.6)	1.4	12.7 (5.0)	6.6 (11.8)	9.5 (4.6)	0.7	-0.6	25.3 (7.7)	8.3 (3.4)	5.0
Health Maintenance and Interfering Health Issues for Obese Members																	
Did Not Discuss Physical Activity With Provider, Mean	NA	NA	NA	NA	NA	NA	39.9 (6.9)	48.7 (5.8)	-1.5	NA	NA	NA	NA	NA	NA	NA	NA
Not Advised on Physical Activity by Provider, Mean	NA	NA	NA	NA	NA	NA	42.4 (6.3)	56.3 (5.3)	-2.6	NA	NA	NA	NA	NA	NA	NA	NA
UI Is Big Problem, Mean	NA	NA	NA	NA	NA	NA	43.1 (11.7)	28.3 (8.9) ^a	1.7	NA	NA	NA	NA	NA	NA	NA	NA

^an=409 plans; ^bn=374 plans; ^cn=373 plans. SD=Standard Deviation.

Difference (Diff) is the numerical difference between SDs among the at-risk subgroup and among their not-at-risk counterparts who report an adverse outcome.

VR-12 PCS and MCS indicate the Veterans-RAND 12-Item Short Form Survey physical and mental component summary score (0-100 scale, 0 representing worst health).

Note: Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

**(Preliminary Analyses) Set III: Within-Plan Type Regression Comparisons
Individual-Level Assessment**

Table 19. Logistic Regression Predicting Adverse Health Among PROGRAM OF ALL INCLUSIVE CARE (PACE) Members, by At-Risk Subgroup, 2010

Member Reported the Following	Adjusted Odds Ratio (95% Confidence Interval)				
	By Health Characteristic		By Other Characteristic		
	Has Urinary Incontinence (Ref = No Incontinence)	Has Interfering Memory Loss (Ref = No Memory Loss)	Race		Used Proxy Respondent (Ref = Did Not Use Proxy)
Non-Asian, Non-White (Ref = White)			Asian, Non-White (Ref = White)		
Sickest Quartile VR-12 PCS and MCS Scores					
Sickest Quartile PCS Score	1.82 (1.66-2.00)*	1.40 (1.25-1.57)*	1.00 (0.86-1.18)	1.14 (0.96-1.35)	1.58 (1.40-1.78)*
Sickest Quartile MCS Score	2.13 (1.93-2.36)*	2.82 (2.51-3.18)*	0.79 (0.69-0.90)*	0.90 (0.74-1.1)	1.82 (1.59-2.09)*
Participation in Social Activities					
Health Interferes Most or All of Time With Social Activity	2.32 (2.10-2.57)*	2.66 (2.41-2.93)*	0.89 (0.76-1.05)	1.04 (0.80-1.34)	1.71 (1.52-1.91)*
State of Mind					
Calm Some, Little or None of Time	1.72 (1.58-1.86)*	1.96 (1.79-2.14)*	0.94 (0.84-1.04)	0.93 (0.79-1.10)	1.26 (1.13-1.41)*
Energy Some, Little or None of Time	2.47 (2.18-2.79)*	2.67 (2.38-3.01)*	0.74 (0.65-0.83)*	0.88 (0.62-1.24)	1.79 (1.54-2.07)*
Downhearted All or Most of Time	1.56 (1.40-1.75)*	2.14 (1.91-2.41)*	0.84 (0.71-0.99)	0.84 (0.70-1.00)	1.36 (1.23-1.52)*
Choice in How Spends Time					
Accomplish Less All or Most of Time Due to Physical Health	2.56 (2.33-2.82)*	2.46 (2.26-2.67)*	0.91 (0.82-1.01)	0.83 (0.68-1.01)	2.12 (1.90-2.38)*
Limited in Work/Other Activities All or Most of Time Due to Physical Health	2.74 (2.47-3.04)*	2.52 (2.31-2.74)*	0.90 (0.81-0.99)	0.86 (0.69-1.08)	2.28 (2.01-2.59)*
Accomplish Less All or Most of Time Due to Emotional Health	2.45 (2.19-2.75)*	2.89 (2.62-3.19)*	1.00 (0.91-1.11)	0.88 (0.75-1.03)	1.87 (1.67-2.10)*
Limited in Work/Other Activities All or Most of Time Due to Emotional Health	2.38 (2.14-2.66)*	2.79 (2.51-3.11)*	0.97 (0.88-1.07)	1.15 (0.93-1.43)	1.92 (1.71-2.16)*
Activities of Daily Living Limitations					
Difficulty Bathing	3.18 (2.86-3.54)*	2.50 (2.23-2.80)*	0.99 (0.88-1.11)	0.83 (0.70-0.98)	3.44 (2.94-4.03)*
Difficulty Dressing	3.32 (3.02-3.66)*	2.61 (2.38-2.87)*	1.11 (1.00-1.24)	0.77 (0.65-0.92)	3.28 (2.83-3.80)*
Difficulty Eating	3.20 (2.76-3.72)*	2.81 (2.54-3.10)*	0.97 (0.84-1.11)	0.89 (0.72-1.10)	2.77 (2.46-3.11)*
Difficulty Getting In/Out of Chairs	3.24 (2.97-3.54)*	2.01 (1.82-2.22)*	1.08 (0.97-1.21)	0.69 (0.60-0.81)*	1.93 (1.75-2.14)*
Difficulty Walking	3.28 (2.95-3.66)*	1.76 (1.52-2.03)*	1.09 (0.96-1.24)	0.81 (0.64-1.03)	1.68 (1.52-1.86)*
Difficulty Toileting	4.02 (3.65-4.42)*	2.49 (2.26-2.75)*	1.05 (0.94-1.17)	0.95 (0.81-1.10)	3.04 (2.71-3.41)*

*P<0.003.

BMI indicates body mass index; VR-12 PCS and MCS scores indicate the Veterans-RAND 12-Item Survey physical component summary score and mental component summary score, (0-100 scale, 0 representing worst health, 100 representing best health); ADL indicates Activity of Daily Living.

All odds ratios are estimated with hierarchical multiple logistic regression to account for members clustered in plans. The models adjust for patient age and gender.

Note: Obese indicates a body mass index of ≥ 30 , based on member's reported height and weight. Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS ≤ 20.6 in PACE, ≤ 23.4 in SNP, ≤ 29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS ≤ 31.6 in PACE, ≤ 34.2 in SNP, ≤ 43.6 in Other MA).

Table 20. Logistic Regression Predicting Adverse Health Among SPECIAL NEEDS PLAN (SNP) Members, by At-Risk Subgroup, 2010

Health Indicator	Adjusted Odds Ratio (95% Confidence Interval)					
	By Health Characteristics			By Other Characteristic		
	Has Depressed Mood (Ref = No Depression)	Has UI (Ref = No Incontinence)	Is Obese (BMI ≥ 30) (Ref = Not Obese)	Race		Used Proxy Respondent (Ref = Did Not Use Proxy)
				Non-Asian, Non-White (Ref = White)	Asian, Non-White (Ref = White)	
Sickest Quartile VR-12 PCS and MCS Scores						
Sickest Quartile PCS	1.68 (1.60-1.77)*	2.00 (1.92-2.09)*	1.49 (1.43-1.55)*	0.78 (0.74-0.83)*	0.45 (0.40-0.51)*	1.43 (1.32-1.55)*
Sickest Quartile MCS	12.82 (12.15-13.52)*	1.93 (1.85-2.01)*	1.13 (1.08-1.18)*	0.95 (0.90-1.01)	0.64 (0.57-0.72)*	1.46 (1.34-1.60)*
Participation in Social Activities						
Health Interferes Most or All of Time With Social Activity	5.39 (5.11-5.69)*	1.97 (1.90-2.05)*	1.17 (1.13-1.22)*	0.95 (0.90-1.00)	0.55 (0.49-0.62)*	1.49 (1.37-1.63)*
State of Mind						
Calm Some, Little or None of Time	6.74 (6.42-7.07)*	1.67 (1.61-1.74)*	1.17 (1.12-1.21)*	1.08 (1.03-1.14)	0.81 (0.73-0.91)*	1.18 (1.09-1.26)*
Energy Some, Little or None of Time	5.15 (4.88-5.44)*	2.28 (2.19-2.38)*	1.62 (1.55-1.69)*	0.89 (0.84-0.95)*	0.59 (0.54-0.65)*	1.30 (1.18-1.44)*
Downhearted All or Most of Time	8.02 (7.53-8.54)*	1.55 (1.49-1.62)*	1.11 (1.06-1.16)*	1.06 (1.00-1.12)	0.80 (0.72-0.89)*	1.11 (1.03-1.19)
Choice in How Spends Time						
Accomplish Less All or Most of Time Due to Physical Health	3.08 (2.93-3.24)*	2.11 (2.03-2.20)*	1.36 (1.31-1.41)*	0.84 (0.79-0.88)*	0.48 (0.43-0.54)*	1.55 (1.41-1.69)*
Limited in Work/Other Activities All or Most of Time Due to Physical Health	3.07 (2.91-3.24)*	2.21 (2.12-2.30)*	1.40 (1.34-1.45)*	0.82 (0.78-0.87)*	0.47 (0.42-0.53)*	1.64 (1.49-1.80)*
Accomplish Less All or Most of Time Due to Emotional Health	7.87 (7.47-8.30)*	2.01 (1.93-2.09)*	1.19 (1.14-1.23)*	0.99 (0.93-1.04)	0.69 (0.60-0.78)*	1.48 (1.35-1.63)*
Limited in Work/Other Activities All or Most of Time Due to Emotional Health	5.60 (5.35-5.86)*	1.92 (1.83-2.01)*	1.18 (1.14-1.23)*	1.02 (0.96-1.07)	0.80 (0.69-0.92)*	1.61 (1.48-1.74)*
Activities of Daily Living Limitations						
Difficulty Bathing	2.87 (2.70-3.05)*	2.45 (2.34-2.57)*	1.38 (1.32-1.43)*	1.00 (0.94-1.06)	0.65 (0.58-0.72)*	2.02 (1.83-2.22)*
Difficulty Dressing	3.04 (2.85-3.24)*	2.49 (2.38-2.61)*	1.31 (1.26-1.36)*	1.09 (1.02-1.16)	0.72 (0.64-0.82)*	2.27 (2.05-2.51)*
Difficulty Eating	3.31 (3.08-3.57)*	2.17 (2.06-2.29)*	0.77 (0.73-0.82)*	1.02 (0.95-1.09)	0.99 (0.84-1.15)	2.49 (2.25-2.76)*
Difficulty Getting In/Out of Chairs	2.98 (2.83-3.14)*	2.55 (2.45-2.65)*	1.71 (1.64-1.78)*	0.96 (0.91-1.02)	0.60 (0.54-0.65)*	1.54 (1.41-1.68)*
Difficulty Walking	2.96 (2.80-3.12)*	2.49 (2.39-2.60)*	1.82 (1.75-1.89)*	0.96 (0.91-1.01)	0.56 (0.50-0.61)*	1.40 (1.29-1.51)*
Difficulty Toileting	2.85 (2.64-3.07)*	2.71 (2.59-2.85)*	1.25 (1.19-1.31)*	1.06 (0.99-1.13)	0.87 (0.78-0.98)	2.43 (2.19-2.70)*

Appendix

Health Indicator	Adjusted Odds Ratio (95% Confidence Interval)					
	By Health Characteristics			By Other Characteristic		
	Has Depressed Mood (Ref = No Depression)	Has UI (Ref = No Incontinence)	Is Obese (BMI ≥ 30) (Ref = Not Obese)	Race	Used Proxy Respondent (Ref = Did Not Use Proxy)	
			Non-Asian, Non-White (Ref = White)	Asian, Non-White (Ref = White)		
Health Maintenance and Interfering Health Issues in Obese Members						
Did Not Discuss Physical Activity With Provider	NA	NA	0.68 (0.66-0.71)*	NA	NA	NA
Not Advised On Physical Activity Level By Provider	NA	NA	0.60 (0.57-0.62)*	NA	NA	NA
Urinary Incontinence Is Big Problem	NA	NA	1.62 (1.51-1.73)*	NA	NA	NA

*P<0.003.

BMI indicates body mass index; VR-12 PCS and MCS scores indicate the Veterans-RAND 12-Item Survey physical component summary score and mental component summary score, (0-100 scale, 0 representing worst health, 100 representing best health); ADL indicates Activity of Daily Living.

All odds ratios are estimated with hierarchical multiple logistic regression to account for members clustered in plans. The models adjust for patient age and gender.

Note: Obese indicates a body mass index of ≥30, based on member's reported height and weight. Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Appendix

Table 21. Logistic Regression Predicting Adverse Health Among OTHER (Non-SNP) MEDICARE ADVANTAGE Members, by At-Risk Subgroup, 2010

Health Indicator	Adjusted Odds Ratio (95% Confidence Interval)					
	By Health Characteristics			By Other Characteristic		Used Proxy Respondent (Ref = Did Not Use Proxy)
	Has Depressed Mood (Ref = No Depression)	Has UI (Ref = No Incontinence)	Is Obese (BMI ≥ 30) (Ref = Not Obese)	Race		
			Non-Asian, Non-White (Ref = White)	Asian, Non-White (Ref = White)		
Sickest Quartile VR-12 PCS and MCS Scores						
Sickest Quartile PCS	3.57 (3.47-3.67)*	2.09 (2.06-2.13)*	1.94 (1.91-1.98)*	1.15 (1.12-1.19)*	0.54 (0.49-0.59)*	2.94 (2.83-3.06)*
Sickest Quartile MCS	22.92 (22.05-23.84)*	1.99 (1.95-2.03)*	1.30 (1.27-1.33)*	1.55 (1.50-1.60)*	1.04 (0.95-1.13)	2.82 (2.71-2.93)*
Participation in Social Activities						
Health Interferes Most or All of Time With Social Activity	10.13 (9.80-10.49)*	2.12 (2.06-2.17)*	1.40 (1.36-1.43)*	1.41 (1.35-1.46)*	0.64 (0.57-0.72)*	3.50 (3.33-3.67)*
State of Mind						
Calm Some, Little or None of Time	13.11 (12.60-13.65)*	1.77 (1.74-1.81)*	1.31 (1.29-1.34)*	1.47 (1.42-1.52)*	0.82 (0.75-0.90)*	2.70 (2.60-2.80)*
Energy Some, Little or None of Time	9.41 (9.08-9.75)*	2.11 (2.07-2.15)*	1.91 (1.88-1.94)*	1.23 (1.20-1.27)*	0.68 (0.63-0.73)*	2.84 (2.74-2.94)*
Downhearted All or Most of Time	11.77 (11.35-12.21)*	1.52 (1.49-1.56)*	1.18 (1.15-1.21)*	1.41 (1.35-1.47)*	0.97 (0.87-1.09)	2.00 (1.92-2.08)*
Choice in How Spends Time						
Accomplish Less All or Most of Time Due to Physical Health	5.59 (5.43-5.76)*	2.09 (2.05-2.14)*	1.67 (1.63-1.71)*	1.23 (1.19-1.27)*	0.62 (0.55-0.69)*	3.39 (3.25-3.54)*
Limited in Work/Other Activities All or Most of Time Due to Physical Health	5.66 (5.49-5.84)*	2.15 (2.11-2.20)*	1.72 (1.68-1.75)*	1.20 (1.16-1.24)*	0.58 (0.52-0.65)*	3.61 (3.46-3.77)*
Accomplish Less All or Most of Time Due to Emotional Health	14.50 (13.95-15.07)*	2.17 (2.11-2.23)*	1.40 (1.36-1.44)*	1.44 (1.39-1.50)*	0.74 (0.65-0.85)*	3.26 (3.10-3.42)*
Limited in Work/Other Activities All or Most of Time Due to Emotional Health	10.75 (10.32-11.20)*	2.08 (2.03-2.14)*	1.39 (1.36-1.43)*	1.56 (1.50-1.62)*	0.94 (0.84-1.06)	3.35 (3.19-3.51)*
Activities of Daily Living Limitations						
Difficulty Bathing	5.50 (5.34-5.67)*	2.36 (2.31-2.41)*	1.68 (1.64-1.72)*	1.45 (1.41-1.50)*	0.70 (0.63-0.79)*	4.11 (3.90-4.33)*
Difficulty Dressing	5.61 (5.44-5.79)*	2.47 (2.41-2.52)*	1.64 (1.60-1.67)*	1.51 (1.46-1.56)*	0.76 (0.67-0.85)*	4.26 (4.04-4.50)*
Difficulty Eating	6.36 (6.08-6.66)*	2.28 (2.20-2.36)*	0.99 (0.96-1.03)	1.56 (1.49-1.64)*	1.07 (0.91-1.25)	4.38 (4.13-4.64)*
Difficulty Getting In/Out of Chairs	4.71 (4.58-4.83)*	2.52 (2.47-2.56)*	2.18 (2.13-2.22)*	1.26 (1.22-1.29)*	0.59 (0.53-0.65)*	2.73 (2.64-2.84)*
Difficulty Walking	4.88 (4.75-5.02)*	2.32 (2.28-2.36)*	2.27 (2.23-2.32)*	1.23 (1.20-1.26)*	0.62 (0.57-0.67)*	2.65 (2.56-2.74)*
Difficulty Toileting	5.35 (5.17-5.55)*	2.85 (2.77-2.93)*	1.61 (1.57-1.66)*	1.49 (1.44-1.55)*	0.89 (0.79-1.00)	4.06 (3.86-4.27)*

Appendix

Health Indicator	Adjusted Odds Ratio (95% Confidence Interval)					
	By Health Characteristics			By Other Characteristic		
	Has Depressed Mood (Ref = No Depression)	Has UI (Ref = No Incontinence)	Is Obese (BMI ≥ 30) (Ref = Not Obese)	Race		Used Proxy Respondent (Ref = Did Not Use Proxy)
			Non-Asian, Non-White (Ref = White)	Asian, Non-White (Ref = White)		
Health Maintenance and Interfering Health Issues in Obese Members						
Did Not Discuss Physical Activity With Provider	NA	NA	0.75 (0.74-0.77)*	NA	NA	NA
Not Advised On Physical Activity Level By Provider	NA	NA	0.61 (0.60-0.62)*	NA	NA	NA
Urinary Incontinence Is Big Problem	NA	NA	2.08 (1.99-2.16)*	NA	NA	NA

*P<0.003.

BMI indicates body mass index; VR-12 PCS and MCS scores indicate the Veterans-RAND 12-Item Survey physical component summary score and mental component summary score, (0-100 scale, 0 representing worst health, 100 representing best health); ADL indicates Activity of Daily Living.

All odds ratios are estimated with hierarchical multiple logistic regression to account for members clustered in plans. The models adjust for patient age and gender.

Note: Obese indicates a body mass index of ≥30, based on member's reported height and weight. Poor physical health indicates a VR-12 PCS score in the sickest quartile of the PCS score distribution (PCS≤20.6 in PACE, ≤23.4 in SNP, ≤29.2 in Other MA). Poor mental health indicates a VR-12 MCS score in the sickest quartile of the MCS score distribution (MCS≤31.6 in PACE, ≤34.2 in SNP, ≤43.6 in Other MA).

Set IV: Within-Plan Type Regression Comparisons Plan-Level Assessment

Table 22. Linear Regression Predicting PROGRAM OF ALL INCLUSIVE CARE FOR THE ELDERLY (PACE) Plan Performance on Adverse Health Indicators, by At-Risk Subgroups, 2010 (n=58 plans)

Dependent Variables: Plan Rate of Health Indicator	Linear Regression Predicting Plan Rate of Adverse Health Indicators				
	β – estimate				
	Percentage of Plan Members Who:				
	Have Urinary Incontinence	Have Memory Loss	Are Non-Asian, Non-White (vs. White)	Are Asian, Non-White (vs. White)	Used Proxy Respondent
Sickest Quartile VR-12 PCS and MCS Scores					
Sickest Quartile PCS	0.27*	0.08	-0.15	0.11	0.08
Sickest Quartile MCS	0.33	0.33*	-0.06	0.11	0.33*
Participation in Social Activities					
Health Interferes With Social Activities All/Most of Time	0.53*	0.46*	-0.12	0.21	0.55*
State of Mind					
Felt Calm Some/Little/None of the Time	0.18	0.14	0.05	-0.08	0.15
Had Energy Some/Little/None of the Time	0.36*	0.18	-0.05	0.03	0.22*
Downhearted All/Most of the Time	0.05	0.19	0.07	-0.03	0.07
Choice in How Spends Time					
Accomplish Less All/Most of the Time Due to Physical Health	0.63*	0.46*	-0.22	0.08	0.45*
Limited In Work/Other Activities All/Most of the Time Due to Physical Health	0.66*	0.39*	-0.15	0.06	0.45*
Accomplish Less All/Most of the Time Due to Emotional Health	0.55*	0.56*	-0.01	0.06	0.53*
Limited In Work/Other Activities All/Most of the Time Due to Emotional Health	0.54*	0.46*	0.06	0.03	0.54*
Activities of Daily Living Limitations					
Any Difficulty Bathing	0.60*	0.47*	-0.18	0.10	0.60*
Any Difficulty Dressing	0.89*	0.62*	0.03	-0.03	0.72*
Any Difficulty Eating	0.52*	0.45*	0.01	0.02	0.47*
Any Difficulty Getting In/Out of Chairs	0.66*	0.40*	0.03	-0.05	0.48*
Any Difficulty Walking	0.31*	0.17	-0.12	0.06	0.22*
Any Difficulty Toileting	0.98*	0.61*	-0.02	0.04	0.65*

*p<0.003. (Significant results indicate that each percentage point increase in a subgroup was linked to changes in plan rates of an adverse indicator (by the percentage indicated in cells)).

Appendix

Table 23. Linear Regression Predicting SPECIAL NEEDS PLAN (SNP) Plan Performance on Adverse Health Indicators, by At-Risk Subgroups, 2010 (n=224 plans)

Dependent Variables: Plan Rate of Health Indicator	Linear Regression Predicting Plan Rate of Adverse Health Indicators					
	β – estimate					
	Percentage of Plan Members Who:					
	Have Depression	Have Urinary Incontinence	Are Obese	Are Non-Asian, Non-White (vs. White)	Are Asian, Non-White (vs. White)	Used Proxy Respondent
Sickest Quartile VR-12 PCS and MCS Scores						
Sickest Quartile PCS	0.41*	0.35*	0.22*	-0.08*	-0.09*	0.25*
Sickest Quartile MCS	0.67*	0.12	-0.12	0.01	-0.03	0.35*
Participation in Social Activities						
Health Interferes With Social Activities All/Most of Time	0.54*	0.20*	0.09	0.01	-0.06	0.42*
State of Mind						
Felt Calm Some/Little/None of the Time	0.57*	0.17	-0.29*	0.09*	-0.02	0.06
Had Energy Some/Little/None of the Time	0.37*	0.21*	-0.12	0.02	-0.12*	0.16*
Downhearted All/Most of the Time	0.45*	0.13	-0.38*	0.04	-0.01	0.21*
Choice in How Spends Time						
Accomplish Less All/Most of the Time Due to Physical Health	0.55*	0.29*	0.20	-0.07	-0.12*	0.43*
Limited In Work/Other Activities All/Most of the Time Due to Physical Health	0.63*	0.39*	0.21	-0.07	-0.12*	0.47*
Accomplish Less All/Most of the Time Due to Emotional Health	0.71*	0.18*	-0.03	0.01	-0.06	0.46*
Limited In Work/Other Activities All/Most of the Time Due to Emotional Health	0.49*	-0.05	-0.01	0.05	-0.06	0.48*
Activities of Daily Living Limitations						
Any Difficulty Bathing	0.42*	0.69*	0.06	-0.09	-0.05	0.55*
Any Difficulty Dressing	0.44*	0.50*	-0.11	-0.04	-0.04	0.66*
Any Difficulty Eating	0.35*	0.14*	-0.14	-0.05	0.01	0.46*
Any Difficulty Getting In/Out of Chairs	0.57*	0.44*	-0.12	-0.01	-0.11	0.50*
Any Difficulty Walking	0.58*	0.49*	-0.07	-0.01	-0.10	0.35*
Any Difficulty Toileting	0.49*	0.30*	0.01	-0.06	-0.03	0.68*
Did Not Discuss Physical Activity With Provider	NA	NA	-0.12	NA	NA	NA
Not Advised on Physical Activity Level by Provider	NA	NA	-0.31*	NA	NA	NA
Urinary Incontinence Is Big Problem	NA	NA	-0.12	NA	NA	NA

*p<0.003. (Significant results indicate that each percentage point increase in a subgroup was linked to changes in plan rates of an adverse indicator (by the percentage indicated in cells)).

Appendix

Table 24. Linear Regression Predicting OTHER (Non-SNP) MEDICARE ADVANTAGE Plan Performance on Adverse Health Indicators, by At-Risk Subgroups, 2010 (n=410 plans)

Dependent Variables: Plan Rate of Health Indicator	Linear Regression Predicting Plan Rate of Adverse Health Indicators					
	β – estimate					
	Percentage of Plan Members Who:					
	Have Depression	Have Urinary Incontinence	Are Obese	Are Non-Asian, Non-White (vs. White)	Are Asian, Non-White (vs. White)	Used Proxy Respondent
Sickest Quartile VR-12 PCS and MCS Scores						
Sickest Quartile PCS	0.61*	0.38*	0.24*	0.06*	-0.12*	0.31*
Sickest Quartile MCS	1.26*	-0.34*	-0.29*	0.21	-0.02	1.08*
Participation in Social Activities						
Health Interferes With Social Activities All/Most of Time	0.67*	-0.01	0.05	0.11*	-0.06*	0.44*
State of Mind						
Felt Calm Some/Little/None of the Time	1.09*	-0.27	-0.11	0.20*	-0.06*	0.93*
Had Energy Some/Little/None of the Time	1.05*	0.16	0.13	0.14*	-0.09*	0.82*
Downhearted All/Most of the Time	0.69*	-0.18*	-0.15*	0.10*	-0.05*	0.57*
Choice in How Spends Time						
Accomplish Less All/Most of the Time Due to Physical Health	0.71*	0.29*	0.13	0.08*	-0.08*	0.45*
Limited In Work/Other Activities All/Most of the Time Due to Physical Health	0.65*	0.33*	0.25*	0.07*	-0.09*	0.30*
Accomplish Less All/Most of the Time Due to Emotional Health	0.63*	-0.03	0.04	0.10*	-0.06*	0.40*
Limited In Work/Other Activities All/Most of the Time Due to Emotional Health	0.56*	-0.001	0.07	0.11*	-0.04*	0.37*
Activities of Daily Living Limitations						
Any Difficulty Bathing	0.59*	0.12	0.18*	0.11*	-0.07*	0.34*
Any Difficulty Dressing	0.58*	0.01	0.05	0.11*	-0.06*	0.39*
Any Difficulty Eating	0.28*	-0.002	-0.06	0.05*	-0.004	0.22*
Any Difficulty Getting In/Out of Chairs	0.83*	0.14	-0.02	0.10*	-0.10*	0.65*
Any Difficulty Walking	0.85*	0.13	0.21*	0.13*	-0.09*	0.56*
Any Difficulty Toileting	0.47*	-0.01	-0.02	0.08*	-0.03	0.33*
Did Not Discuss Physical Activity With Provider	NA	NA	0.15	NA	NA	NA
Not Advised on Physical Activity Level by Provider	NA	NA	0.30*	NA	NA	NA
Urinary Incontinence Is Big Problem	NA	NA	0.15	NA	NA	NA

*p<0.003. (Significant results indicate that each percentage point increase in a subgroup was linked to changes in plan rates of an adverse indicator (by the percentage indicated in cells)).

**(Preliminary Analyses) Set V: Between-Plan Type Comparisons of At-Risk Subgroups
Individual-Level Assessment**

Table 25. Rates of Adverse Health Indicators Among URINARY INCONTINENT Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 4,927 Members	Medicare Advantage Special Needs Plans (SNP) n = 23,248 Members	Other Medicare Advantage (MA) n = 95,222 Members	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	25.5 (8.8)	29.1 (10.8)	35.4 (12.3)	p<0.05
Plan MCS Score Mean (SD)	39.0 (13.3)	41.1 (13.4)	48.7 (12.6)	p<0.05
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	30.3%	34.4%	33.9%	p<0.0001 ^a
Sickest Quartile on MCS Score	32.4%	31.4%	32.1%	p<0.07 ^b
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	45.6%	39.2%	19.3%	p<0.0001
State of Mind				
Calm Some/Little/None of Time	53.8%	56.3%	34.1%	p<0.0001 ^c
Energy Some/Little/None of Time	86.2%	80.4%	59.3%	p<0.0001
Downhearted All/Most of Time	25.3%	28.6%	15.4%	p<0.0001
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	72.1%	53.5%	31.2%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Physical Health	74.9%	56.3%	32.5%	p<0.0001
Accomplish Less All/Most of Time Due to Emotional Health	55.0%	35.8%	16.6%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	51.9%	32.9%	15.5%	p<0.0001
Activities of Daily Living Limitations				
Difficulty Bathing	81.3%	51.6%	23.7%	p<0.0001
Difficulty Dressing	71.7%	43.9%	19.6%	p<0.0001
Difficulty Eating	35.5%	21.9%	8.2%	p<0.0001
Difficulty Getting In/Out of Chairs	75.8%	57.4%	34.6%	p<0.0001
Difficulty Walking	87.9%	70.6%	45.4%	p<0.0001
Difficulty Toileting	62.6%	36.1%	15.5%	p<0.0001

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between urinary incontinent members in PACE, SNP and Other MA.

^a = The difference in rates of PACE and SNP plans and of PACE and Other MA plans are statistically significant with p<0.0001, but the difference in rates of SNP and Other MA plans is not significant.

^b = The difference in rates of SNP and Other MA plans is statistically significant with p<0.05, but the differences in rates of PACE and SNP plans and PACE and Other MA plans are not significant.

^c = The differences in rates of PACE and Other MA plans and SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.001.

Appendix

Table 26. Rates of Adverse Health Indicators Among NON-ASIAN, NON-WHITE Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 2,801 Members	Medicare Advantage Special Needs Plans (SNP) n = 9,123 Members	Other Medicare Advantage (MA) n = 54,040 Members	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	28.3 (10.3)	32.8 (11.3)	36.7 (12.1)	p<0.05
Plan MCS Score Mean (SD)	42.1 (13.0)	42.7 (13.0)	47.6 (12.7)	p<0.05 ^a
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	24.7%	22.8%	29.3%	p<0.0001 ^b
Sickest Quartile on MCS Score	23.7%	26.1%	36.5%	p<0.0001 ^c
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	35.8%	31.8%	20.7%	p<0.0001
State of Mind				
Calm Some/Little/None of Time	48.4%	52.6%	38.1%	p<0.0001
Energy Some/Little/None of Time	76.1%	70.3%	54.9%	p<0.0001
Downhearted All/Most of Time	21.0%	27.6%	19.1%	p<0.0001 ^d
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	59.9%	40.0%	28.6%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Physical Health	62.1%	42.0%	29.4%	p<0.0001
Accomplish Less All/Most of Time Due to Emotional Health	45.6%	28.9%	18.0%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	41.7%	26.2%	16.9%	p<0.0001
Activities of Daily Living Limitations				
Difficulty Bathing	68.6%	35.9%	22.2%	p<0.0001
Difficulty Dressing	59.7%	31.5%	19.3%	p<0.0001
Difficulty Eating	25.0%	14.7%	8.3%	p<0.0001
Difficulty Getting In/Out of Chairs	64.8%	42.6%	29.7%	p<0.0001
Difficulty Walking	79.9%	55.8%	39.7%	p<0.0001
Difficulty Toileting	46.7%	23.6%	14.2%	p<0.0001

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Non-Asian, Non-White members in PACE, SNP and Other MA.

^a = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.05, but the difference in rates of PACE and SNP plans is not significant.

^b = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.05.

^c = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.01.

^d = The differences in rates of PACE and SNP plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and Other MA plans is significant with p<0.05.

Appendix

Table 27. Rates of Adverse Health Indicators Among ASIAN, NON-WHITE Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 2,801 Members	Medicare Advantage Special Needs Plans (SNP) n = 9,123 Members	Other Medicare Advantage (MA) n = 54,040 Members	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	27.1 (9.5)	36.4 (11.0)	41.7 (10.8)	p<0.05
Plan MCS Score Mean (SD)	39.1 (12.4)	45.8 (11.9)	50.8 (10.6)	p<0.05
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	28.5%	14.5%	13.9%	p<0.0001 ^a
Sickest Quartile on MCS Score	30.8%	16.2%	25.0%	p<0.0001 ^b
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	46.9%	18.9%	9.4%	p<0.0001
State of Mind				
Calm Some/Little/None of Time	46.8%	41.1%	23.1%	p<0.0001 ^c
Energy Some/Little/None of Time	80.1%	58.6%	37.4%	p<0.0001
Downhearted All/Most of Time	22.0%	17.9%	11.4%	p<0.0001 ^d
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	61.5%	26.6%	14.8%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Physical Health	64.8%	28.3%	14.9%	p<0.0001
Accomplish Less All/Most of Time Due to Emotional Health	47.5%	19.5%	8.6%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	50.6%	20.7%	9.8%	p<0.0001
Activities of Daily Living Limitations				
Difficulty Bathing	72.0%	29.2%	10.9%	p<0.0001
Difficulty Dressing	58.8%	24.5%	9.4%	p<0.0001
Difficulty Eating	27.5%	15.4%	5.4%	p<0.0001
Difficulty Getting In/Out of Chairs	58.6%	30.8%	14.4%	p<0.0001
Difficulty Walking	77.1%	42.6%	23.2%	p<0.0001
Difficulty Toileting	52.0%	22.3%	8.3%	p<0.0001

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Asian members in PACE, SNP and Other MA.

^a = The differences in rates of PACE and SNP plans and of PACE and Other MA plans are significant with p<0.0001, but the difference in rates of SNP and Other MA plans is not significant.

^b = The differences in rates of PACE and SNP plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and Other MA plans is significant with p<0.001.

^c = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.01.

^d = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.05.

Appendix

Table 28. Rates of Adverse Health Indicators Among PROXY RESPONDENT Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 5,206 Members	Medicare Advantage Special Needs Plans (SNP) n = 17,347 Members	Other Medicare Advantage (MA) n = 29,495 Members	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	26.4 (9.3)	31.1 (11.9)	32.3 (12.4)	p<0.05
Plan MCS Score Mean (SD)	40.0 (13.7)	42.3 (13.8)	45.3 (13.7)	p<0.05
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	28.9%	30.6%	44.5%	p<0.0001 ^a
Sickest Quartile on MCS Score	30.9%	29.3%	43.5%	p<0.0001 ^a
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	42.7%	36.7%	30.6%	p<0.0001
State of Mind				
Calm Some/Little/None of Time	49.9%	51.5%	45.3%	p<0.0001 ^a
Energy Some/Little/None of Time	83.6%	74.3%	69.4%	p<0.0001
Downhearted All/Most of Time	23.9%	25.8%	20.6%	p<0.0001 ^b
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	70.0%	49.9%	45.2%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Physical Health	72.8%	53.2%	47.5%	p<0.0001
Accomplish Less All/Most of Time Due to Emotional Health	52.2%	33.3%	25.8%	p<0.0001
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	49.7%	32.0%	25.1%	p<0.0001
Activities of Daily Living Limitations				
Difficulty Bathing	81.8%	51.3%	38.4%	p<0.0001
Difficulty Dressing	71.3%	46.3%	34.0%	p<0.0001
Difficulty Eating	34.3%	25.4%	16.1%	p<0.0001
Difficulty Getting In/Out of Chairs	70.5%	51.9%	42.8%	p<0.0001
Difficulty Walking	83.0%	63.4%	54.2%	p<0.0001
Difficulty Toileting	59.4%	38.4%	25.5%	p<0.0001

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Proxy Respondent members in PACE, SNP and Other MA.

^a = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.05.

^b = The differences in rates of PACE and Other MA plans and of SNP and Other MA plans are significant with p<0.0001, and the difference in rates of PACE and SNP plans is significant with p<0.01.

Set VI: Between-Plan Type Comparisons of At-Risk Subgroups Plan-Level Assessment

Table 29. Plan Rate of Adverse Health Indicators Among URINARY INCONTINENT Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 58 Plans	Medicare Advantage Special Needs Plans (SNP) n = 224 Plans	Other Medicare Advantage (MA) n = 410 Plans	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	25.5 (1.8)	29.5 (2.9)	35.1 (2.5)	p≤0.05
Plan MCS Score Mean (SD)	39.6 (4.1)	41.2 (3.6)	47.9 (3.4)	p≤0.05
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	30.3 (7.0)	33.4 (11.2)	34.6 (8.0)	p≤0.05*
Sickest Quartile on MCS Score	31.7 (12.4)	29.9 (10.5)	34.8 (11.7)	p≤0.05**
Plan Rates of Members Who Report the Following				
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	46.3 (13.8)	37.8 (12.5)	20.8 (8.2)	p≤0.05
State of Mind				
Calm Some/Little/None of Time	52.8 (10.1)	57.3 (12.3)	36.1 (10.1)	p≤0.05
Energy Some/Little/None of Time	86.6 (6.1)	79.7 (10.1)	60.8 (8.9)	p≤0.05
Downhearted All/Most of Time	23.8 (9.5)	27.7 (12.2)	16.8 (7.7)	p≤0.05
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	71.9 (12.0)	50.7 (14.0)	32.3 (8.2)	p≤0.05
Limited In Work/Other Activities All/Most of Time Due to Physical Health	73.9 (11.5)	54.1 (14.1)	33.7 (8.5)	p≤0.05
Accomplish Less All/Most of Time Due to Emotional Health	53.4 (13.7)	34.2 (13.5)	18.1 (7.7)	p≤0.05
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	9.4 (12.5)	30.9 (11.6)	16.7 (7.0)	p≤0.05
Activities of Daily Living Limitations				
Difficulty Bathing	80.1 (11.6)	48.3 (17.0)	25.1 (7.9)	p≤0.05
Difficulty Dressing	69.9 (15.0)	41.4 (16.8)	20.9 (7.5)	p≤0.05
Difficulty Eating	34.1 (12.5)	19.5 (10.7)	8.9 (4.4)	p≤0.05
Difficulty Getting In/Out of Chairs	74.5 (11.6)	55.7 (13.3)	35.9 (8.4)	p≤0.05
Difficulty Walking	87.8 (6.3)	69.1 (12.5)	46.9 (9.1)	p≤0.05
Difficulty Toileting	59.6 (15.5)	33.2 (17.2)	16.6 (6.5)	p≤0.05

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Urinary Incontinent members in PACE, SNP and Other MA.

SD indicates Standard Deviation.

All differences in means of program types are statistically significant with p≤0.05, unless otherwise specified.

* = The differences in means of PACE and SNP plans and of PACE and Other MA plans are statistically significant with p<0.05, but the difference in means of SNP and Other MA plans is not significant.

** = The difference in means of SNP and Other MA plans is statistically significant with p<0.05, and the difference in means of PACE and SNP plans and PACE and Other MA plans are not significant.

Appendix

Table 30. Plan Rate of Adverse Health Indicators Among NON-ASIAN, NON-WHITE Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 58 Plans	Medicare Advantage Special Needs Plans (SNP) n = 224 Plans	Other Medicare Advantage (MA) n = 410 Plans	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	27.4 (4.3)	32.7 (3.4)	37.0 (2.3)	p≤0.05
Plan MCS Score Mean (SD)	43.1 (4.5)	43.3 (4.1)	48.5 (2.7)	p≤0.05*
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score	28.3 (20.5)	24.0 (11.3)	28.7 (7.4)	p≤0.05**
Sickest Quartile on MCS Score	21.6 (11.7)	25.1 (12.2)	33.2 (9.8)	p≤0.05*
Plan Rates of Members Who Report the Following				
Participation in Social Activity				
Health Interferes All/Most of Time With Participation	33.2 (14.5) ¹	31.0 (12.4)	18.9 (6.7)	p≤0.05*
State of Mind				
Calm Some/Little/None of Time	43.6 (16.8)	51.5 (14.1)	35.7 (9.1)	p≤0.05
Energy Some/Little/None of Time	76.4 (11.8)	69.8 (11.5)	53.4 (9.2)	p≤0.05
Downhearted All/Most of Time	17.3 (12.0)	25.3 (12.0)	17.2 (6.7)	p≤0.05
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health	64.2 (17.8)	40.0 (14.0)	27.9 (7.7)	p≤0.05
Limited In Work/Other Activities All/Most of Time Due to Physical Health	65.6 (17.7)	42.2 (14.3)	28.3 (8.1)	p≤0.05
Accomplish Less All/Most of Time Due to Emotional Health	46.0 (20.3) ¹	27.9 (12.3)	16.3 (6.4)	p≤0.05
Limited In Work/Other Activities All/Most of Time Due to Emotional Health	42.7 (19.9) ¹	25.1 (10.6)	15.5 (5.9)	p≤0.05
Activities of Daily Living Limitations				
Difficulty Bathing	70.8 (19.5)	36.8 (16.8)	21.3 (6.6)	p≤0.05
Difficulty Dressing	61.3 (20.2)	31.6 (15.3)	17.8 (6.1)	p≤0.05
Difficulty Eating	25.3 (14.1)	15.1 (10.7)	7.6 (3.6)	p≤0.05
Difficulty Getting In/Out of Chairs	67.8 (15.2)	42.3 (14.1)	27.8 (7.7)	p≤0.05
Difficulty Walking	80.1 (16.5)	55.4 (12.9) ²	38.1 (7.9)	p≤0.05
Difficulty Toileting	47.4 (19.7)	23.4 (13.7)	12.7 (5.0)	p≤0.05

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Non-Asian, Non-White members in PACE, SNP and Other MA. SD indicates Standard Deviation.

All differences in means of program types are statistically significant with p≤0.05, unless otherwise specified.

* = The differences in means of PACE and SNP plans and of PACE and Other MA plans are statistically significant with p<0.05, but the difference in means of SNP and Other MA plans is not significant.

** = The difference in means of SNP and Other MA plans is statistically significant with p<0.05, and the difference in means of PACE and SNP plans and PACE and Other MA plans are not significant.

¹n=55

Appendix

Table 31. Plan Rate of Adverse Health Indicators Among ASIAN, NON-WHITE Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE) n = 24 Plans	Medicare Advantage Special Needs Plans (SNP) n = 224 Plans	Other Medicare Advantage (MA) n = 410 Plans	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	30.7 (7.6)	36.6 (6.7)	42.0 (5.9)	p≤0.05
Plan MCS Score Mean (SD)	47.7 (10.7)	45.9 (7.8)	51.4 (6.0)	p≤0.05*
Plan Rates of Members Who Report the Following				
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score, % (SD)	22.9 (32.5)	14.1 (25.2)	14.5 (20.1)	p≤0.05**
Sickest Quartile on MCS Score, % (SD)	12.7 (19.7)	17.0 (25.8)	22.6 (23.2)	p≤0.05*
Participation in Social Activity				
Health Interferes All/Most of Time With Participation, % (SD)	24.1 (32.5)	17.8 (24.6)	8.9 (16.2)	p≤0.05**
State of Mind				
Calm Some/Little/None of Time, % (SD)	43.6 (37.0)	44.7 (32.1)	23.0 (24.9)	p≤0.05**
Energy Some/Little/None of Time, % (SD)	63.1 (36.2)	58.4 (31.4)	37.0 (28.5) ²	p≤0.05**
Downhearted All/Most of Time, % (SD)	11.0 (16.8) ¹	17.8 (24.2)	12.4 (18.2) ²	p≤0.05*
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health, % (SD)	44.7 (38.2)	27.4 (32.3)	13.3 (17.8)	p≤0.05**
Limited In Work/Other Activities All/Most of Time Due to Physical Health, % (SD)	50.6 (39.5)	28.0 (31.7)	13.5 (18.4) ³	p≤0.05
Accomplish Less All/Most of Time Due to Emotional Health, % (SD)	23.4 (28.1)	18.7 (26.5)	7.0 (13.5)	p≤0.05**
Limited In Work/Other Activities All/Most of Time Due to Emotional Health, % (SD)	26.0 (28.1)	20.7 (27.6)	8.2 (15.4) ³	≤0.05**
Activities of Daily Living Limitations				
Difficulty Bathing, % (SD)	65.4 (35.1)	27.0 (31.3)	9.9 (15.9)	p≤0.05
Difficulty Dressing, % (SD)	46.7 (37.5)	25.4 (30.2)	8.9 (16.0)	p≤0.05
Difficulty Eating, % (SD)	22.1 (26.3)	14.9 (24.0)	5.0 (12.1)	p≤0.05*
Difficulty Getting In/Out of Chairs, % (SD)	58.0 (35.6)	31.5 (32.0)	14.0 (19.4)	p≤0.05
Difficulty Walking, % (SD)	75.9 (24.1)	43.9 (34.1)	22.6 (23.5)	p≤0.05
Difficulty Toileting, % (SD)	48.5 (40.2)	19.6 (28.0)	6.6 (11.8)	p≤0.05

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Asian members in PACE, SNP and Other MA.

SD indicates Standard Deviation.

All differences in means of program types are statistically significant with p≤0.05, unless otherwise specified.

* = The differences in means of SNP and Other MA plans is statistically significant with p<0.05, but the difference in means of PACE and SNP plans and PACE and Other MA plans are not significant.

** = The difference in means of PACE and Other MA plans and of SNP and Other MA plans are statistically significant with p<0.05, but the difference in means of PACE and SNP plans is not significant.

¹n=23, ²n=374, ³n=373

Appendix

Table 32. Plan Rate of Adverse Health Indicators Among PROXY RESPONDENT Medicare Members, by Plan Type, 2010

Health Indicator	Program of All Inclusive Care for the Elderly (PACE), n = 58 Plans	Medicare Advantage Special Needs Plans (SNP) n = 224 Plans	Other Medicare Advantage (MA) n = 410 Plans	Difference
Mean PCS and MCS Score				
Plan PCS Score Mean (SD)	26.3 (1.8)	31.7 (4.1)	32.4 (2.5)	p≤0.05*
Plan MCS Score Mean (SD)	40.5 (3.7)	42.8 (4.1)	45.5 (2.5)	p≤0.05
Plan Rates of Members Who Report the Following				
Sickest Quartile PCS and MCS				
Sickest Quartile on PCS Score, % (SD)	29.4 (8.6)	29.1 (13.4)	44.3 (9.3)	p≤0.05**
Sickest Quartile on MCS Score, % (SD)	30.7 (11.4)	27.7 (13.7)	42.6 (8.7)	p≤0.05**
Participation in Social Activity				
Health Interferes All/Most of Time With Participation, % (SD)	2.7 (12.6)	33.5 (14.2)	30.0 (7.9)	p≤0.05
State of Mind				
Calm Some/Little/None of Time, % (SD)	48.4 (9.1)	51.4 (15.2)	44.9 (8.8)	p≤0.05***
Energy Some/Little/None of Time, % (SD)	83.8 (7.0)	73.5 (13.6)	69.2 (7.9)	p≤0.05
Downhearted All/Most of Time, % (SD)	23.3 (10.5)	24.2 (13.6)	20.3 (7.7)	p≤0.05**
Choice in How Spends Time				
Accomplish Less All/Most of Time Due to Physical Health, % (SD)	44.7 (38.2)	27.4 (32.3)	13.3 (17.8)	p≤0.05**
Limited In Work/Other Activities All/Most of Time Due to Physical Health, % (SD)	50.6 (39.5)	28.0 (31.7)	13.5 (18.4) ³	p≤0.05
Accomplish Less All/Most of Time Due to Emotional Health, % (SD)	23.4 (28.1)	18.7 (26.5)	7.0 (13.5)	p≤0.05**
Limited In Work/Other Activities All/Most of Time Due to Emotional Health, % (SD)	26.0 (28.1)	20.7 (27.6)	8.2 (15.4) ³	p≤0.05**
Activities of Daily Living Limitations				
Difficulty Bathing, % (SD)	81.8 (8.9)	45.1 (20.2)	38.3 (9.2)	p≤0.05
Difficulty Dressing, % (SD)	70.3 (12.0)	41.4 (19.1)	33.7 (8.4)	p≤0.05
Difficulty Eating, % (SD)	32.9 (10.4)	22.5 (14.2) ¹	15.9 (5.7)	p≤0.05
Difficulty Getting In/Out of Chairs, % (SD)	70.6 (10.3)	48.3 (17.2)	42.6 (9.3)	p≤0.05
Difficulty Walking, % (SD)	83.1 (7.9)	60.9 (15.7)	54.1 (8.2)	p≤0.05
Difficulty Toileting, % (SD)	57.9 (13.3)	32.2 (18.6)	25.3 (7.7)	p≤0.05

Difference indicates chi-square test of differences in proportions (or T-test of differences in means in PCS/MCS score) between Proxy Respondent members in PACE, SNP, and other MA. SD indicates standard deviation.

All differences in means of program types are statistically significant with p≤0.05, unless otherwise specified.

* = The differences in means of PACE and SNP plans and of PACE and Other MA plans are statistically significant with p≤0.05, but the difference in means of SNP and Other MA plans is not significant.

** = The differences in means of PACE and Other MA plans and of SNP and Other MA plans are statistically significant with p≤0.05, but the difference in means of PACE and SNP plans is not significant.

*** = The differences in means of PACE and SNP plans and of SNP and Other MA plans are statistically significant with p≤0.05, but the difference in means of PACE and Other MA plans is not significant.

¹n = 219

Mental Health Among Beneficiaries in Specialized Medicare Programs (Question 3):**Table 33. Survey Disposition by Population**

Population		Medicare Advantage				PACE			
		Number of Contracts	Number of Benefit Packages	Number of Respondents		Number of Contracts	Number of Benefit Packages	Number of Respondents	
				All	Completed Surveys			All	Completed Surveys
Overall		708	2,390	546,931	337,249	58	58	14,366	9,652
SNP Only	Overall	298	453	122,784	64,094				
	Chronic	68	123	16,158	9,825				
	Dual	199	288	95,517	50,812				
	Institutional	31	42	11,109	3,457				

Table 34. Descriptive Statistics for MCS: Overall and by Demographic Characteristics in PACE, 2010

Demographic	Category	Descriptive Statistics for MCS		
		Number of Individuals	Mean MCS	Standard Deviation
Overall		9,538	41.9	13.5
Gender	Male	2,459	41.9	13.7
	Female	7,079	41.9	13.4
Age	<35	0	NA	NA
	35 to 54	0	NA	NA
	55 to 64	734	40.8	14.0
	65 to 74	2,213	41.8	13.4
	75 to 84	3,446	42.2	13.1
	85+	3,145	41.9	13.7
PCS	<15	680	49.0	12.3
	15 to 24	3,546	38.4	13.5
	25 to 34	3,130	41.5	13.0
	35 to 44	1,514	44.9	12.4
	45 to 49	599	48.2	12.5
	50+	67	45.3	13.9
Any ADL	No	1,207	49.2	11.6
	Yes	8,101	40.7	13.4

Appendix

Table 35A. Descriptive Statistics for MCS: Overall and by Demographic Characteristics in Chronic SNPS, 2010

Demographic	Category	Descriptive Statistics for MCS		
		Number of Individuals	Mean MCS	Standard Deviation
Overall		9,745	46.19	13.19
Gender	Male	4,449	46.15	13.16
	Female	5,296	46.22	13.21
Age	<35	114	35.30	14.65
	35 to 54	1,017	37.14	12.72
	55 to 64	1,250	39.20	12.98
	65 to 74	4,172	49.01	12.08
	75 to 84	2,423	48.57	12.23
	85+	769	48.31	12.33
PCS	<15	507	50.87	11.05
	15 to 24	2,062	41.22	13.67
	25 to 34	2,610	44.10	12.87
	35 to 44	2,510	47.26	12.54
	45 to 49	1,779	52.14	11.48
	50+	273	46.24	13.16
Any ADL	No	4,378	50.89	11.57
	Yes	5,019	42.12	13.19

Table 35B. Descriptive Statistics for MCS: Overall and by Demographic Characteristics in Dual SNPS, 2010

Demographic	Category	Descriptive Statistics for MCS		
		Number of Individuals	Mean MCS	Standard Deviation
Overall		50,205	43.09	13.25
Gender	Male	17,925	43.29	13.23
	Female	32,280	42.98	13.26
Age	<35	1,785	42.41	14.04
	35 to 54	9,416	38.95	13.70
	55 to 64	7,534	39.23	12.83
	65 to 74	16,488	45.33	12.36
	75 to 84	10,516	45.76	12.53
	85+	4,466	44.04	13.78
PCS	<15	2,612	48.58	11.86
	15 to 24	12,321	38.99	13.51
	25 to 34	14,540	41.29	12.72
	35 to 44	12,445	44.51	12.47
	45 to 49	6,800	49.19	12.24
	50+	1,474	45.11	13.44
Any ADL	No	17,737	48.16	12.08
	Yes	30,426	40.09	12.98

Appendix

Table 35C. Descriptive Statistics for MCS: Overall and by Demographic Characteristics in Institutional SNPS, 2010

Demographic	Category	Descriptive Statistics for MCS		
		Number of Individuals	Mean MCS	Standard Deviation
Overall		3,363	42.68	14.66
Gender	Male	973	43.38	14.38
	Female	2,390	42.40	14.76
Age	<35	5	41.42	13.87
	35 to 54	72	34.63	15.36
	55 to 64	175	38.10	13.10
	65 to 74	629	45.89	13.90
	75 to 84	1,159	43.68	14.48
	85+	1,323	41.32	14.87
PCS	<15	258	46.11	12.30
	15 to 24	1,212	37.52	14.51
	25 to 34	904	41.91	14.40
	35 to 44	564	46.75	13.44
	45 to 49	345	52.04	11.72
	50+	79	49.73	12.73
Any ADL	No	678	53.11	10.20
	Yes	2,551	39.80	14.40

Appendix

Table 36A. Correlation Between PCS and MCS, 2010

Population	Overall Correlation Coefficient Between PCS and MCS	Number of Benefit Packages	Plan-Level Correlation Coefficient Between PCS and MCS								
			Min	5th	10th	25th	50th	75th	90th	95th	Max
Chronic SNPs	0.19	105	-1.00	-0.32	-0.04	0.12	0.26	0.40	0.70	1.00	1.00
Dual SNPs	0.17	279	-1.00	-0.24	-0.08	0.08	0.17	0.25	0.42	0.58	1.00
Institutional SNPs	0.25	36	-1.00	-0.95	-0.28	-0.01	0.11	0.36	0.74	0.97	1.00
PACE	0.12	58	-0.14	-0.09	-0.07	0.03	0.08	0.16	0.22	0.31	0.50

Table 36B. Distribution of Denominators* Across Plans, 2010

Population	Number of Benefit Packages	Plan-Level Correlation Coefficient Between PCS and MCS								
		Min	5th	10th	25th	50th	75th	90th	95th	Max
Chronic SNPs	118	1	1	1	5	24	91	306	415	691
Dual SNPs	287	1	2	5	18	80	283	530	621	726
Institutional SNPs	38	1	1	2	7	32	140	252	411	674
PACE	58	17	23	32	47	97	198	475	639	721

* Because correlations between PCS and MCS scores (presented in Table 4a) can only be estimated for individuals with non-missing values for both scores, only individuals with non-missing PCS and MCS were included in the denominator counts for each plan.

Appendix

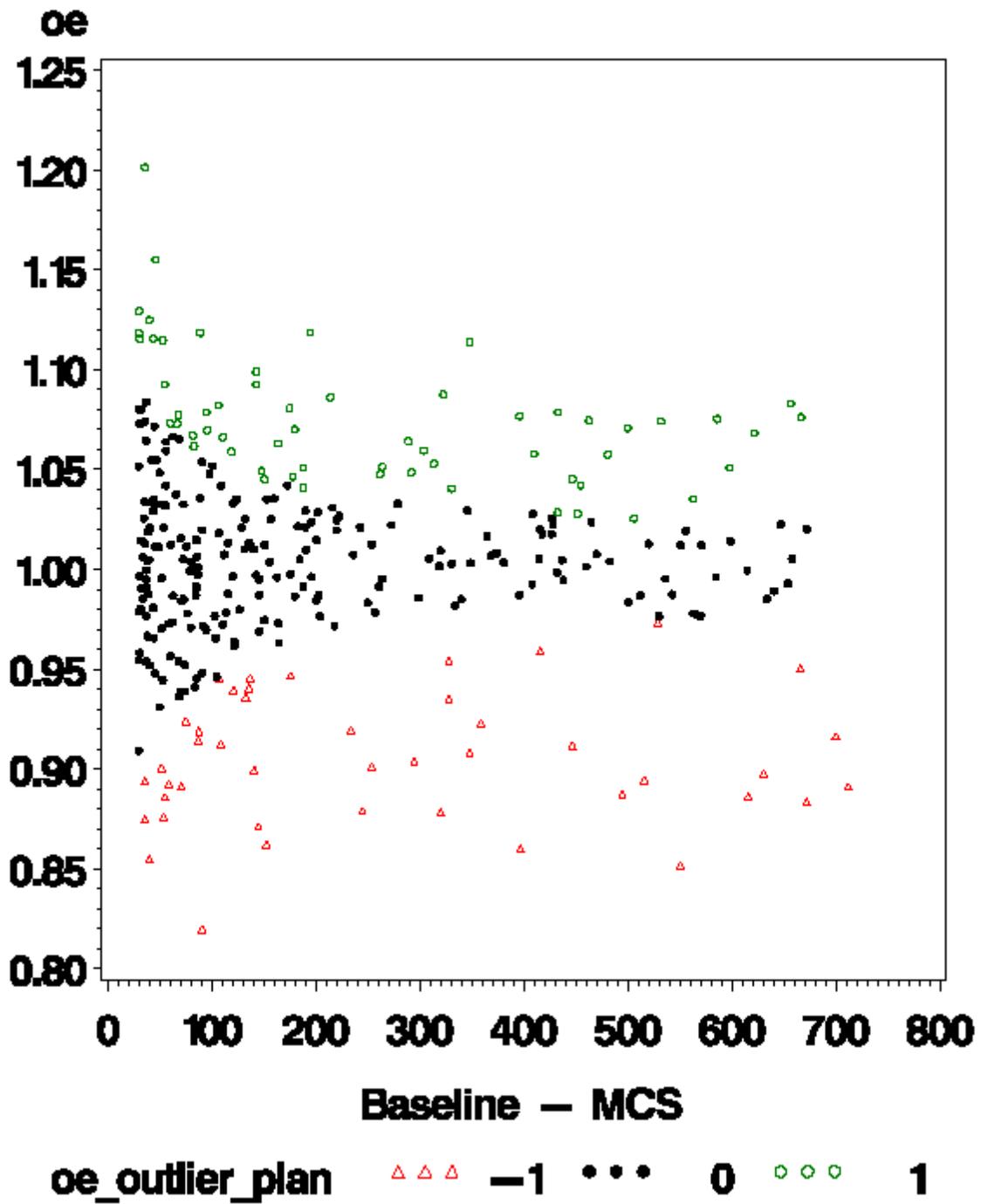
Table 39. Regression Model for Estimation of Predicted MCS

Parameter	Estimate	Standard Error	t-Value	p-Value
Intercept	41.6387	0.7905	52.6700	<.0001
b_mrepcs	-0.0835	0.0189	-4.4200	<.0001
female	-0.5674	0.5743	-0.9900	0.3232
b_any_difficulty	-3.4460	0.3896	-8.8500	<.0001
b_age	0.0218	0.0109	2.0100	0.0446
b_mrepcs*female	-0.0573	0.0086	-6.6800	<.0001
b_mrepcs*b_age	0.0036	0.0003	13.3900	<.0001
b_mrepcs*b_any_diffi	-0.1421	0.0103	-13.8200	<.0001
female*b_age	0.0300	0.0069	4.3600	<.0001

**Note: Parameter estimates were prepared for SNP and PACE plans combined.*

Figure 1.

Association of Denominator Size, Outlier Status, and OE Ratio



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