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SAMPLE

2008 – 2010 Cohort 11

MEDICARE
ADVANTAGE
ORGANIZATION

PERFORMANCE
MEASUREMENT
REPORT

MEDICARE HEALTH

OUTCOMES SURVEY

CENTERS
FOR MEDICARE
& MEDICAID
SERVICES

HEALTH
SERVICES
ADVISORY
GROUP



DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, Maryland 21244-1850



July 2011

Medicare Advantage Organizations and Quality Improvement Organizations,

The Centers for Medicare & Medicaid Services (CMS) is pleased to provide you with your Medicare Advantage Organization's (MAO) performance measurement results for *2008-2010 Cohort 11* of the Medicare Health Outcomes Survey (HOS). The *2008-2010 Cohort 11 Performance Measurement Report* includes results from the Medicare HOS version 2.0. The report presents performance measurement results for MAOs based on data from the Medicare HOS *2008 Cohort 11 Baseline* and *2010 Cohort 11 Follow Up* surveys. The HOS performance measurement results describe change in health status over time for beneficiaries.

CMS is encouraging each MAO to work in collaboration with their Quality Improvement Organization (QIO) to examine their results for use in quality improvement activities. The QIOs will receive MAO findings and the patient specific HOS data sets for their state(s) to support QIOs' quality improvement activities with the MAOs.

The subsection entitled "Featured Uses of HOS Data" in the Performance Measurement Report provides an example of how MAOs may use their results to target quality improvement activities. The *2008-2010 Cohort 11 Performance Measurement Report* also includes a Reader's Guide, Program Highlights, Executive Summary, Performance Measurement Results for key health indicators such as Physical Health, Mental Health, General Health and Comparative Health, Chronic Medical Conditions, and Clinical Measures, as well as Calculation of Outcomes, and Frequencies for the *2010 Cohort 11 Follow Up* survey fields.

You may submit inquiries to hos@azqio.sdps.org, or contact Health Services Advisory Group (HSAG) through the HOS Information and Technical Support telephone line at (888) 880-0077, and you may visit CMS' HOS web address at www.cms.gov/hos for more program information.

Sincerely,

/s/

Thomas Reilly, PhD
Director,
Data Development and Services Group

MEDICARE HEALTH OUTCOMES SURVEY

SAMPLE MAO REPORT

The following is a **sample** version of the *Cohort 11* Performance Measurement Report made available to all Medicare Advantage Organizations (MAOs) participating in the *2008 Cohort 11 Baseline* and *2010 Cohort 11 Follow Up* Medicare Health Outcomes Surveys.

The figures, tables, and text in this document contain sample MAO and state level data; however, all references to the *HOS Total* reflect **actual** data.

The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), as well as the HOS e-mail address (hos@azqio.sdps.org), are available to provide assistance with report questions and interpretation. A full description of the HOS program may be found at www.hosonline.org.

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Reader's Guide

The following Reader's Guide is provided to answer general questions about the HOS performance measurement reports. For further assistance, please refer to the Technical Assistance information on the next page.

- **How can I use the information contained in this report?**

This report is designed to guide Quality Improvement Organizations (QIOs) and Medicare Advantage Organizations (MAOs) in identifying the overall health of their Medicare population and in exploring potential programmatic interventions aimed at maintaining or improving health status. The Medicare HOS website includes a section entitled "Real World Uses of HOS Data" to assist MAOs and QIOs in their quality improvement activities. Please refer to the Program Highlights section in this report for additional information and updates about the HOS.

- **What if I encounter a term I do not understand?**

An updated glossary consisting of definitions relevant to Medicare HOS may be found in the Program Overview section of the HOS website (www.hosonline.org).

- **Where can I find my MAO level results and information on how they were generated?**

The *2010 Cohort 11 Follow Up* results are presented in the Executive Summary and Performance Measurement Results sections in this report. A summary of the data collection and analysis may be found in Appendix 1. In addition, response frequencies for each of the survey fields may be found in Appendix 2. *Please note that the percentages in the tables and graphs may not add to 100% due to rounding.*

- **Where can I find the number and a description of the beneficiaries that participated in determining my MAO level results?**

The number of beneficiaries that participated in the HOS and a table of demographic information are presented in the Distribution of the Sample and Response Rates and the Performance Measurement Results sections of this report.

- **Where can I find the 2010 NCQA HEDIS[®] Measure results?**

The 2010 National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS[®])¹ results for four measures are reported in the NCQA HEDIS measures section in the HOS *2010 Cohort 13 Baseline* Report, which is available for download to participating MAOs and QIOs through the Health Plan Management System (HPMS).

- **Where can I find the HOS Program information, such as sampling methodology and reporting timelines?**

A summary of HOS sampling methodology and survey administration may be found in Appendix 1 of this report. An overview of the HOS program, and the sampling and program timelines, may be found in the Program Overview and Program Timeline sections of the HOS website at www.hosonline.org.

- Where can I find additional MAO level results?**
 A summary table of the *2008-2010 Cohort 11* Performance Measurement physical health and mental health measures are presented in the Executive Summary section for each MAO in the State. In addition, the individual reports for all MAOs in the State are distributed to each QIO in a zipped file with the State level report.
- What survey questions were used in the HOS?**
 The 2008 and 2010 Medicare HOS 2.0 questionnaires may be downloaded from the Survey Instrument section of the HOS website (www.hosonline.org). In addition, the HOS questionnaires may also be found in the NCQA HEDIS 2008 and 2010, Volume 6 Specifications for the Medicare Health Outcomes Survey manuals.^{2, 3}
- Where can I obtain copies of the HEDIS Manuals?**
 Copies of the NCQA HEDIS 2008 and 2010, Volume 6 Specifications for the Medicare Health Outcomes Survey manuals, as well as other HEDIS Volume 6 publications may be purchased by calling the NCQA Customer Support Telephone Line at 1-888-275-7585 or via NCQA's Secure Online Order Center (www.ncqa.org).
- When will QIOs and MAOs receive beneficiary level data for Cohort 11 Performance Measurement?**
 Beneficiary level data are planned for distribution to QIOs and MAOs in Fall 2011. MAOs will be notified through CMS' Health Plan Management System (HPMS) of the availability of the data and the procedure to request it. QIOs receive their data via the HOS_Data Exchange Group within the QualityNet application.
- How can I obtain additional copies of this report?**
 All report distribution occurs electronically to participating MAOs through CMS' HPMS, and to participating QIOs through the HOS_Data Exchange Group within QualityNet. In addition, QIOs may access their HOS reports and the reports for all MAOs in their state via HPMS. An HPMS User ID is required to access the HPMS. MAOs may contact their CMS Quality Point of Contact to obtain access to their HOS reports. If assistance is required regarding HPMS access, please contact CMS at hpms_access@cms.hhs.gov.
- Where can I find information about research and reports related to the HOS?**
 Information about peer-reviewed articles, technical reports, and manuals related to the HOS may be found on the Publication section of the HOS website. Consult the What's New section for a listing of new reports and general updates (www.hosonline.org).

TECHNICAL ASSISTANCE

The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), as well as the HOS e-mail address (hos@azqio.sdps.org), are available to provide assistance with report questions and interpretation. Additionally, the Medicare HOS Overview section on CMS' website (www.cms.gov/hos) provides general information on the program. A full description of the HOS program may be found at www.hosonline.org.

Program Highlights

SELF-PACED TRAINING WEBINARS ON THE HOS WEBSITE

The first of a series of self-paced training webinars is now available on the HOS website. These training programs can be accessed at any time at the convenience of the user. The webinar entitled “Introduction to the Medicare Health Outcomes Survey (HOS)” is a basic training session that is appropriate for MAOs that are new to the HOS or those who want to obtain an overview of the kinds of information that the HOS provides about the health of beneficiaries. In addition, the training program provides some practical guidance about how to obtain HOS reports and data. To access the webinar, go to the Real World Uses section of the website at www.hosonline.org.

NATIONAL CANCER INSTITUTE (NCI) SEER-MHOS LINKED DATA SET

The Surveillance, Epidemiology, and End Results (SEER) and the Medicare Health Outcomes Survey (MHOS) linked data sets are now available. The linked data sets are surveillance databases that link data on cancer patients to patient-reported outcome measures and provide researchers with the potential to investigate the health status and Health-Related Quality of Life (HRQOL) of older adults enrolled in Medicare Advantage Organizations with and without a cancer diagnosis. The SEER-MHOS linked data sets available now include data collected during the years of 1998-2005. The HOS data are from baseline and follow up surveys for *Cohorts 1-6* collected during the same time period. Direct person identifiers (i.e., name, address, SSN, and the Medicare Health Insurance Claim number) and plan identifiers (i.e., contract number and plan name) are removed from the linked dataset. Researchers who are interested in using these linked data in their investigations may go to the following website for information: <http://outcomes.cancer.gov/surveys/seer-mhos>.

MEDICARE HEALTH OUTCOMES SURVEY 2.0

In 2006, CMS implemented the Medicare HOS 2.0 for MAOs. The HOS 2.0 evaluates the HRQOL of Medicare Advantage beneficiaries by measuring their physical and mental health status using the Veterans RAND 12-Item Health Survey (VR-12).⁴ The HOS contains questions about: socio-demographics, Activities of Daily Living (ADLs), chronic medical conditions, health symptoms, number of unhealthy days in the past 30 days, and depression risk, as well as height and weight categories used for calculation of Body Mass Index (BMI). Four Healthcare Effectiveness Data and Information Set (HEDIS[®])¹ measures are also included to evaluate management of urinary incontinence, physical activity, osteoporosis testing and fall risk management.^A

Use of the HOS 2.0 instrument reduces beneficiary burden while maintaining comparability of HOS results over time. The Medicare HOS 2.0 may be downloaded from the Survey Instrument

^A The 2010 NCQA HEDIS measure results for the combined HOS *Cohort 13 Baseline* and *Cohort 11 Follow Up* are provided in the *2010 Cohort 13 Baseline Report*, available for download from the Health Plan Management System (HPMS).

section of the HOS website (www.hosonline.org). Additionally, an updated glossary of terms related to the survey may be accessed from the Program Overview section of the HOS website.

FEATURED USES OF HOS DATA

MAOs may use HOS data in the following ways to target quality improvement strategies:

- Review health status results and HEDIS measures to identify opportunities for quality improvement activities. These include, but are not limited to:
 - Identifying the HEDIS measures that had substantially lower rates, when compared to state or national benchmarks.
 - Identifying the specific chronic conditions or negative health symptoms that were associated with low physical and mental health status.
 - Identifying the specific chronic conditions or negative health symptoms for which the MAO had disproportionately high prevalence, relative to state or national averages.
- Develop Chronic Care Improvement Programs (CCIPs) as appropriate to target enrollees with multiple chronic conditions.
- Prioritize and select areas for quality improvement activities.
- Set goals and performance objectives for the chosen quality improvement activities.
- Perform a root cause analysis and develop a quality improvement action plan. The action plan may include the adoption and dissemination of clinical practice guidelines for physicians, physician education through academic detailing, patient education and outreach through a website, newsletters, mailings, or telephone outreach and reminders.
- The use of electronic medical records facilitates additional quality improvement activities such as: timely point of care electronic reminders for preventive and follow up care, patient preference (i.e. encrypted e-mail, fax, telephone) reminders, dashboard prompts integrated with physician workflow, and the ability to provide timely patient-specific education resources.
- Measure and monitor the performance over time.
- Provide performance feedback to physicians.

Spotlight on Use of HOS Data to Address the Challenge of Treating Medicare Beneficiaries with Multiple Chronic Conditions and Limited Health Literacy

Background:

Health literacy is the ability of an individual to read, understand and use health care information to make decisions and follow treatment instructions. Older adults with health literacy problems may have difficulty navigating the health care system, finding doctors, and interacting with health care professionals. According to the American Medical Association, “poor health literacy is a stronger predictor of a person’s health than age, income, employment status, education level

and race.” Low health literacy has been linked to higher rates of hospitalization, use of emergency services, poorer health outcomes and higher health care costs. Several groups are particularly vulnerable to health literacy issues; the elderly (two thirds of U.S. adults age 60 and over have inadequate or marginal literacy skills), minority populations, low income populations (about half of the dual eligible Medicare/Medicaid recipients read below the fifth grade) and people with physical and or mental health conditions. In general, reading ability is approximately three to five grade levels below the last year of school completed and beneficiaries with a high school diploma, typically read at a seventh or eighth grade reading level.⁵

Studies of Medicare Managed Care beneficiaries showed inadequate health literacy was associated with poorer physical and mental health and lower use of preventive health services.^{6,7} Research has also shown that populations with low income and low education are less likely to be screened for cancer and more likely to be diagnosed at later stages than other populations.⁸ A study of Medicare beneficiaries stated that the strongest predictors of decreased physical health status were low income and educational level.⁹ Difficulties with health literacy exacerbate the challenges of working with an elderly population with multiple chronic conditions.

Demographic information collected as part of the HOS includes age, gender, race and ethnicity, income, educational attainment, and housing. Although the HOS does not collect information about health literacy directly, plans can use data from their membership to identify those at most risk for low health literacy: minorities, those with low income, low educational level, those with multiple chronic conditions and those on Medicaid. This profile can then be used by health plans to target those beneficiaries most likely to have low health literacy.

Demographic Information gathered for the *2008-2010 Cohort 11 Performance Measurement Report* indicates that approximately 15% of the HOS respondents are minorities, 35% have household incomes of less than \$20,000 (over 11% report household incomes of less than \$10,000), 14% are dual status Medicare/Medicaid, 40% report four or more chronic conditions, and almost 25% did not graduate from high school.

Quality Improvement Activities:

Because of the importance of health literacy in an increasingly “consumer-centric” health care system there has been a proliferation of organizations developing programs and tools to aid the health care provider. Some basics to consider are ensuring that the written instructions on prescription drug bottles, appointment slips, medical educational brochures, as well as doctor’s directions and consent forms are at an appropriate reading level. Guidelines for identifying signs of low health literacy include identifying patients who frequently say “I forgot my glasses”, or “My eyes are tired.” Use simple words and avoid jargon or acronyms, ask patients to repeat back to you important information, and give information in small chunks. See “Tips for Identifying and Addressing Health Literacy Issues created by the Joint Committee on National Health Education Standards” as a resource.¹⁰ A position paper of the American College of Physicians on “Racial and Ethnic Disparities in Health Care” cautions clinicians to use plain language, illustrations and sit face-to-face with the patient to improve communication.¹¹

The following are some of the resources available to providers:

1. The Health and Literacy Compendium at the University of Cincinnati contains resources to develop easy-to-read health education materials (<http://www.health.uc.edu/ahec/literacy.cfm>).
2. The Rhode Island Health Literacy Project makes available on the web a Health Literacy Toolkit – “Better Communication for Better Care” which is a tool for informing physicians, health care professionals and patient advocates about health literacy. It provides information on health literacy, advance directives and talking points (http://www.rihlp.org/pubs/Complete_toolkit_224pgs.pdf).
3. The United States Department of Health & Human Services has developed a “Quick Guide to Health Literacy and Older Adults.” The guide provides strategies and suggestions for communicating with older adults with health literacy problems (<http://www.health.gov/communication/literacy/olderadults/literacy.htm>).
4. Other material available includes, ‘Simply Put: A Guide for Creating Easy-to-Understand Materials’ (http://www.cdc.gov/healthmarketing/pdf/Simply_Put_082010.pdf) and “Helping Older Adults Search for Health Information Online: A toolkit for Trainers” (<http://nihseniorhealth.gov/toolkit/toolkit.html>).

NEED MORE HELP?

- Visit the Medicare HOS website for more information on the uses of the Medicare HOS data (www.hosonline.org). A section of the website entitled “Real World Uses of HOS Data” provides links to webinars that feature topics such as:
 - Introduction to the Medicare Health Outcomes Survey (HOS)
 - Overview of the Medicare Health Outcomes Survey and Strategies For Using HOS Data to Improve Quality
 - Using the Medicare HOS Data to Identify Strategies for Managing Chronic Conditions and to Identify At-Risk Beneficiaries
- MAOs may contact their local QIO for technical support and assistance with quality improvement activities.
- MAOs and QIOs are encouraged to contact the HOS Technical Support Team at Health Services Advisory Group at hos@azqio.sdps.org.

Executive Summary

The Centers for Medicare & Medicaid Services (CMS) is committed to monitoring the quality of care provided by MAOs. The Medicare Health Outcomes Survey (HOS) results continue to be an important part of CMS' quality improvement activities as current law authorizes Quality Improvement Organizations (QIOs) to ensure that medical care paid for under the Medicare program meets professionally recognized standards of health care. The goal of the Medicare HOS program is to gather valid and reliable health status data in Medicare managed care for use in quality improvement activities, public reporting, MAO accountability, and improving health outcomes. Section 722 of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 mandates the collection, analysis, and reporting of health outcomes information. This legislation also specifies that data collected on quality, outcomes, and beneficiary satisfaction to facilitate consumer choice and program administration must utilize the types of data collected prior to November 1, 2003.

Collected since 1998, the Medicare HOS is the only patient-reported outcomes measure in Medicare managed care, and therefore remains a critical part of assessing MAO quality. The HOS design is based on a randomly selected sample of individuals from each participating MAO, and measures their physical and mental health over a two-year period. The HOS instrument is an assessment of an MAO's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over the two-year interval. In addition, CMS includes the HOS results as one of the components of their performance assessment program.

The HOS Performance Measurement Report presents results for your MAO HXXXXA, based on data from the Medicare HOS *2008 Cohort 11 Baseline* and *2010 Cohort 11 Follow Up* surveys. The HOS performance measurement results describe change in health status over time for beneficiaries. The *2008-2010 Cohort 11* Performance Measurement respondent sample represents the national sample of 96,106 beneficiaries that responded to both the baseline and follow up surveys from 330 MAOs, and yielded a follow up response rate of 84.4%. Please refer to the Distribution of the Sample and Response Rates section for more details.

Also provided in this report is information to help you gain insight into how your MAO's demographic and other health characteristics vary over the two-year period. These include: a demographic profile; information on general and comparative health status; depression; chronic medical conditions; limitations in activities of daily living (ADLs); Healthy Days Measures; BMI; arthritis pain; vision; and hearing; as well as frequency distributions for the *2010 Cohort 11 Follow Up* survey fields.

The National Trends subsection below provides summaries of the performance measurement results, as well as demographics and health characteristics for the performance measurement respondent sample. For more details about your MAO's results, demographics, and health characteristics, please refer to the Performance Measurement Results section, and refer to Appendix 2 for the response frequencies of follow up survey fields.

NATIONAL TRENDS

Performance Measurement Results

The HOS national average is based on all MAOs that participated in performance measurement. Outliers are those MAOs that performed significantly better or significantly worse when compared to the national average. MAOs may be outliers on a measure of physical health or on a measure of mental health. An overall measure of change in physical health is calculated combining death status and the physical component summary (PCS) score. Change in mental health is calculated with the mental component summary (MCS) score.

An assessment of the case mix adjusted results for mortality and PCS reveals that at the national level MAOs differed significantly on both the mortality and PCS measures. Examination of the summary findings for physical health reveals 23 outlier MAOs at the national level. Eleven of the outlier MAOs were designated as “better than expected” and 12 of the outlier MAOs were designated as “worse than expected” compared to the national average. An assessment of the case mix adjusted results for MCS reveals that at the national level MAOs differed significantly on this measure also. Examination of the summary findings for mental health reveals 24 outlier MAOs at the national level. Eleven of the outlier MAOs were designated as “better than expected” and 13 of the outlier MAOs were designated as “worse than expected” compared to the national average.

The physical and mental health results for your MAO HXXXXA over the last three cohorts are provided in the Trend in Performance Measurement Physical and Mental Health Results subsection. Additional details, including results for your MAO, each MAO in the State, the State and the HOS Total, are provided in the *2008-2010 Cohort 11 Performance Measurement Results* section.

Demographics

The largest percentages of respondents in the HOS Total sample were: between 70 to 79 years of age, female, White, married, high school graduates, had annual household incomes of less than \$30,000, and were not Medicaid recipients.

General Health and Comparative Health

The majority of respondents reported their *general health* as “Excellent”, “Very Good”, or “Good”; however, those whose *general health* was “Fair” or “Poor” increased from 26% at baseline to 29% at follow up. Similarly, the majority of respondents reported that their *physical health compared to one year ago* and *mental health compared to one year ago* were “Much Better”, “Slightly Better”, or “About the Same.” About 24% of respondents at baseline and 29% at follow up, an increase of 5 percentage points, reported that their *physical health compared to one year ago* was “Slightly Worse” or “Much Worse”, while 11% at baseline and 14% at follow up, an increase of 3 percentage points, reported that their *mental health compared to one year ago* was “Slightly Worse” or “Much Worse.”

Depression

Approximately 31% of respondents at baseline and 32% at follow up had a positive depression screen, representing relatively stable results in this measure over time.

Chronic Medical Conditions

Along with consistent increases in the prevalence of each chronic medical condition at follow up, the mean number of chronic conditions also increased between baseline and follow up. For example, 37% of respondents reported having four or more chronic medical conditions at baseline, while 40% reported having four or more conditions at follow up, an increase of 3 percentage points. The most prevalent chronic medical condition in the HOS continues to be hypertension (66% at baseline, 68% at follow up). Arthritis of the hip/knee (42% at baseline, 44% at follow up) and arthritis of the hand/wrist (38% at baseline, 39% at follow up) were second and third, respectively. The fourth most prevalent condition was diabetes (23% at baseline, 26% at follow up).

Activities of Daily Living

As many as 67% of respondents had no impairments in any of the six activities of daily living (ADLs) that were assessed at baseline; however, this percentage was lower at follow up with 62% reporting no impairments. The largest change was in the category of three or more ADL impairments, with approximately 12% at baseline compared to 15% at follow up, representing an increase of 3 percentage points in this category. The greatest single impairment involved walking, for which 29% of HOS respondents at baseline and 34% at follow up reported difficulty or inability to walk, an increase of 5 percentage points between the two year measures.

Healthy Days Measures

Three Healthy Days Measures were assessed for the HOS. Slightly more than 23% of respondents at both baseline and follow up reported 1-13 *physically unhealthy days* in the previous 30 days. Approximately 19% at baseline and follow up reported 1-13 *mentally unhealthy days* in the previous 30 days, and 14% at baseline and follow up reported 1-13 days with *activity limitations* in the previous 30 days due to poor physical or mental health.

Clinical Measures

Shifts in the BMI categories were generally slight, with small changes in the extreme categories. For example, in the underweight category there was a small increase from 5% to 6% between baseline and follow up. The combined categories of obese and morbid obesity exhibited a slight decrease, with approximately 26% of respondents at baseline compared to 25% at follow up having a BMI of 30 or more.

There was a 2 percentage point increase in those reporting moderate or severe arthritis pain, with about 35% at baseline compared to 37% at follow up for those combined categories. The percentage of respondents who reported vision or hearing problems remained relatively stable over the two-year period. Approximately 6% of respondents at baseline and 7% at follow up reported vision problems, while nearly 13% at baseline and 15% at follow up reported hearing problems.

TREND IN PERFORMANCE MEASUREMENT PHYSICAL AND MENTAL HEALTH RESULTS

The two tables below present the performance measurement results for your MAO for the current cohort. Results for the past two cohorts, when available, are also shown for comparison in both tables.

For Cohort 11, in terms of physical health, your MAO performed worse than expected when compared to the HOS national average.

| TREND IN PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS OVER THREE COHORTS FOR MAO HXXXXA | | | | |
|---|-----------------|---------------|----------------|-----------------------|
| | PERCENT BETTER* | PERCENT SAME* | PERCENT WORSE* | PERFORMANCE RESULTS** |
| 2008-2010 Cohort 11 | 15.1% | 49.9% | 35.0% | ↓ |
| 2007-2009 Cohort 10 | 19.0% | 47.3% | 33.7% | ↔ |
| 2006-2008 Cohort 9 | 17.2% | 50.6% | 32.2% | ↔ |

For Cohort 11, in terms of mental health, your MAO performed as expected when compared to the HOS national average.

| TREND IN MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS OVER THREE COHORTS FOR MAO HXXXXA | | | | |
|---|-----------------|---------------|----------------|-----------------------|
| | PERCENT BETTER* | PERCENT SAME* | PERCENT WORSE* | PERFORMANCE RESULTS** |
| 2008-2010 Cohort 11 | 19.3% | 58.4% | 22.2% | ↔ |
| 2007-2009 Cohort 10 | 18.6% | 58.3% | 23.1% | ↔ |
| 2006-2008 Cohort 9 | 18.2% | 59.6% | 22.2% | ↔ |

NA indicates that the MAO did not have results for this cohort.

* The percent better, same, or worse refers to beneficiary health status within an MAO.

** The statistical significance of each performance result for the MAO is indicated by one of the following symbols:

▲ MAO performed significantly better than expected (higher than the national average)

▼ MAO performed significantly worse than expected (lower than the national average)

↔ MAO performed as expected (the same as the national average)

Distribution of the Sample and Response Rates

The *2008 Cohort 11 Baseline* Medicare HOS included a random sample of 414,655 beneficiaries, including both the aged and disabled, from 361 MAOs. Of the 414,655 individuals sampled, 56.4% (233,945) completed the baseline survey. Of the 233,945 respondents, 202,382 were seniors (age 65 or older) who returned a completed survey. A completed survey was defined as one that could be used to calculate a PCS or MCS score. During the two years between the *2008 Cohort 11 Baseline* survey and the *2010 Cohort 11 Follow Up* survey, a number of MAOs discontinued offering managed care to Medicare beneficiaries, or consolidated with other MAOs. As a result of these changes, 330 reporting units (MAOs), comprising 187,530 baseline respondents, remained in the HOS. For purposes of MAO comparisons, this group of 187,530 beneficiaries comprises the *Cohort 11 Performance Measurement analytic sample*.

At the time of follow up, 114,733 beneficiaries were seniors age 65 or older who had completed a baseline survey and were still alive and enrolled in their original MAO. These beneficiaries are referred to as the *Cohort 11 Performance Measurement eligible sample*. A total of 96,106 beneficiaries from the eligible sample returned a follow up survey that could be used to calculate a PCS or MCS score and comprise the *Cohort 11 Performance Measurement respondent sample*.

The performance measurement results are based on the analytic sample of 187,530 and not the entire population sampled at baseline and follow up. At the national level, 14,487 beneficiaries died between baseline and the two-year follow up. Another 58,310 beneficiaries voluntarily disenrolled from their MAOs during the same two-year period. Of the 114,733 individuals eligible for follow up, 96,106 beneficiaries responded; 17,726 beneficiaries did not respond to the follow up survey; and 901 beneficiaries were determined to be ineligible members at follow up.^B A PCS or MCS score could be calculated for the 96,106 respondents, yielding a follow up response rate of 84.4%.

Focusing on the 330 reporting units (MAOs) at follow up, the average number of respondents per MAO was 291, with a range of 1 to 659 respondents. Fifty percent of the MAOs (the interquartile range) had between 155 and 406 respondents. Ten percent of the MAOs had 502 or more respondents, and 10% had 94 or fewer respondents. Based on the analytic criteria, the mean MAO level response rate at follow up was 82.9%, with a range of 53.1% to 100.0%. Fifty percent of the MAOs had a response rate between 80.6% and 86.7%. Ten percent of the MAOs had a response rate of 88.6% or higher, and 10% had a response rate of 75.6% or lower.

Please note that if an MAO had a small number of respondents that participated in the performance measurement, **caution** should be exercised when examining the results.

^B Ineligible members at *follow up* met one of the following criteria: not enrolled in the MAO; had an incorrect address and phone number; or had a language barrier.

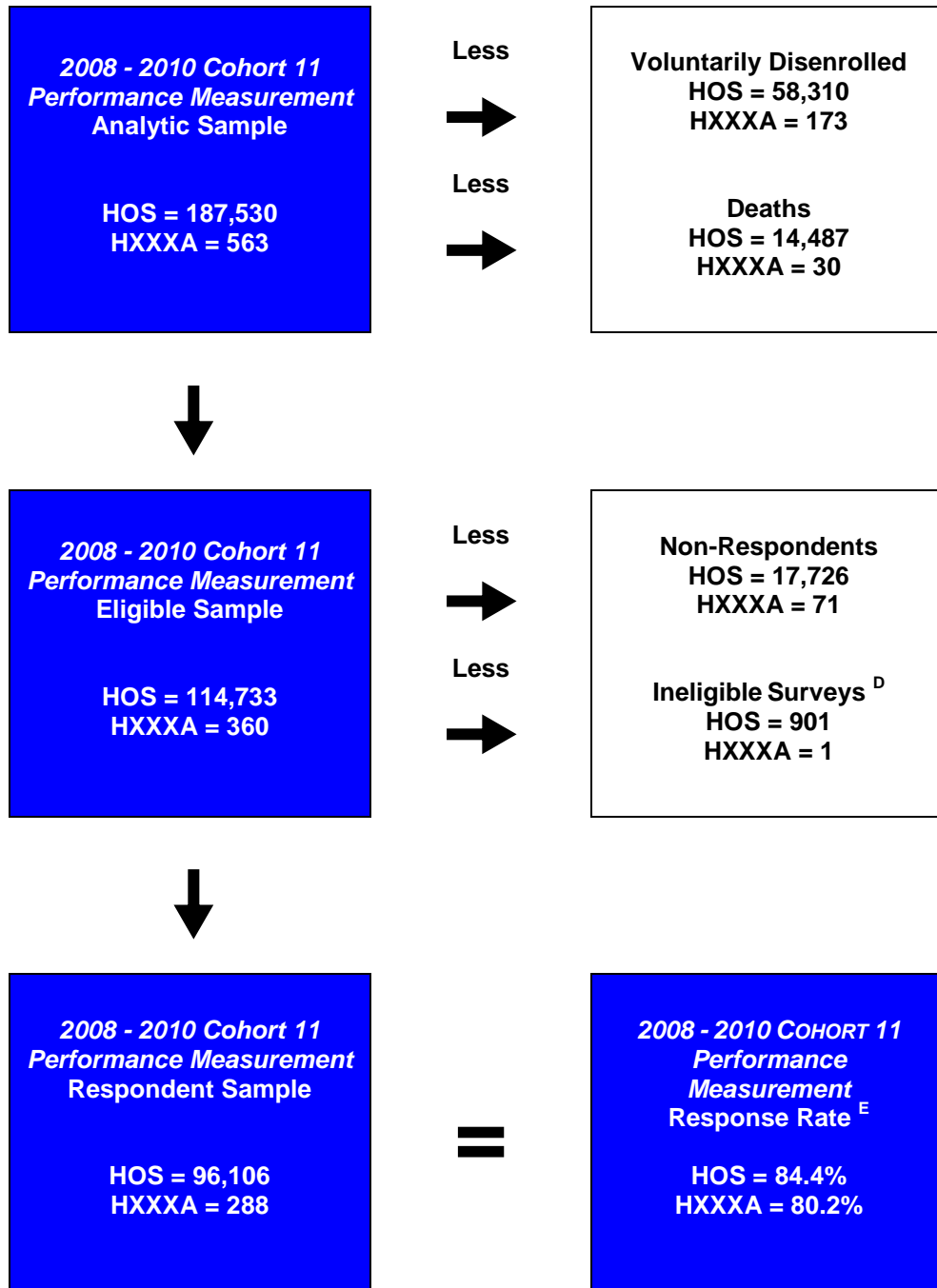
MAO HXXXXA

The original baseline sample size for your MAO HXXXXA was 1,200; however, 637 beneficiaries were not included in the analytic sample because they did not complete the baseline survey, were not seniors, or were determined to be ineligible members at baseline.^C Therefore, your MAO's analytic sample size is 563. Of the 563 beneficiaries in your MAO's analytic sample, 173 voluntarily disenrolled from your MAO and 30 died between baseline and follow up. Of the 360 beneficiaries sent a follow up survey, one was determined to be ineligible. Of the remaining 359 beneficiaries, there were 71 who did not complete the survey and 288 who returned a completed follow up survey. This represented an overall follow up response rate of 80.2% for your MAO, as compared to the HOS follow up response rate of 84.4%.

On the following page, Figure 1 presents the Distribution of the Performance Measurement Sample and Response Rates for the HOS Total, as well as for your MAO HXXXXA.

^C Ineligible members at *baseline* met one of the following criteria: deceased; not enrolled in the MAO; had an incorrect address and phone number; or had a language barrier.

Figure 1: Distribution of the Performance Measurement Sample and Response Rates



^D Ineligible at follow up includes those not enrolled in MAO, incorrect contact information, or language barrier.

^E Response Rate = [Cohort 11 Performance Measurement Respondent Sample / (Eligible Sample - Ineligible Surveys)] x 100%.

Performance Measurement Results

The *2008-2010 Cohort 11* HOS performance measurement results describe change in health status over time for beneficiaries in your MAO HXXXXA. Health outcomes are assessed for a randomly selected set of members from each participating MAO over a two-year interval, with a baseline measure and a two-year follow up. In general, functional health status as measured by the PCS score is expected to decline over time in older age groups, while mental health status as measured by the MCS score is not. The presence of one or more chronic medical conditions is associated with declines in both scores.¹²

To account for baseline differences in the case-mix of MAO members, demographic, health, and survey design variables are used in risk-adjustment, which provides equitable comparisons of health outcomes across MAOs.² Risk-adjustment is a statistical technique that adjusts for variations in patient outcomes that stem from differences in patient characteristics across health care organizations. The results of the risk-adjusted outcomes are aggregated across respondents for each MAO, yielding the MAO level performance measurement results. These results are not necessarily an indication of the outcomes a particular respondent may experience in the future. Additionally, MAO performance may change over time, and individual outcomes depend on individual medical care and personal circumstances.

The performance measurement analysis compares physical and mental health outcomes in terms of the percentages of beneficiaries who are better, the same, or worse than expected at the two-year follow up in comparison to the national average. The primary outcomes are death, change in physical health as measured by PCS scores, and change in mental health as measured by MCS scores. Death and PCS scores are combined into one overall measure of change in physical health. There are six main categories of actual health outcomes used in the performance measurement analysis:

1. Alive and physical health better
2. Alive and physical health the same
3. Dead or physical health worse
4. Mental health better
5. Mental health the same
6. Mental health worse

Beneficiaries who were age 65 and older, who completed the HOS at baseline, and had a calculable PCS or MCS score at baseline and follow up were included in the analysis of performance measurement. Beneficiary level results were aggregated to derive the MAO and HOS national percentage values.

The HOS national average is based on all MAOs that participated in performance measurement. Outliers are those MAOs that performed significantly better or significantly worse when compared to the national average. MAOs may be outliers on a measure of physical health or on a measure of mental health. For example, an MAO that differed by no more than would be

expected by chance over the two-year period, based upon the comparison of that MAO's case-mix adjusted results with the HOS national average, performed the same as expected. An MAO that had a significantly *higher* proportion of beneficiaries whose health remained stable or improved (PCS or MCS same or better) over the two-year period, based upon the comparison of that MAO's case-mix adjusted results with the HOS national average, is a positive outlier. An MAO that had a significantly *lower* proportion of beneficiaries whose health improved or remained stable over the two-year period, based upon the comparison of that MAO's case-mix adjusted results with the HOS national average, is a negative outlier. The classification of MAOs presented in this report is based on comparisons of each MAO with the national average. For detailed information on calculation of performance measurement results, see Appendix 1.

PHYSICAL HEALTH

An assessment of the case mix adjusted results for mortality and PCS reveals that at the national level MAOs differed significantly on both the mortality and PCS measures. Examination of the summary findings for physical health reveals 23 outlier MAOs at the national level. Eleven of the outlier MAOs were designated as "better than expected" and 12 of the outlier MAOs were designated as "worse than expected" compared to the national average.

Performance measurement results for physical health combine risk-adjusted two-year mortality rates and changes in PCS scores. A very high PCS score, on the high end of the 0-100 scale, indicates no physical limitations, disabilities, or decline in well-being; high energy level; and a rating of health as "excellent." A very low PCS score, on the low end of the 0-100 scale, indicates limitations in self care, physical, social, and role activities; severe bodily pain; frequent tiredness; and a rating of health as "poor."

On the next page, Table 1 depicts the Physical Health Performance Measurement results for your MAO HXXXXA, each MAO in the State, the State and the HOS Total. For the HOS Total respondent sample, 17.2% of beneficiaries were better in terms of physical health, 49.5% remained the same, and 33.3% were worse at follow up.

In terms of physical health, your MAO performed worse than expected when compared to the HOS national average.

| TABLE 1 2008-2010 COHORT 11 PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL MAOS IN THE STATE, STATEXX, AND HOS TOTAL | | | | |
|--|------------------------|----------------------|-----------------------|------------------------------|
| | PERCENT BETTER* | PERCENT SAME* | PERCENT WORSE* | PERFORMANCE RESULTS** |
| HXXXXA | 15.1% | 49.9% | 35.0% | ↓ |
| HXXXXB | 16.9% | 48.0% | 35.0% | ↔ |
| HXXXXC | 17.3% | 48.8% | 33.9% | ↔ |
| HXXXXD | 16.5% | 49.3% | 34.3% | ↔ |
| HXXXXE | 17.1% | 49.0% | 33.9% | ↔ |
| StateXX | 17.1% | 49.3% | 33.5% | |
| HOS Total | 17.2% | 49.5% | 33.3% | |

* The percent better, same, or worse refers to beneficiary health status within an MAO.

** The statistical significance of the performance result for the MAO is indicated by one of the following symbols:

- ▲ MAO performed significantly better than expected (higher than the national average)
- ▼ MAO performed significantly worse than expected (lower than the national average)
- ↔ MAO performed as expected (the same as the national average)

MENTAL HEALTH

An assessment of the case mix adjusted results for MCS reveals that at the national level MAOs differed significantly on this measure. Examination of the summary findings for mental health reveals 24 outlier MAOs at the national level. Eleven of the outlier MAOs were designated as “better than expected” and 13 of the outlier MAOs were designated as “worse than expected” compared to the national average.

Performance measurement results for mental health are based on risk-adjusted two-year changes in MCS scores. A very high MCS score, on the high end of the 0-100 scale, indicates frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems. A very low MCS score, on the low end of the 0-100 scale, indicates frequent psychological distress, and social and role disability due to emotional problems.

On the next page, Table 2 depicts the Mental Health Performance Measurement results for your MAO HXXXXA, each MAO in the State, the State and the HOS Total. For the HOS Total respondent sample, 18.1% of beneficiaries were better in terms of mental health, 59.8% remained the same, and 22.0% were worse at follow up.

In terms of mental health, your MAO performed as expected when compared to the HOS national average.

| TABLE 2 2008-2010 COHORT 11 MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL MAOS IN THE STATE, STATEXX, AND HOS TOTAL | | | | |
|--|------------------------|----------------------|-----------------------|------------------------------|
| | PERCENT BETTER* | PERCENT SAME* | PERCENT WORSE* | PERFORMANCE RESULTS** |
| HXXXXA | 19.3% | 58.4% | 22.2% | ↔ |
| HXXXXB | 18.6% | 58.8% | 22.5% | ↓ |
| HXXXXC | 18.5% | 61.4% | 20.1% | ↔ |
| HXXXXD | 17.7% | 61.0% | 21.3% | ↔ |
| HXXXXE | 17.5% | 59.3% | 23.2% | ↔ |
| StateXX | 18.1% | 60.2% | 21.7% | |
| HOS Total | 18.1% | 59.8% | 22.0% | |

* The percent better, same, or worse refers to beneficiary health status within an MAO.

** The statistical significance of the performance result for the MAO is indicated by one of the following symbols:

- ↑ MAO performed significantly better than expected (higher than the national average)
- ↓ MAO performed significantly worse than expected (lower than the national average)
- ↔ MAO performed as expected (the same as the national average)

COHORT 11 BASELINE AND FOLLOW UP DEMOGRAPHICS

Table 3 presents the distribution of beneficiaries' age, gender, race, marital status, educational level, annual household income, and Medicaid status at baseline and follow up for your MAO and the HOS Total respondent sample. The largest percentages of HOS respondents at baseline and follow up were: between 70 and 79 years of age, female, White, married, high school graduates, had annual household incomes less than \$30,000, and were not Medicaid recipients.

| TABLE 3 | | | | |
|--|-----------------|------------------|------------------|------------------|
| 2008-2010 COHORT 11 PERFORMANCE MEASUREMENT | | | | |
| DEMOGRAPHICS FOR MAO HXXXA AND HOS TOTAL | | | | |
| AT BASELINE AND FOLLOW UP | | | | |
| | HXXXA | | HOS Total | |
| | Baseline | Follow Up | Baseline | Follow Up |
| Age | (N=288) | (N=288) | (N=96,106) | (N=96,106) |
| 65-69 | 29.2% | 17.7% | 25.0% | 12.6% |
| 70-74 | 26.4% | 26.7% | 27.8% | 29.4% |
| 75-79 | 21.5% | 25.7% | 22.8% | 25.4% |
| 80-84 | 13.9% | 16.0% | 15.2% | 18.4% |
| ≥85 | 9.0% | 13.9% | 9.2% | 14.3% |
| Gender | (N=288) | (N=288) | (N=96,106) | (N=96,106) |
| Male | 44.1% | 44.1% | 40.9% | 40.9% |
| Female | 55.9% | 55.9% | 59.1% | 59.1% |
| Race | (N=288) | (N=288) | (N=96,106) | (N=96,106) |
| White | 84.7% | 84.7% | 85.3% | 85.3% |
| Black | 8.0% | 8.0% | 8.1% | 8.1% |
| Other/Unknown | 7.3% | 7.3% | 6.7% | 6.7% |
| Marital Status | (N=284) | (N=281) | (N=94,493) | (N=93,310) |
| Married | 54.6% | 52.3% | 56.6% | 54.2% |
| Widowed | 29.9% | 32.7% | 27.5% | 30.2% |
| Divorced or Separated | 12.7% | 12.1% | 12.3% | 12.1% |
| Never Married | 2.8% | 2.8% | 3.6% | 3.5% |
| Education | (N=282) | (N=278) | (N=94,115) | (N=92,830) |
| Did Not Graduate HS | 22.0% | 21.9% | 24.9% | 24.8% |
| High School Graduate | 37.2% | 36.0% | 36.8% | 36.8% |
| Some College | 20.9% | 22.7% | 21.7% | 21.7% |
| 4 Year Degree or Beyond | 19.9% | 19.4% | 16.6% | 16.7% |
| Annual Household Income | (N=262) | (N=259) | (N=86,964) | (N=85,425) |
| Less than \$10,000 | 8.4% | 8.5% | 12.0% | 11.6% |
| \$10,000 - \$19,999 | 19.8% | 24.7% | 23.5% | 23.6% |
| \$20,000 - \$29,999 | 21.0% | 19.7% | 18.5% | 19.1% |
| \$30,000 - \$49,999 | 21.4% | 18.5% | 20.8% | 21.3% |
| \$50,000 or More | 18.3% | 18.5% | 16.0% | 14.1% |
| Don't Know | 11.1% | 10.0% | 9.2% | 10.3% |
| Medicaid Status | (N=288) | (N=288) | (N=96,106) | (N=96,106) |
| Medicaid | 13.2% | 13.5% | 13.5% | 14.0% |
| Non-Medicaid | 86.8% | 86.5% | 86.5% | 86.0% |

GENERAL HEALTH AND COMPARATIVE HEALTH

Figure 2 presents the percentages of beneficiaries in MAO HXXXA and the HOS Total respondent sample at baseline and follow up who reported their *general health* status to be “Excellent”, “Very Good”, “Good”, “Fair”, or “Poor.” The majority of HOS respondents reported their *general health* as “Excellent”, “Very Good”, or “Good”; however, there was an increase of 3 percentage points over time for those whose *general health* was “Fair” or “Poor”, with 26% at baseline and 29% at follow up reporting in these categories.

Figure 2: Cohort 11 Performance Measurement General Health Status for MAO HXXXA and HOS Total at Baseline and Follow Up

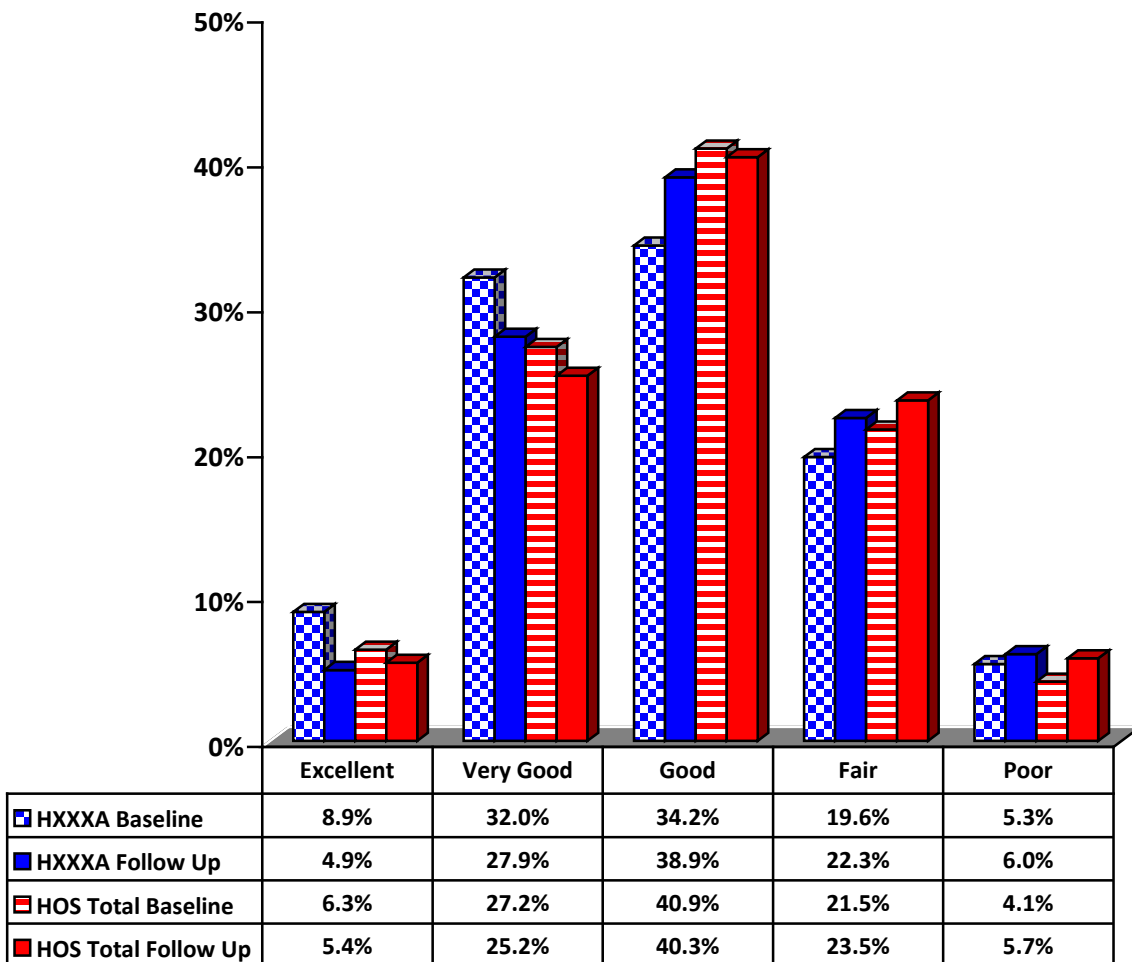


Figure 3 depicts the distribution of beneficiary responses for your MAO and the HOS Total respondent sample that measure *physical health compared to one year ago* at baseline and follow up. Responses to the comparative health question are: “Much Better”, “Slightly Better”, “About the Same”, “Slightly Worse”, and “Much Worse.” The majority of respondents reported that their *physical health compared to one year ago* was “Much Better”, “Slightly Better”, or “About the Same.” About 24% of beneficiaries in the HOS at baseline and 29% at follow up reported that their *physical health compared to one year ago* was “Slightly Worse” or “Much Worse”, an increase of 5 percentage points over time.

Figure 3: Cohort 11 Performance Measurement Physical Health Compared to One Year Ago for MAO HXXXA and HOS Total at Baseline and Follow Up

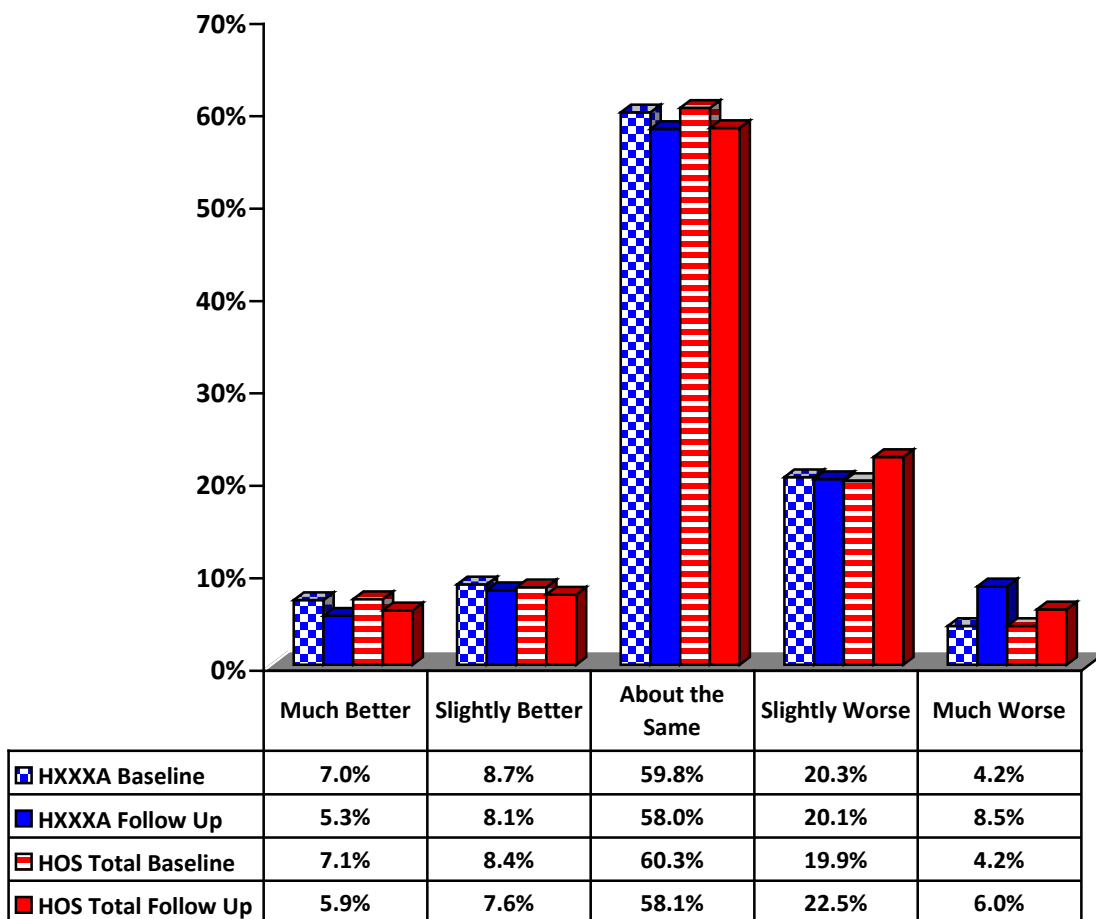
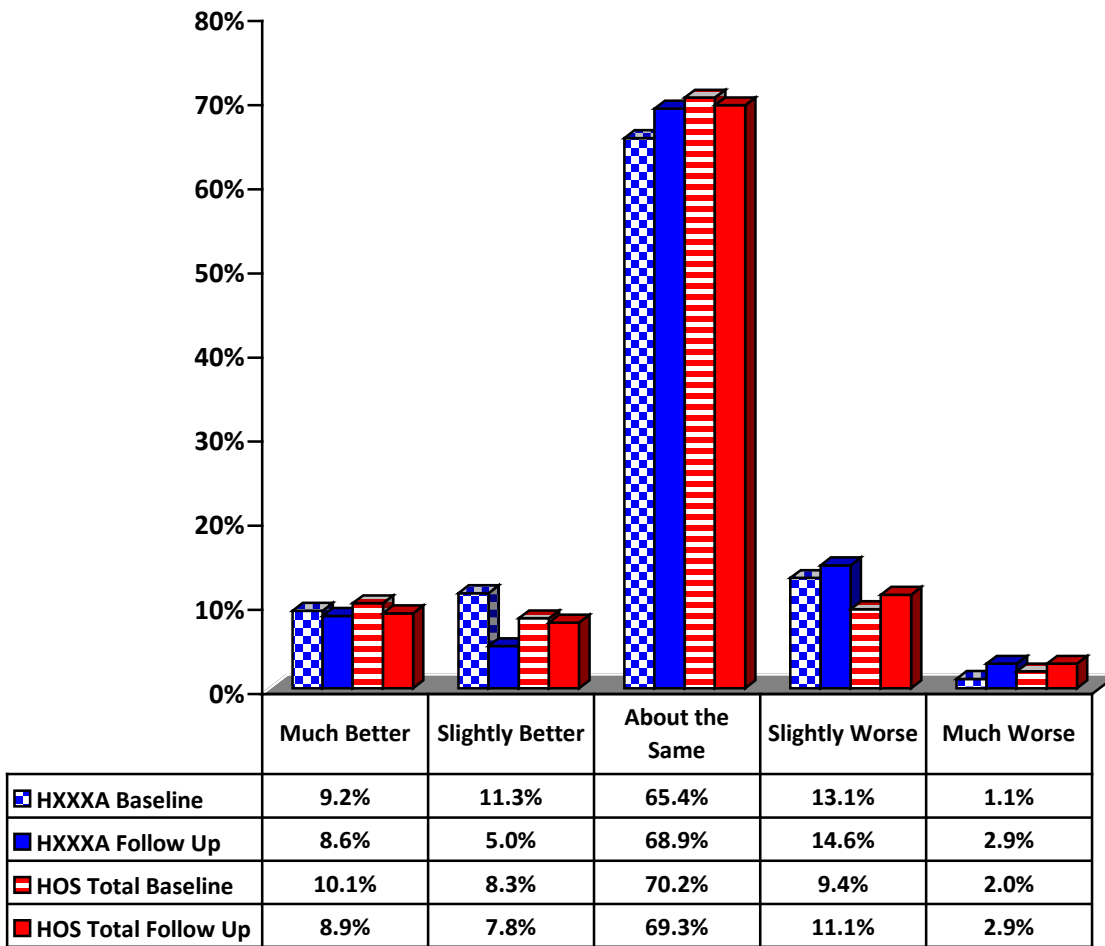


Figure 4 depicts the distribution of beneficiary responses for your MAO and the HOS Total respondent sample that measure *mental health compared to one year ago* at baseline and follow up. Responses are: “Much Better”, “Slightly Better”, “About the Same”, “Slightly Worse”, and “Much Worse.” The majority of respondents reported that their *mental health compared to one year ago* was “Much Better”, “Slightly Better”, or “About the Same.” About 11% of beneficiaries in the HOS at baseline and 14% at follow up reported that their *mental health compared to one year ago* was “Slightly Worse” or “Much Worse.”

Figure 4: Cohort 11 Performance Measurement Mental Health Compared to One Year Ago for MAO HXXXA and HOS Total at Baseline and Follow Up



DEPRESSION

Depression is undetected and under-diagnosed in the majority of the elderly Medicare population, and is a significant health problem that has been linked to poor health outcomes.^{13, 14} Rates of depression are higher in females, 40-59 year olds, non-Hispanic blacks, and those living below the poverty level than their respective counterparts.¹⁵ Additionally, depression is associated with other psychological dysfunction, as well as the presence of common chronic medical conditions, such as diabetes.^{16, 17} In a recent study, patients with type 2 diabetes were 52% more likely to develop major depressive disorder than the general population.¹⁸ Depression is also associated with increased health care costs, disability, functional impairment, and mortality.¹⁸

Individuals with a positive depression screen may be at risk for depressive disorders. For reports prior to the 2008 HOS, three questions from the survey were utilized to create the screen. Beginning with the 2008 HOS, a new question (Q39) has been added as part of the screening for depression risk. For this report a Medicare beneficiary is considered to have a positive depression screen when he or she answers “Yes” to *any* of the four depression questions (Questions 36, 37, 38 or 39) summarized in Table 4 below.

Table 4 depicts the frequency of positive responses to each of four depression screening questions and for the positive depression screen for MAO HXXXXA and the HOS Total respondent sample at baseline and follow up. The results were relatively stable over time with 31.2% of HOS respondents at baseline and 32.1% at follow up who had a positive depression screen.

| TABLE 4 | | | | |
|---|----------------------|-----------------------|----------------------|-----------------------|
| 2008-2010 COHORT 11 PERFORMANCE MEASUREMENT | | | | |
| FREQUENCY OF POSITIVE DEPRESSION SCREEN RESPONSES | | | | |
| FOR MAO HXXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP | | | | |
| Depression Screening Questions | HXXXXA | | HOS Total | |
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| Depressed at least one or two days in the past week | 55 (21.1%) | 63 (23.1%) | 19,839 (22.5%) | 21,335 (24.3%) |
| Two weeks in the past year feeling sad, blue or depressed | 60 (21.1%) | 53 (18.7%) | 18,889 (19.9%) | 19,527 (20.9%) |
| Depressed or sad much of the time in the past year | 32 (11.3%) | 32 (11.5%) | 11,045 (11.6%) | 11,795 (12.6%) |
| Two years or more in life feeling depressed or sad most days | 48 (16.9%) | 39 (13.9%) | 12,840 (13.6%) | 12,598 (13.6%) |
| Positive Depression Screen* | 89 (31.0%) | 90 (31.8%) | 29,821 (31.2%) | 30,233 (32.1%) |

* A positive depression screen is defined as answering “Yes” to *any* of the four depression questions listed.

CHRONIC MEDICAL CONDITIONS

The presence of chronic medical conditions is associated with a lower quality of life and higher health care costs.¹⁹ Research on chronic conditions in the Medicare managed care elderly found that arthritis of the hip/knee contributed to a greater decline in beneficiaries' physical health, compared to other chronic conditions in the HOS.²⁰ Increasing age is a risk factor for the development of type 2 Diabetes Mellitus (DM), as well as for the development of complications of DM.²¹ In addition, cardiovascular disease (CVD) is the leading cause of morbidity and mortality among diabetics.²²

The presence of many common chronic medical conditions is assessed in the HOS using the question: "Has a doctor ever told you that you had <the specified condition>?" Beneficiaries who answered "Yes" were counted as having the condition.

Table 5 shows the frequencies for 14 chronic medical conditions for MAO HXXXXA and the HOS Total respondent sample. Hypertension continues to be the most frequently reported condition in the HOS (66% at baseline, 68% at follow up). Arthritis of the hip/knee (42% at baseline, 44% at follow up) and arthritis of the hand/wrist (38% at baseline, 39% at follow up) were second and third, respectively. The fourth most prevalent condition was diabetes (23% at baseline, 26% at follow up).

TABLE 5
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
PREVALENCE OF CHRONIC MEDICAL CONDITIONS
FOR MAO HXXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP

| Medical Condition | HXXXXA | | HOS Total | |
|---------------------------------|------------------|-------------------|------------------|-------------------|
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| Hypertension | 198 (68.8%) | 199 (70.3%) | 62,839 (65.8%) | 63,849 (67.9%) |
| Arthritis - Hip or Knee | 118 (41.1%) | 124 (44.6%) | 39,540 (41.7%) | 40,741 (43.6%) |
| Arthritis - Hand or Wrist | 100 (35.5%) | 102 (36.7%) | 35,850 (37.9%) | 35,954 (38.6%) |
| Diabetes | 66 (23.1%) | 76 (27.0%) | 22,265 (23.4%) | 23,895 (25.5%) |
| Other Heart Conditions | 73 (25.8%) | 85 (30.0%) | 20,883 (22.0%) | 21,980 (23.6%) |
| Osteoporosis | 54 (19.0%) | 65 (23.2%) | 19,982 (21.1%) | 21,496 (23.1%) |
| Sciatica | 59 (20.6%) | 62 (22.0%) | 20,608 (21.8%) | 20,930 (22.5%) |
| Any Cancer (except skin cancer) | 42 (14.6%) | 51 (18.2%) | 14,317 (15.0%) | 15,894 (17.0%) |
| Pulmonary Disease | 34 (12.0%) | 43 (15.3%) | 13,475 (14.2%) | 14,802 (15.8%) |
| Coronary Artery Disease | 52 (18.1%) | 52 (18.9%) | 13,757 (14.6%) | 14,416 (15.6%) |
| Myocardial Infarction | 35 (12.3%) | 35 (12.4%) | 9,524 (10.0%) | 10,131 (10.9%) |
| Congestive Heart Failure | 26 (9.1%) | 29 (10.3%) | 7,428 (7.9%) | 9,015 (9.7%) |
| Stroke | 28 (9.8%) | 37 (13.0%) | 7,337 (7.7%) | 8,503 (9.1%) |
| Gastrointestinal Disease | 15 (5.3%) | 12 (4.3%) | 4,552 (4.8%) | 4,620 (5.0%) |

Table 6 presents the frequencies of beneficiaries who reported none, one, two, three, or four or more chronic medical conditions at baseline and follow up for your MAO and the HOS Total respondent sample. The overall trend indicates an increase in the number of conditions reported by beneficiaries, with approximately 37% of the HOS respondents at baseline and 40% at follow up reporting four or more chronic medical conditions.

TABLE 6
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
NUMBER OF CHRONIC MEDICAL CONDITIONS
FOR MAO HXXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP

| Number of Chronic Medical Conditions | HXXXXA | | HOS Total | |
|--------------------------------------|---------------|----------------|----------------|----------------|
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| None | 28 (9.7%) | 21 (7.4%) | 8,190 (8.5%) | 7,041 (7.4%) |
| 1 Condition | 45 (15.6%) | 41 (14.4%) | 16,080 (16.7%) | 14,221 (15.0%) |
| 2 Conditions | 57 (19.8%) | 50 (17.5%) | 19,085 (19.9%) | 18,145 (19.2%) |
| 3 Conditions | 48 (16.7%) | 53 (18.6%) | 17,597 (18.3%) | 17,358 (18.3%) |
| 4 or More Conditions | 110 (38.2%) | 120 (42.1%) | 35,150 (36.6%) | 37,952 (40.1%) |

As shown in Table 7, the means and standard deviations (SD) for unadjusted PCS and MCS scores at follow up are presented by the number of chronic medical conditions reported for your MAO and the HOS Total respondent sample. The mean PCS and MCS scores decreased for the HOS respondents as the number of chronic conditions increased. Beneficiaries with four or more chronic conditions had the lowest PCS and MCS scores.

TABLE 7
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
MEAN UNADJUSTED PCS AND MCS SCORES AT FOLLOW UP
BY NUMBER OF CHRONIC MEDICAL CONDITIONS FOR MAO HXXXXA AND HOS TOTAL

| Number of Chronic Medical Conditions* | Mean (SD) Unadjusted PCS | | Mean (SD) Unadjusted MCS | |
|---------------------------------------|--------------------------|-------------|--------------------------|-------------|
| | HXXXXA | HOS Total | HXXXXA | HOS Total |
| None | 50.7 (8.4) | 48.6 (8.8) | 55.0 (7.8) | 55.7 (8.3) |
| 1 Condition | 47.6 (8.3) | 45.9 (9.6) | 55.8 (6.5) | 55.0 (8.9) |
| 2 Conditions | 44.6 (8.9) | 42.7 (10.5) | 55.3 (8.1) | 54.1 (9.5) |
| 3 Conditions | 38.7 (10.7) | 39.2 (11.0) | 54.4 (9.1) | 52.8 (10.3) |
| 4 or More Conditions | 32.4 (11.4) | 32.4 (11.1) | 47.2 (12.0) | 48.9 (12.1) |

*If no members reported for a category, the result is *not applicable* (NA). If only one member reported in a category, the standard deviation (SD) was *not calculated* (NC).

ACTIVITIES OF DAILY LIVING

The six ADLs in the HOS include bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. Impairment is defined as beneficiaries who reported either difficulty or inability to perform the specific ADL.

Table 8 presents the frequencies of ADL impairments at baseline and follow up for your MAO and the HOS Total respondent sample. The overall trend indicates an increase in the number of reported ADL impairments between baseline and follow up for the HOS respondents. For example, approximately 12% of the HOS respondents at baseline and 15% at follow up reported three or more ADL impairments.

| TABLE 8 2008-2010 COHORT 11 PERFORMANCE MEASUREMENT NUMBER OF ADL IMPAIRMENTS FOR MAO HXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP | | | | |
|--|------------------|-------------------|------------------|-------------------|
| Number of ADL Impairments | HXXXA | | HOS Total | |
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| None | 188 (65.5%) | 170 (60.3%) | 64,389 (67.1%) | 58,480 (62.0%) |
| 1 ADL Impairment | 36 (12.5%) | 31 (11.0%) | 11,776 (12.3%) | 12,141 (12.9%) |
| 2 ADL Impairments | 29 (10.1%) | 29 (10.3%) | 8,729 (9.1%) | 9,533 (10.1%) |
| 3 or More ADL Impairments | 34 (11.8%) | 52 (18.4%) | 11,016 (11.5%) | 14,159 (15.0%) |

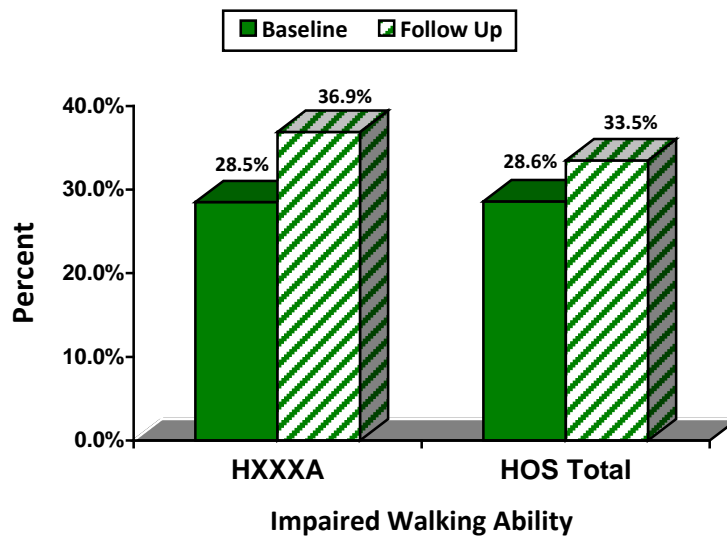
Table 9 presents means and SDs for unadjusted PCS and MCS scores by the number of ADL impairments at follow up for your MAO and the HOS Total respondent sample. Multiple ADL impairments are associated with substantially lower PCS and MCS scores for the HOS respondents.

| TABLE 9 2008-2010 COHORT 11 PERFORMANCE MEASUREMENT MEAN UNADJUSTED PCS AND MCS SCORES AT FOLLOW UP BY NUMBER OF ADL IMPAIRMENTS FOR MAO HXXXA AND HOS TOTAL | | | | |
|---|--------------------------|------------|--------------------------|-------------|
| Number of ADL Impairments* | Mean (SD) Unadjusted PCS | | Mean (SD) Unadjusted MCS | |
| | HXXXA | HOS Total | HXXXA | HOS Total |
| None | 45.8 (9.4) | 44.9 (9.1) | 55.7 (7.6) | 55.2 (8.4) |
| 1 ADL Impairment | 34.0 (8.2) | 33.2 (9.2) | 49.9 (11.2) | 51.3 (10.9) |
| 2 ADL Impairments | 29.7 (9.8) | 29.6 (8.8) | 48.6 (9.5) | 48.6 (11.3) |
| 3 or More ADL Impairments | 25.9 (6.7) | 24.8 (8.6) | 41.1 (11.5) | 41.7 (12.8) |

*If no members reported for a category, the result is *not applicable* (NA). If only one member reported in a category, the standard deviation (SD) was *not calculated* (NC).

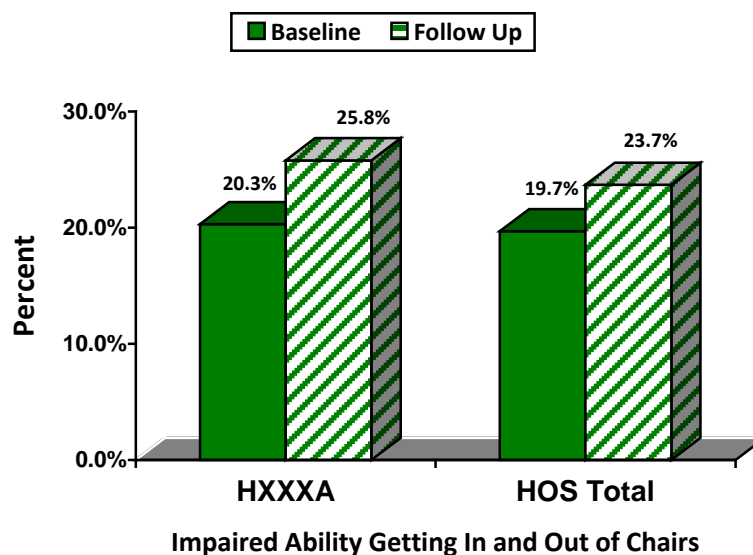
Figures 5 – 10 that follow present the percentages of beneficiaries with impairment in each of the six ADLs for your MAO and the HOS Total respondent sample at baseline and follow up. As shown in Figure 5, 29% of the HOS respondents at baseline and 34% at follow up reported an impaired ability to walk, representing an increase of about 5 percentage points.

Figure 5: Cohort 11 Performance Measurement Impaired Ability Walking for MAO HXXXA and HOS Total at Baseline and Follow Up



As displayed in Figure 6, 20% of beneficiaries in the HOS Total respondent sample at baseline and 24% at follow up reported impaired ability to get in and out of chairs, a 4 percentage point increase.

Figure 6: Cohort 11 Performance Measurement Impaired Ability Getting In and Out of Chairs for MAO HXXXA and HOS Total at Baseline and Follow Up



As shown in Figure 7, 12% of beneficiaries in the HOS Total respondent sample at baseline reported impaired ability for bathing. At follow up, 15% reported impaired ability for bathing indicating an increase of more than 3 percentage points.

Figure 7: Cohort 11 Performance Measurement Impaired Ability Bathing for MAO HXXXA and HOS Total at Baseline and Follow Up

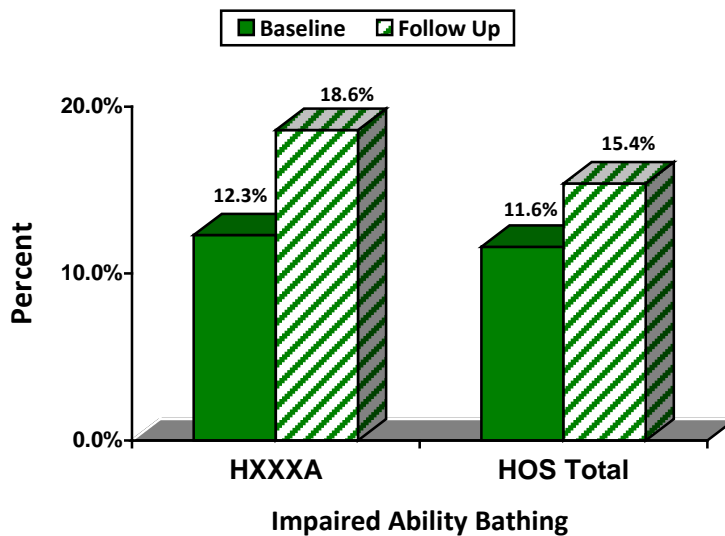
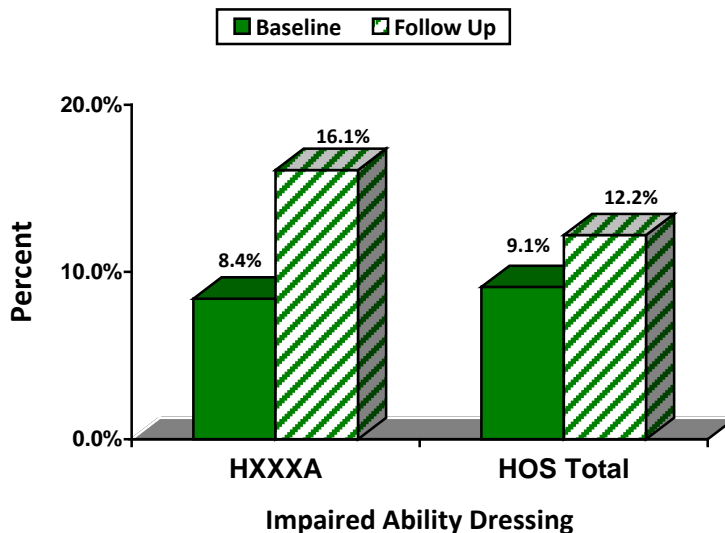


Figure 8 indicates that 9% of beneficiaries in the HOS Total respondent sample at baseline, and nearly 12% at follow up reported impaired ability for dressing, an increase of 3 percentage points.

Figure 8: Cohort 11 Performance Measurement Impaired Ability Dressing for MAO HXXXA and HOS Total at Baseline and Follow Up



As presented in Figure 9, 7% of beneficiaries in the HOS Total respondent sample at baseline, and 9% at follow up reported impaired ability using the toilet, representing a 2 percentage point increase.

Figure 9: Cohort 11 Performance Measurement Impaired Ability Using the Toilet for MAO HXXXA and HOS Total at Baseline and Follow Up

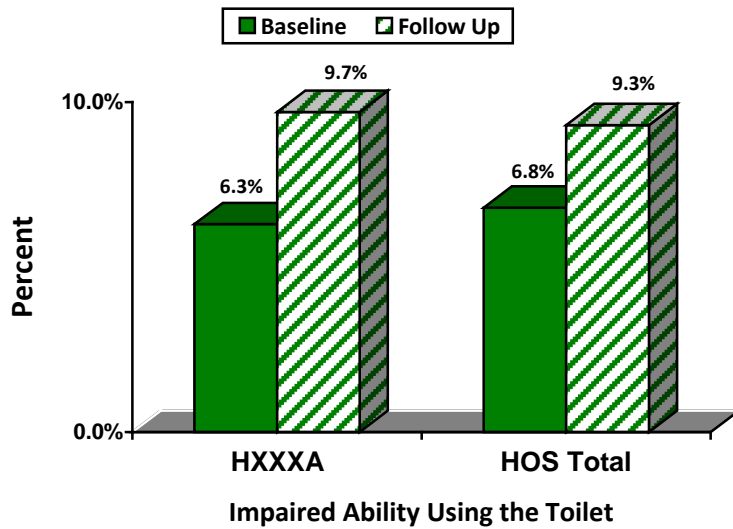
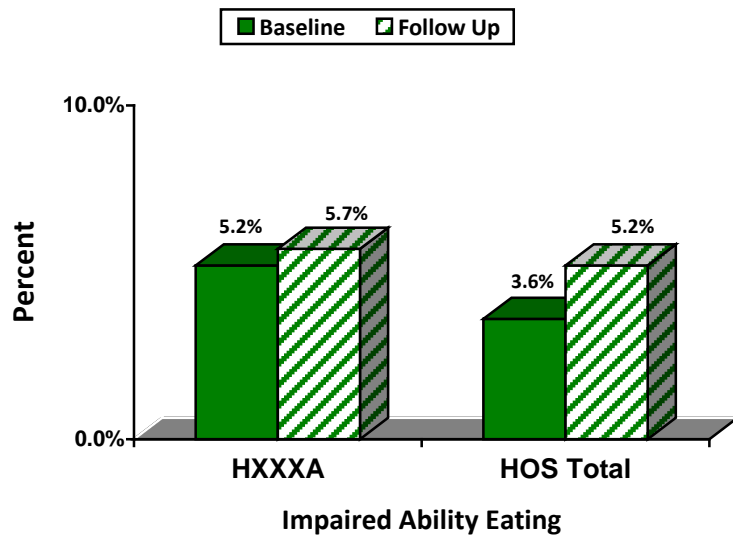


Figure 10 indicates that about 4% of beneficiaries in the HOS Total respondent sample at baseline reported an impaired ability to eat compared with more than 5% at follow up, an increase of over 1 percentage point.

Figure 10: Cohort 11 Performance Measurement Impaired Ability Eating for MAO HXXXA and HOS Total at Baseline and Follow Up



HEALTHY DAYS MEASURES

Since 2003, the HOS instrument has incorporated three questions from the Centers for Disease Control and Prevention's (CDC's) Behavioral Risk Factor Surveillance System (BRFSS). The questions are: (1) the number of days in the previous 30 days that physical health was not good, (2) the number of days in the previous 30 days that mental health was not good, and (3) the number of days in the previous 30 days that activities were limited due to poor physical or mental health. These three questions form the Healthy Days Measures and assess population based health-related quality of life. The inclusion of these questions, along with a standard question on general self-rated health, allows a comparison between HOS and BRFSS results.

The BRFSS is a continuous, state-based, random telephone survey of community dwelling U.S. adults aged 18 and older. The survey is administered and supported by the Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. Beginning in 2000, the Healthy Days Measures were also added to the examination component of the National Health and Nutrition Examination Survey (NHANES I).²³ In recent years, several organizations have found these Healthy Days Measures useful at the national, state, and community levels for (1) identifying health disparities, (2) tracking population trends, and (3) building broad coalitions around a measure of population health compatible with the World Health Organization's definition of health. One of the uses of the BRFSS Healthy Days Measures and data was to track overall progress at the state and local levels on achieving the two major goals of Healthy People 2010: (1) increase quality and years of healthy life, and (2) eliminate health disparities.

For additional information regarding the Healthy Days Measures and findings, please visit the CDC Health-Related Quality of Life website at <http://www.cdc.gov/hrqol>. Comparative national and state-level Healthy Days Measures data, including demographic breakdowns by age, sex, or race/ethnicity groups within each state, can be found on the Prevalence Data page of the website at <http://apps.nccd.cdc.gov/HRQOL>.

Healthy People 2020 was launched on Dec. 2, 2010, and has a renewed focus toward promoting health, preventing disease and disability, eliminating disparities, and improving quality of life. Information about Healthy People 2020 is available at the U.S. DHHS website: <http://www.healthypeople.gov/2020/about/default.aspx>.

For this report, the number of unhealthy days reported in the previous 30 days has been categorized into three levels for each measure: 0 days, 1-13 days, and 14-30 days. Additionally, the mean number of unhealthy days for each measure is presented.

Table 10 provides the frequencies of the Healthy Days Measures for your MAO and the HOS Total respondent sample compared to the community resident senior population represented in the 2010 CDC BRFSS national level prevalence data.²⁴ The largest percentages in the HOS respondent sample reported no unhealthy days in the past 30 days at baseline and follow up for each of the three Healthy Days Measures, although the results were lower than those for the comparable BRFSS senior sample in the same category. For example, about 60% at baseline and 57% at follow up in the HOS reported no physically unhealthy days compared to 61% for the BRFSS. Slightly more than 72% at baseline and 70% at follow up in the HOS reported no mentally unhealthy days compared to 79% in the BRFSS. More than 74% at baseline and 72% at follow up in the HOS reported no days with activity limitations due to poor physical or mental health compared to 80% for the BRFSS.

For the HOS respondent sample, the percentages that reported having 1-13 days in the past 30 days at baseline and follow up for each of the three measures were higher when compared to the corresponding results for the BRFSS sample. For example, approximately 23% of HOS beneficiaries at baseline and follow up reported 1-13 physically unhealthy days compared to 21% in the BRFSS sample. Approximately 19% of HOS beneficiaries at baseline and follow up reported 1-13 mentally unhealthy days, while the BRFSS sample had almost 14% of beneficiaries in this category. About 14% of HOS beneficiaries at baseline and follow up reported 1-13 days with activity limitations compared to over 10% in the BRFSS sample. A similar trend was found for the 14-30 day category for the three measures when comparing the results for the HOS beneficiaries to the corresponding results for the BRFSS sample.

TABLE 10
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
HEALTHY DAYS MEASURES FOR MAO HXXXA AND HOS TOTAL
RELATIVE TO 2010 CDC BRFSS 65+ POPULATION

| Healthy Days Measures | HXXXA | | HOS Total | | 2010 CDC BRFSS* |
|---------------------------------------|----------|-----------|------------|------------|-----------------|
| | Baseline | Follow Up | Baseline | Follow Up | |
| Physically Unhealthy Days | (N=286) | (N=276) | (N=93,004) | (N=90,976) | (N=142,870) |
| None | 59.8% | 59.1% | 59.5% | 56.6% | 61.4% |
| 1-13 | 24.1% | 22.5% | 23.4% | 23.5% | 21.1% |
| 14-30 | 16.1% | 18.5% | 17.1% | 19.9% | 17.5% |
| Mentally Unhealthy Days | (N=282) | (N=275) | (N=93,371) | (N=91,644) | (N=144,952) |
| None | 71.6% | 69.5% | 72.2% | 69.5% | 79.2% |
| 1-13 | 20.2% | 19.3% | 18.5% | 19.4% | 13.8% |
| 14-30 | 8.2% | 11.3% | 9.3% | 11.1% | 6.9% |
| Days with Activity Limitations | (N=287) | (N=278) | (N=93,727) | (N=91,814) | (N=146,072) |
| None | 73.9% | 75.2% | 74.3% | 71.6% | 80.4% |
| 1-13 | 16.4% | 10.8% | 14.0% | 14.4% | 10.4% |
| 14-30 | 9.8% | 14.0% | 11.7% | 14.0% | 9.2% |

* Note the following states did not collect all 12 months of the 2010 CDC BRFSS prevalence data: Alaska collected 9 months; Illinois collected 10 months; and the District of Columbia and Rhode Island collected 11 months of data.

Figure 11 presents the mean unadjusted MCS scores at baseline and follow up for your MAO and the HOS Total respondent sample by the number of mentally unhealthy days at follow up. In general, the HOS respondents who reported more mentally unhealthy days at follow up had lower MCS scores at both baseline and follow up. For example, for those who reported having 1-13 mentally unhealthy days at follow up, their mean MCS scores were 49.0 at baseline and 46.9 at follow up, indicating an average decrease in the scores of 2.1 points.

A sharper decline in MCS scores was found for the HOS respondents who reported having 14-30 mentally unhealthy days at follow up. For this group, mean MCS scores were 41.7 at baseline and 34.9 at follow up, representing an average decrease in the scores of 6.8 points.

Figure 11: Cohort 11 Performance Measurement Mean MCS Scores at Baseline and Follow Up by Number of Mentally Unhealthy Days for MAO HXXXXA and HOS Total at Follow Up

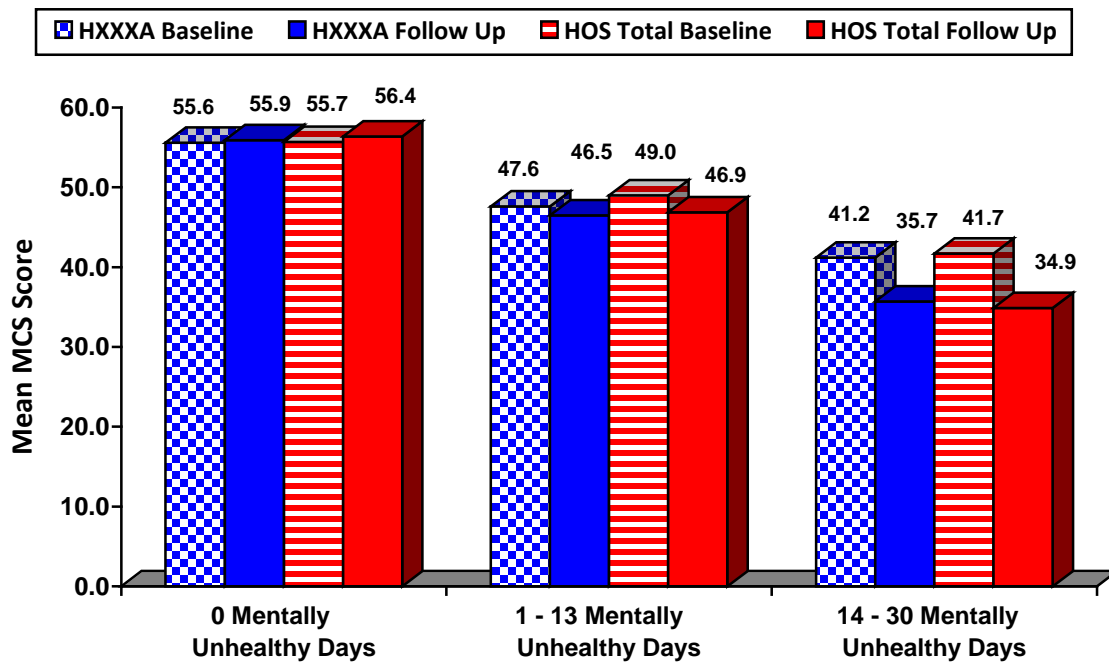
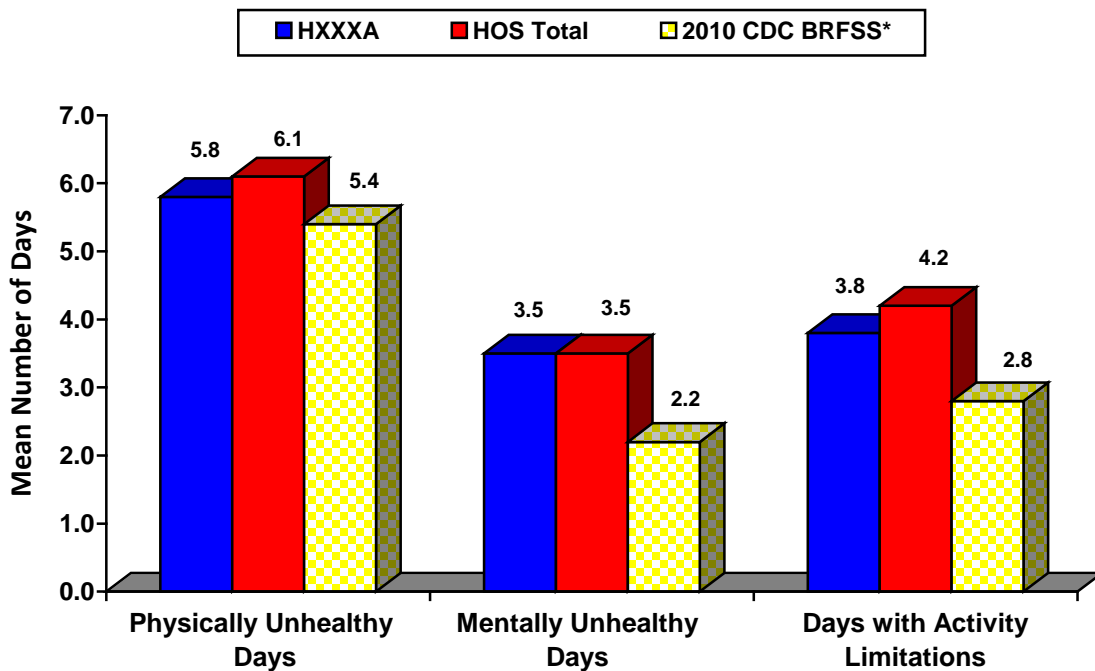


Figure 12 presents the results of the Healthy Days Measures as the mean number of unhealthy days in the previous 30 days for each of the three measures that were reported by beneficiaries age 65 and older at follow up for your MAO and the HOS Total respondent sample. A comparison to the senior sample from the 2010 CDC BRFSS data is also provided.

The mean number of physically unhealthy days in the previous 30 days for the HOS respondents was 6.1, the mean number of mentally unhealthy days was 3.5, and the mean number of days with activity limitations was 4.2. For comparison, older adults in the BRFSS sample reported 5.4 physically unhealthy days, 2.2 mentally unhealthy days, and 2.8 days with activity limitations.

Figure 12: Cohort 11 Performance Measurement Mean Number of Unhealthy Days for the Healthy Days Measures for MAO HXXXXA and HOS Total at Follow Up Compared to the 2010 CDC BRFSS Senior Sample



* Note the following states did not collect all 12 months of the 2010 CDC BRFSS prevalence data: Alaska collected 9 months; Illinois collected 10 months; and the District of Columbia and Rhode Island collected 11 months of data.

CLINICAL MEASURES

The HOS collects clinical information on height, weight categories, arthritis pain, and the ability to see and hear most things. Information about these items is provided in the remainder of this section.

Body Mass Index

Height and weight categories are used to calculate BMI, which is a measure of body fat in adult men and women. BMI is calculated as: $BMI = [\text{weight in pounds}/(\text{height in inches})^2] \times 703$, which uses the height and midpoint of the weight category to produce the standard measure of kg/m^2 units. People with a BMI over 30 are at a greater risk for several chronic conditions including: hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, and some cancers.²⁵ Additionally, being overweight or obese has been shown to accelerate the aging process.²⁵ The prevalence of obesity among adults has risen significantly over the past 20 years, particularly among the elderly population.²⁶ The Centers for Disease Control and Prevention has developed a Weight Management Research to Practice Series that summarizes weight management topics.²⁷ The summary documents are available for public health professionals, and include implications for practice. Some of the series installments are accompanied by a brochure for the general public.

Table 11 shows the distribution of BMI categories at baseline and follow up for your MAO and the HOS Total respondent sample. For the HOS respondents, 5% at baseline and 6% at follow were underweight (BMI less than 20). Approximately 30% were of normal weight (BMI of 20 – 24.99) for both surveys, and 39% at baseline and 38% at follow up were overweight (BMI of 25 – 29.99). Approximately 26% of HOS respondents at baseline and 25% at follow up were obese (BMI of 30 – 34.99) or morbidly obese (BMI of 35 or more).

TABLE 11
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
DISTRIBUTION OF BMI CATEGORIES
FOR MAO HXXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP

| BMI Category | HXXXXA | | HOS Total | |
|-----------------------|------------------|-------------------|------------------|-------------------|
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| Underweight (BMI <20) | 8 (2.9%) | 10 (3.6%) | 4,822 (5.2%) | 5,740 (6.2%) |
| Normal (20-24.99) | 80 (28.6%) | 81 (29.3%) | 27,546 (29.5%) | 28,095 (30.4%) |
| Overweight (25-29.99) | 122 (43.6%) | 112 (40.6%) | 36,741 (39.3%) | 35,407 (38.3%) |
| Obese (30-34.99) | 45 (16.1%) | 46 (16.7%) | 16,662 (17.8%) | 15,965 (17.3%) |
| Morbid Obesity (≥35) | 25 (8.9%) | 27 (9.8%) | 7,663 (8.2%) | 7,334 (7.9%) |

Arthritis Pain

Arthritis is one of the most common chronic medical conditions among seniors. Chronic pain in the elderly is a prevalent and costly health problem, with some of the most common pain resulting from osteoarthritis.^{28, 29} Effective pain management is possible and can be achieved with traditional treatments such as analgesics, non-opioid agents, and invasive techniques (corticosteroid epidural injections/nerve blocks).²⁸ Clinical practice guidelines are available for the management of persistent pain in older persons, which can be useful for health providers. For example, the American Geriatrics Society has clinical practice guidelines for persistent pain in the elderly.³⁰ Alternative therapies for pain management such as acupuncture have also been found to be useful.³¹

In the HOS, beneficiaries are asked to describe any arthritis pain they had during the past four weeks. Response categories are “None”, “Very Mild”, “Mild”, “Moderate”, and “Severe.”

Table 12 depicts the frequencies of beneficiaries who reported arthritis pain at baseline and follow up for your MAO and the HOS Total respondent sample. For the HOS respondents, only 25% of beneficiaries at baseline and 23% at follow up reported having no arthritis pain. The percentages for the “Very Mild” and “Mild” categories remained relatively stable over time, with approximately 20% reporting in each of these categories for both surveys. About 35% of beneficiaries at baseline and 37% at follow up reported “Moderate” or “Severe” arthritis pain.

TABLE 12
2008-2010 COHORT 11 PERFORMANCE MEASUREMENT
FREQUENCY DISTRIBUTION OF LEVEL OF ARTHRITIS PAIN
FOR MAO HXXXA AND HOS TOTAL AT BASELINE AND FOLLOW UP

| Level of Pain | HXXXA | | HOS Total | |
|---------------|------------------|-------------------|------------------|-------------------|
| | Baseline N(%) | Follow Up N(%) | Baseline N(%) | Follow Up N(%) |
| None | 84 (30.1%) | 72 (25.5%) | 23,761 (25.2%) | 21,717 (23.3%) |
| Very Mild | 55 (19.7%) | 56 (19.9%) | 18,550 (19.6%) | 17,936 (19.3%) |
| Mild | 52 (18.6%) | 60 (21.3%) | 19,080 (20.2%) | 18,964 (20.4%) |
| Moderate | 67 (24.0%) | 68 (24.1%) | 25,175 (26.7%) | 26,045 (28.0%) |
| Severe | 21 (7.5%) | 26 (9.2%) | 7,868 (8.3%) | 8,457 (9.1%) |

Vision and Hearing

Vision and hearing impairments are among the most prevalent chronic health conditions affecting older adults, and have been associated with a greater risk of falls and poor physical functioning.^{32, 33} Falls are a leading cause of death in older adults.^{34, 35} Additionally, poor vision is associated with depression and the need for nursing home care. Costs of poor vision to Medicare exceed \$2 billion each year in non-related health care problems, such as falls and depression.³⁶ Hearing loss is the third most prevalent chronic condition in older adults and has effects on physical and mental health, and patient quality of life.^{37, 38} Hearing problems may also be associated with balance disorders. Among older adults, falls are the leading cause of injury deaths. In 2005, 15,800 people 65 and older died from injuries related to unintentional falls; about 1.8 million people 65 and older were treated in emergency departments for nonfatal injuries from falls, and more than 433,000 of these patients were hospitalized.³⁴ Recent reports have shown that elderly persons who fall experience significant morbidity. Their hospital stays are almost twice as long, they experience greater functional decline in activities of daily living (ADLs) and in physical and social activities, and they are at greater risk for subsequent institutionalization as compared to elderly patients who are admitted for another reason.³⁹

In the HOS, beneficiaries respond “Yes” or “No” when asked if they can see well enough to read newspaper print (with glasses or contacts if that’s how they see best), and asked if they can hear most things people say (with a hearing aid if that’s how they hear best).

As described in Figure 13, approximately 6% of beneficiaries in the HOS Total respondent sample at baseline and 7% at follow up reported vision problems.

Figure 13: Cohort 11 Performance Measurement Percentage Unable to Read Newspaper Print for MAO HXXXA and HOS Total at Baseline and Follow Up

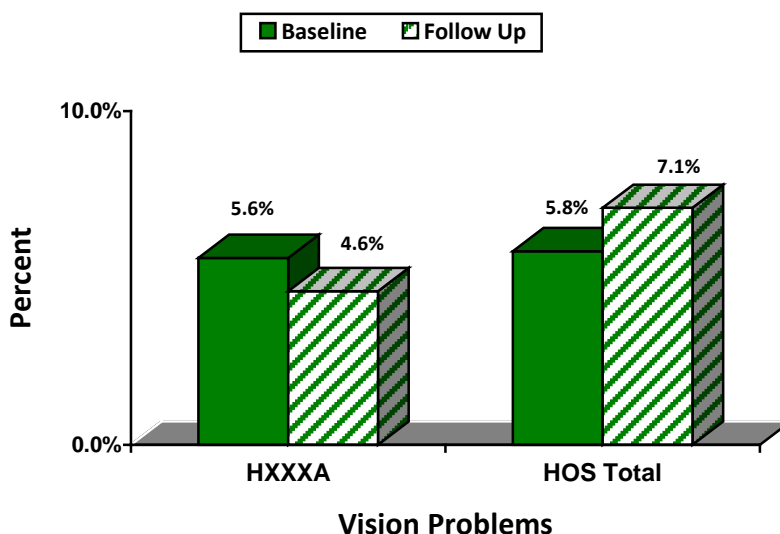
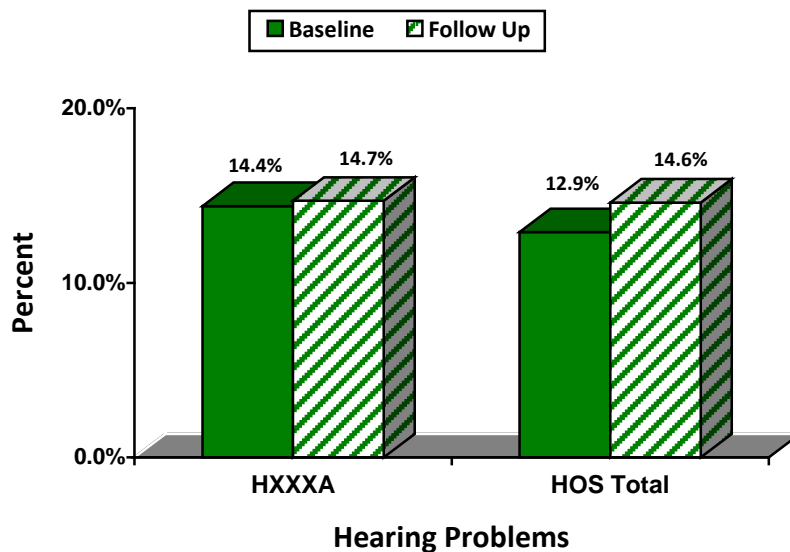


Figure 14 provides percentages of beneficiaries in your MAO and the HOS Total respondent sample who reported hearing problems. Nearly 13% of the HOS respondents at baseline and almost 15% at follow up reported hearing problems.

Figure 14: Cohort 11 Performance Measurement Percentage Unable to Hear Most Things People Say for MAO HXXXA and HOS Total at Baseline and Follow Up



According to the CDC,³⁴ older adults can take several steps to protect their independence and reduce their risk of falling. For example, MAOs can advise members to:

- Exercise regularly (exercise programs like Tai Chi that increase strength and improve balance are especially good).
- Ask their doctor or pharmacist to review their medicines (both prescription and over-the-counter) to reduce side effects and interactions.
- Have their eyes checked by an eye doctor at least once a year.
- Improve the lighting in their home.
- Reduce hazards in their home that can lead to falls.

The CDC also provides detailed information about other fall prevention activities, as well as brochures and posters to educate older adults and those who care for them about preventing falls and the injuries that result.⁴⁰ In addition, the American Academy of Family Physicians (AAFP) provides information for elderly persons and their families that is useful in reducing the risk of falls.⁴¹ The AAFP also provides information that is useful for health care providers in assessing the risk factors for falls (including demographic, medical and environmental factors), and recommends appropriate interventions for each risk factor.

Appendix 1

The following information provides a brief overview of methodology utilized in the HOS.

SAMPLING

All Medicare Advantage Organizations (MAOs), including local and regional preferred provider organizations (PPOs), and continuing cost contracts that held §1876 risk and cost contracts, with Medicare contracts in effect on or before January 1, 2007, and all Social HMOs (SHMOs), regardless of contract effective date, were required by CMS to administer the *Cohort 11 Baseline* survey in 2008. MAOs composed or one or more Special Needs Plan (SNP) benefit packages, regardless of institutionalized, chronically ill or dual eligible enrollment were also included in the above requirement. Private-Fee-For-Service (PFFS) plans could voluntarily report HOS in 2008. Furthermore, all MAOs which administered the *Cohort 11 Baseline* survey in 2008 were required by CMS to administer the *Cohort 11 Follow Up* survey in 2010.

Cohort 11 Baseline Sampling

For the 2008 *Cohort 11 Baseline* sample, CMS identified beneficiaries who were eligible for sampling.

- MAOs with fewer than 500 members were not required to report HOS.
- For MAOs with populations of 500 to 1,200 members, all eligible members were included in the sample.
- For MAOs with Medicare populations of more than 1,200 and less than 3,000 members, a simple random sample of 1,200 members was selected for the baseline survey.
- In MAOs with 3,000 or more members, members who responded to the 2007 *Cohort 10 Baseline* survey were excluded from the 2008 *Cohort 11 Baseline* sample.
- Members were defined as eligible if they had been continuously enrolled for at least six months and did not have End Stage Renal Disease (ESRD).

Cohort 11 Follow Up Sampling

For the 2010 *Cohort 11 Follow Up* sample, CMS identified beneficiaries from the 2008 *Cohort 11 Baseline* sample who were eligible for remeasurement.

- Members were eligible for remeasurement if they had sufficient data to derive PCS or MCS scores at baseline.
- Beneficiaries were excluded from *Cohort 11 Follow Up* if they disenrolled from their MAO subsequent to the *Cohort 11 Baseline* survey, or were deceased subsequent to the *Cohort 11 Baseline* survey. Although deceased beneficiaries were excluded from the *Cohort 11 Follow Up* sample, CMS includes deceased baseline respondents when calculating the HOS performance measurement results.²

The *Cohort 11 Baseline* and *Cohort 11 Follow Up* survey samples were comprised of beneficiaries who completed the HOS in English, Spanish, or Chinese language versions of the survey. Additional information about *Cohort 11* sampling and survey administration can be found in the NCQA HEDIS 2008 and 2010 Volume 6 manuals.^{2,3}

HOS DATA COLLECTION TOOLS

The core HOS health status items were collected with the same instrument for the *2008 Cohort 11 Baseline* and *2010 Cohort 11 Follow Up*. Since 2006, the HOS 2.0 has incorporated the Veterans RAND 12-Item Health Survey (VR-12), which was used for the baseline and follow up administrations.

Veterans RAND 12-Item Health Survey (VR-12)

Physical and mental health status among beneficiaries who responded to the *2008 Cohort 11 Baseline* and the *2010 Cohort 11 Follow Up* HOS were measured with the VR-12 health survey, included in the HOS 2.0. The VR-12 was developed from the Veterans RAND 36-Item Health Survey (VR-36; formerly called the Veterans SF-36), which was adapted from the RAND 36-Item Health Survey (RAND 36), at the RAND Corporation, and the Medical Outcomes Study.⁴ The VR-12 is a generic, multipurpose, self-administered health survey consisting of selected items from each of the eight concepts (domains) of health in the earlier 36-item surveys, and utilizes 12 items from the VR-36 for construction of the PCS and MCS scores. Internal consistency reliability estimates for the VR-12 PCS and MCS scores are both 0.90. Since 2002, the VA has administered the VR-12 to over 400,000 patients annually as part of its quality management program.⁴ PCS and MCS summary scores from the VR-12 have been used in risk adjustment models that were developed to reliably predict mortality in VA patients receiving ambulatory care.⁴

The VR-12 has undergone extensive testing and shown to be reliable and valid in ambulatory care patient populations.⁴ The taxonomy underlying the construction of the VR-12 scales and summary measures is comprised of a total of 14 items, eight scales that aggregate one or two items each, and the PCS and MCS scores. Two of the 14 items, which ask about change in physical health and emotional health compared to one year ago, are not used in the calculation of the PCS and MCS scores. The VR-12 explains 90% of the reliable variance of the VR-36.⁴² PCS and MCS scores are standardized to the U.S. population and are 1990 norm-based so that scores have a direct interpretation in relation to the distribution of scores in the U.S. population with a mean of 50, and a standard deviation of 10.

The VR-12 asks respondents about their usual activities and how they would rate their health. Concepts included in the measure correspond to the following eight physical and mental health domains:

- Physical Functioning
- Role-Physical
- Role-Emotional
- Bodily Pain
- Social Functioning
- Mental Health
- Vitality
- General Health

Three of the scales, which comprise the physical functioning, role-physical, and bodily pain domains, correlate most highly with the physical component, and contribute significantly to scoring the PCS. Three scales, which comprise the social functioning, role-emotional, and mental health domains, correlate most highly with the mental component, and contribute significantly to scoring the MCS. The general health, vitality and social functioning scales correlate substantially with both components. All eight scales are used in the calculation of the summary scores.³ The summary scores were calculated using the Modified Regression Estimate (MRE) for imputation and scoring of missing data. The MRE uses complete cases to estimate a regression equation where only those items that are present are used. Depending on the pattern of missing item responses, a different set of regression weights is required.⁴³ A higher PCS or MCS score reflects better health status.

With the MRE scoring, PCS and MCS results were adjusted for the impact of telephone administration. Studies have shown that health status scores tend to be more favorable with interviewer administered surveys; this phenomenon is thought to be the result of individuals feeling more apprehensive about admitting poorer health directly to another person. To adjust for this, 1.9 points were subtracted from the PCS score and 4.5 points were subtracted from the MCS score if a survey was administered by telephone.

The VR-12 and the 36-item health surveys measure the same health domains. In comparison with an earlier 36-item survey, two modifications were made in the VR-36 and VR-12. The first modification was an increase in the number of response choices for the role-physical and role-emotional items from a two point choice of “Yes” or “No” to a five-point Likert scale (“No, none of the time,” “Yes, a little of the time,” “Yes, some of the time,” “Yes, most of the time,” and “Yes, all of the time”). The second modification was the use of two items to assess health change, one focusing on physical health and one on emotional problems, in contrast to the one general change item in the prior 36-item survey.^{44, 45} The shorter instrument was adopted to reduce response burden and survey costs, while producing similar results. The body of literature supports the shorter survey as a reliable and valid substitute for the 36-item health surveys. In addition, conversion formulas have been developed and validated for comparison of the VR-12 with the earlier 36-item survey that allow reliable comparisons of HOS 1.0 and HOS 2.0 results.^{3, 4, 42, 44, 46, 47, 48, 49}

DATA EVALUATION AND PROCESSING

The entire HOS data file was reviewed to verify the presence of unique beneficiaries. Additional reviews of the data are performed using the complete HOS data file as well as subsets of the data, e.g., mode of administration and vendor.

- Data consistency checks are performed to identify:
 - Out of range dates and response values
 - Duplicate Health Insurance Claim (HIC) numbers
 - Duplicate Social Security Numbers (SSN)
 - Data shifts in value assignment
 - Inconsistent data distributions among vendors
 - Inconsistent assignment of survey variables (such as survey disposition, round number, and survey language)

- Response consistency checks between related items are performed to validate the integrity of the data.
- Date variables are converted to a SAS^{®F} date format to facilitate the calculation of duration of enrollment and age, which are then stored in the data file.
- For performance measurement, the baseline and follow up data are evaluated and merged, and additional variables are calculated or obtained from other CMS data sources.

CALCULATION OF OUTCOMES

The *2008-2010 Cohort 11* Performance Measurement Report incorporates the HOS 2.0 for both the baseline and follow up survey administrations. The outcomes of the performance measurement analysis were death, change in physical health as measured by the PCS score, and change in mental health as measured by the MCS score. For the HOS results, death and PCS outcomes were combined into one overall measure of change in physical health. Thus, the primary outcomes are two: (1) alive with PCS the same or better (vs. PCS worse or death) and (2) MCS the same or better (vs. MCS worse). These outcomes are designated as the primary outcomes of interest since health maintenance, rather than improvement, is a realistic clinical goal for many seniors.

Multivariate logistic regression models were used for case-mix adjustment, and to calculate expected outcomes for each beneficiary. Case-mix adjustments were used so that all MAOs were as comparable as possible in terms of socio-demographic characteristics (age, gender, race, etc.), chronic conditions, baseline health status, and other design variables. All beneficiaries age 65 or older, who completed the HOS at baseline and had a baseline PCS or MCS score, were included in the analysis of death outcomes. Beneficiaries age 65 or older who completed the HOS at baseline and follow up, and for whom PCS and MCS scores could be computed at both time points, were included in the analysis of PCS and MCS outcomes.

For expected outcomes, the probability of being better or worse was calculated using statistical models that take into account the demographic and socioeconomic variables and other covariates. The expected outcomes were death, “PCS same or better,” and “MCS same or better.” For calculating expected outcomes, separate case-mix models were warranted for death, and for PCS and MCS scores.

A series of six different death models, three different PCS models, and three different MCS models were used, since not all beneficiaries had data for all of the independent variables that could be used to calculate an expected score. In other words, each expected outcome for a beneficiary was derived from the best-fit model, which was based on those variables for which the beneficiary had data. For example, if a beneficiary had all of the required independent variables for Model A (the model containing the highest number of independent variables), then their expected score was calculated using that model. If not, then Model B (the model containing the second highest number of independent variables) was used if all of the required independent variables for this model were available, and so on. One model was used for each beneficiary, and expected outcomes were calculated for every beneficiary.

^F SAS[®] is a registered trademark of SAS Institute Inc., Cary, NC.

Death Models

Models used to predict the probability of death for each beneficiary included variables to control for baseline differences in demographic and socioeconomic characteristics, chronic medical conditions, and functional status. Demographic and socioeconomic variables included age, gender, race, education, marital status, annual household income, home ownership, Medicaid status, and eligibility for Supplemental Security Income (SSI). Chronic medical conditions were measured with a checklist of 13 conditions and four indicators of current cancer treatment. Conditions also were grouped into four categories that were strong, moderate, weak, and negative predictors of death, for models in which the individual chronic medical condition data were not available. Additional variables considered for the models included the baseline item about general health compared to others, the six ADL items, the individual VR-12 response items, and the baseline PCS and MCS scores. For example, functional status was measured using a combined VR-12 physical functioning/ADL scale, the individual VR-12 response items, and the baseline item about general health compared to others. Baseline PCS and MCS were used when VR-12 response items were not available (see Table A1 in this Appendix for detailed information about covariates used in each of the death models).

PCS and MCS Models

Models used to predict expected change in PCS and MCS scores (e.g., PCS better) used a set of exogenous demographic and socioeconomic variables at baseline, such as age, gender, race, education, marital status, annual household income, home ownership, Medicaid status, and SSI (see Table A2 in this Appendix for detailed information). Because each beneficiary served as his or her own control for the PCS and MCS analysis, substantial case-mix was already reflected in the baseline PCS or MCS scores. Sensitivity analyses determined that further adjustment for chronic medical conditions at baseline was not warranted, because errors in disease reporting were correlated with functioning.

Calculation of MAO Level Results

Calculation of the overall MAO-level results was completed by creating an actual death indicator for each beneficiary in an MAO who died during the two-year follow up. Indicators were also created for whether the PCS score and MCS score were better, the same, or worse at the two-year follow up. The PCS score is considered to be the same if it changed by less than 5.66 points (plus or minus) between baseline and follow up survey administrations. A change greater than 5.66 points (plus or minus) is outside of the 95% confidence interval for an individual beneficiary, as estimated from the standard deviation and reliability of the PCS score. The MCS score is considered to be the same if it changed by less than 6.72 points (plus or minus).

An expected death rate, an expected PCS same or better rate, and an expected MCS same or better rate were calculated for each beneficiary within an MAO using regression models for the case-mix adjustment. Data for all beneficiaries within an MAO were summarized, and included the mean expected death rate, the mean expected PCS score same or better, and the mean expected MCS score same or better rates. The mean actual death rate, and the mean actual PCS score same or better, and the mean actual MCS score same or better rates were then calculated.

Expected outcomes for “PCS better” and “MCS better” were also needed to calculate the percentage of beneficiaries who were better, the same or worse on each measure. The percentage of beneficiaries who were worse at follow up is calculated as 1 minus the percentage who were the same or better. The differences between actual and expected results were calculated by combining the national results and the MAO deviation score.

To summarize data for the outcome “alive with PCS the same or better” for all beneficiaries within an MAO, the mean expected death rate (E_d) was calculated for all beneficiaries in the MAO, along with the mean expected “PCS same or better” rate (E_{psb}). The expected “alive and PCS same or better” for the MAO is $(1-E_d)*E_{psb}$. For the same beneficiaries within the MAO, the mean actual death rate (A_d) and mean actual “PCS same or better” rate (A_{psb}) were calculated across all beneficiaries. The actual “alive and PCS same or better” rate for the MAO is $[(1-A_d)*A_{psb}]$. The difference between actual and expected results indicates the percentage points by which the MAO’s actual “alive and PCS same or better” rate was higher (for a positive difference) or lower (for a negative difference) than expected results. A t statistic, expressing the significance of the MAO differences from the average national results, was calculated by dividing the MAO deviation by the standard error. A t statistic plus or minus 2 or larger was considered significant, as long as an overall F test indicated that the MAOs differed on the outcome of interest (discussed below). An adjusted MAO percentage of “alive and PCS same or better” also was calculated by combining the overall (national) results and the MAO deviation score, using a logit transformation. Similar logic was used to calculate MAO level data for “alive and PCS better”, “MCS same or better”, and “MCS better.”

Tests of Significance for MAO Level Differences

For physical health (mortality and PCS) over the two-year follow up period, 17.2% of beneficiaries at the national level were better (alive and PCS better), 49.5% were the same (alive and PCS the same), and 33.3% were worse (dead or PCS worse). An overall F test showed that mortality differed significantly at the MAO level ($p < 0.001$). “PCS same or better” also differed significantly across all MAOs ($p < 0.001$), as did “PCS better” ($p < 0.001$). Given that both “Death” and “PCS same or better,” which were specified *a priori* as the primary physical health outcome, differed significantly at the MAO level, an outlier MAO level analysis for PCS was warranted. The PCS outlier analysis was performed using a t test at the MAO level. In the *Cohort 11* Performance Measurement, there were a total of 23 PCS outliers; 11 MAOs were identified as better than expected and 12 MAOs were identified as worse than expected compared to the national average for physical health (Alive and PCS same or better).

Over the two-year follow up period for mental health (MCS), 18.1% of beneficiaries at the national level were better, 59.8% were the same, and 22.0% were worse. An overall F test showed that “MCS same or better” differed significantly at the MAO level ($p < 0.001$), although “MCS better” did not differ significantly ($p = 0.154$). Given that “MCS same or better,” which was specified *a priori* as the main mental health outcome measure, differed significantly across all MAOs, an outlier MAO level analysis for MCS was warranted. The MCS outlier analysis was performed using a t test at the MAO level. In the *Cohort 11* Performance Measurement, there were a total of 24 MCS outliers; 11 MAOs were identified as better than expected and 13 MAOs were identified as worse than expected compared to the national average for mental health (MCS same or better).

**TABLE A1
COVARIATES USED IN ESTIMATION OF EXPECTED MORTALITY**

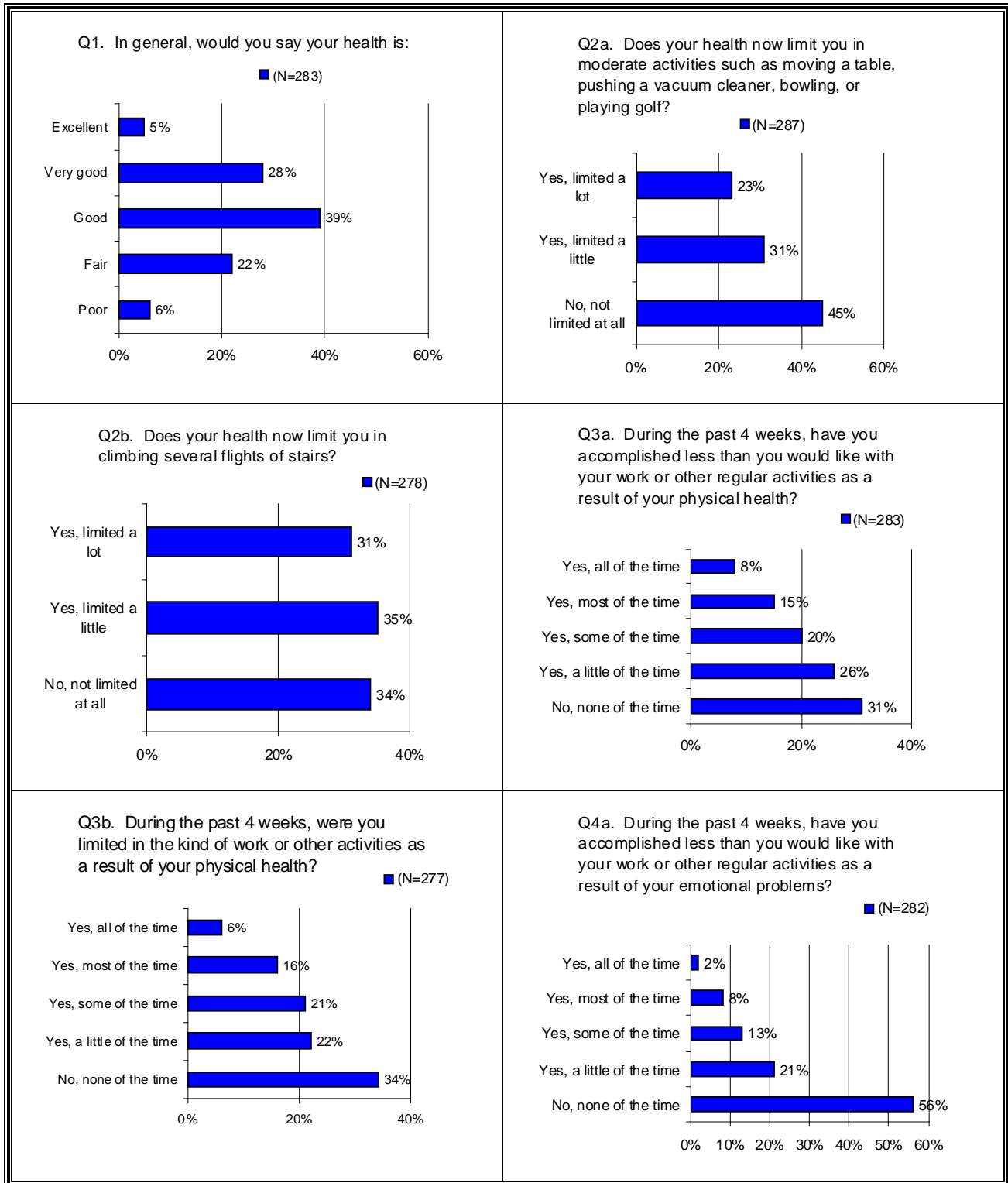
| Death Model Covariates | Death Model | | | | | |
|--|-------------|---|---|---|---|---|
| | A | B | C | D | E | F |
| Demographic and Socioeconomic Variables at Baseline | | | | | | |
| Age (linear), Age 75+, Age 85+ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Gender | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Age and Gender interaction | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| HOS Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander) | ✓ | ✓ | | | | |
| CMS Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander) | | | ✓ | ✓ | ✓ | ✓ |
| On Medicaid or not on Medicaid | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Eligible or not for Supplemental Security Income (SSI) due to disability | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Home owner or non-home owner | ✓ | ✓ | | | | |
| High school graduate or not high school graduate | ✓ | ✓ | | | | |
| Married or not married (single, divorced, widowed, separated) | ✓ | ✓ | | | | |
| Annual household income less than \$20,000 or annual household income of \$20,000 or greater | ✓ | ✓ | | | | |
| Chronic Medical Conditions at Baseline | | | | | | |
| Presence or absence of each of 13 chronic medical conditions: hypertension, myocardial infarction, angina/coronary artery disease, congestive heart failure, other heart conditions, stroke, pulmonary disease, gastrointestinal disorders, arthritis of hip or knee, arthritis of hand or wrist, sciatica, diabetes, any cancer other than skin cancer | ✓ | | | | | |
| Treatment or non-treatment for 4 cancer types: colon/rectal, lung, breast, prostate | ✓ | | | | | |
| Mean number of conditions in 4 groups with varying relations to death: 1. Strong relationship (congestive heart failure, any cancer, lung cancer) 2. Moderate relationship (pulmonary disease, myocardial infarction, colon/rectal cancer) 3. Weak relationship (diabetes, breast cancer, other heart conditions, stroke) 4. Negative relationship (gastrointestinal disorders, arthritis [both types], sciatica, hypertension, angina/coronary artery disease, prostate cancer) | | ✓ | ✓ | ✓ | | |
| Baseline Functional Status | | | | | | |
| Physical Functioning/Activities of Daily Living Index | ✓ | ✓ | ✓ | | | |
| General Health item (health is excellent, very good, good, fair, poor) | ✓ | ✓ | ✓ | | | |
| Physical Functioning item (limitations in moderate activities) | ✓ | ✓ | ✓ | | | |
| Physical Functioning item (limitations climbing several flights of stairs) | ✓ | ✓ | ✓ | | | |
| Role Physical item (accomplished less than would like) | ✓ | ✓ | ✓ | | | |
| Role-Physical item (limited in the kind of work or other activities) | ✓ | ✓ | ✓ | | | |
| Role-Emotional item (accomplished less than would like) | ✓ | ✓ | ✓ | | | |
| Role-Emotional item (didn't do work or other activities as carefully) | ✓ | ✓ | ✓ | | | |
| Bodily Pain item (pain interfered with normal work) | ✓ | ✓ | ✓ | | | |
| Mental Health item (felt calm and peaceful) | ✓ | ✓ | ✓ | | | |
| Vitality item (had a lot of energy) | ✓ | ✓ | ✓ | | | |
| Vitality item (felt downhearted and blue) | ✓ | ✓ | ✓ | | | |
| Social Functioning item (health interfered with social activities) | ✓ | ✓ | ✓ | | | |
| One-item measure of General Health compared to others | ✓ | ✓ | ✓ | | | |
| Baseline PCS and MCS | | | | ✓ | ✓ | |

Table A2
COVARIATES USED IN ESTIMATION OF CHANGE IN PCS AND MCS SCORES

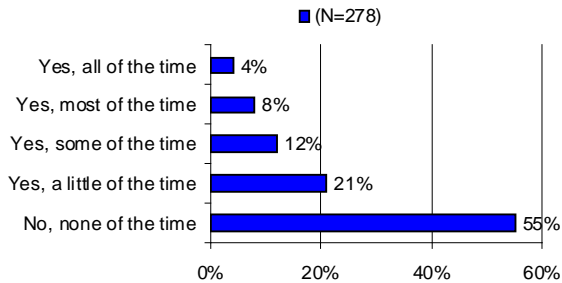
| PCS/MCS Model Covariates at Baseline | PCS Model | | | MCS Model | | |
|--|-----------|---|---|-----------|---|---|
| | A | B | C | A | B | C |
| Age (linear), Age 75+, Age 85+ | √ | √ | √ | √ | √ | √ |
| Gender | √ | √ | √ | √ | √ | √ |
| Age and Gender interaction | √ | √ | √ | √ | √ | √ |
| HOS Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander) | √ | √ | √ | √ | √ | √ |
| Receive Medicaid or do not receive Medicaid | √ | √ | √ | √ | √ | √ |
| Eligible or not for Supplemental Security Income (SSI) due to disability | √ | √ | √ | √ | √ | √ |
| Home owner or non-home owner | √ | √ | √ | √ | √ | √ |
| High school graduate or not high school graduate | √ | √ | | √ | √ | |
| Married or not married (single, divorced, widowed, separated) | √ | √ | √ | √ | √ | √ |
| Annual household income less than \$20,000 or annual household income of \$20,000 or greater | √ | | | √ | | |

Appendix 2

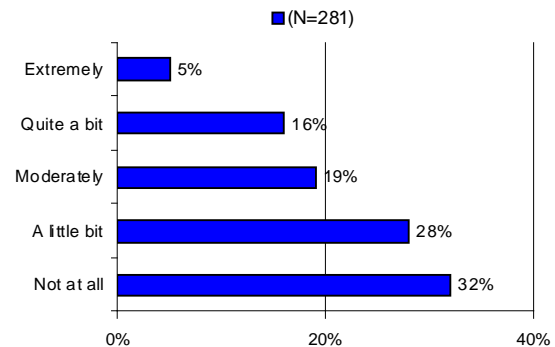
2010 COHORT 11 FOLLOW UP FREQUENCIES OF SURVEY FIELDS FOR MAO HXXXXA 50



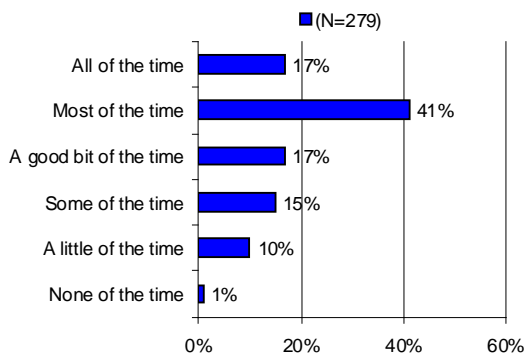
Q4b. During the past 4 weeks, have you had any of the following problems with your work or other regular activities as a result of your emotional problems? Didn't do work or other activities as carefully as usual?



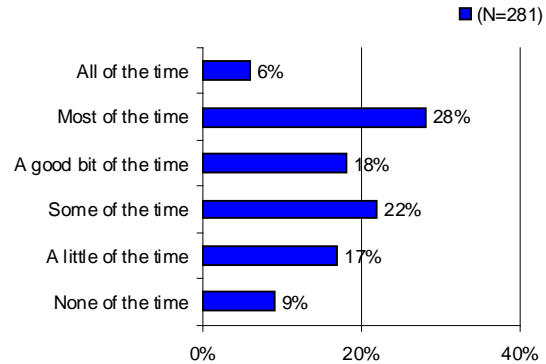
Q5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?



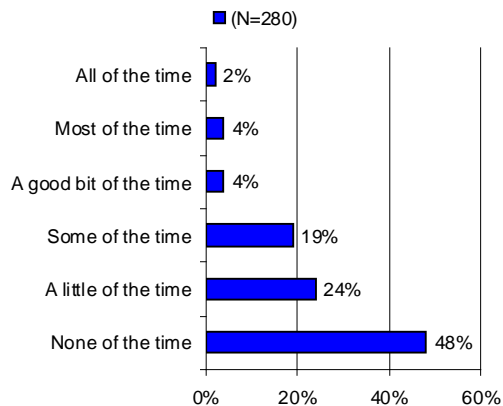
Q6a. How much of the time during the past 4 weeks: Have you felt calm and peaceful?



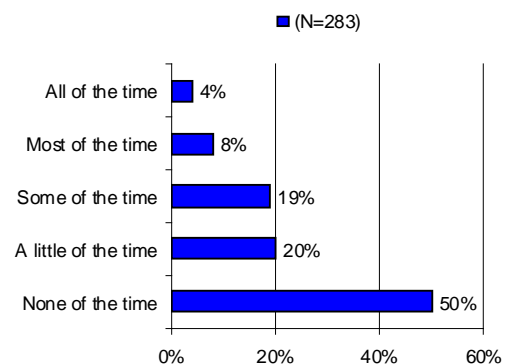
Q6b. How much of the time during the past 4 weeks: Did you have a lot of energy?



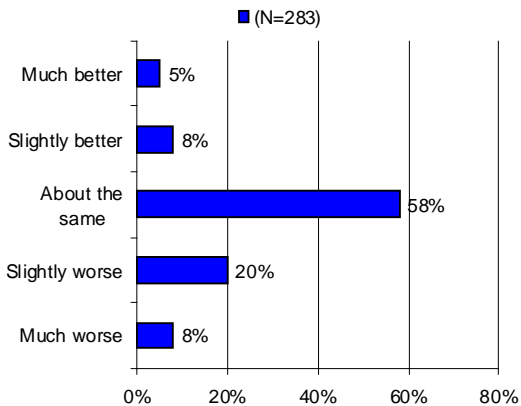
Q6c. How much of the time during the past 4 weeks: Have you felt downhearted and blue?



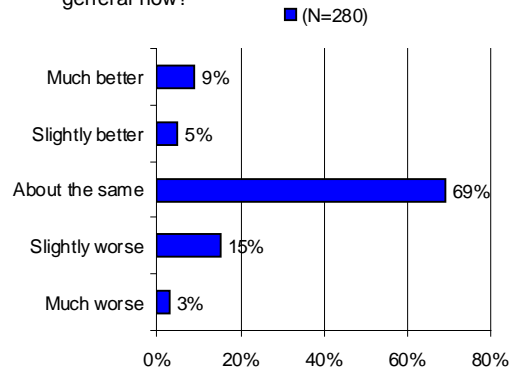
Q7. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?



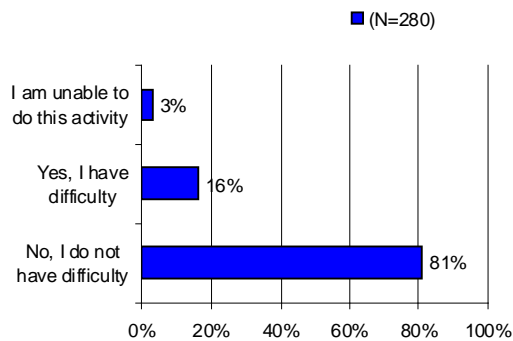
Q8. Compared to one year ago, how would you rate your physical health in general now?



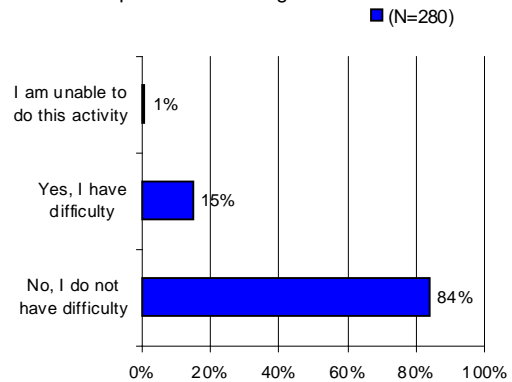
Q9. Compared to one year ago, how would you rate your emotional problems (such as feeling anxious, depressed or irritable) in general now?



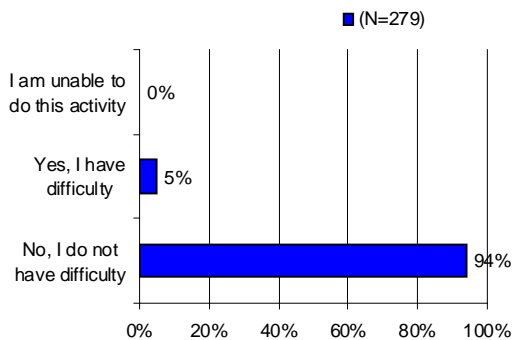
Q10a. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person? Bathing?



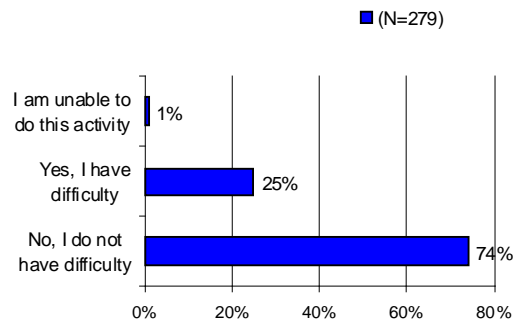
Q10b. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person? Dressing?



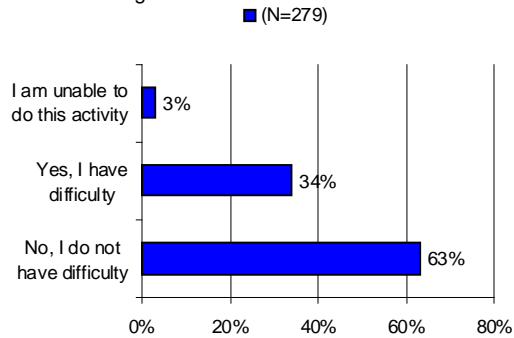
Q10c. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person? Eating?



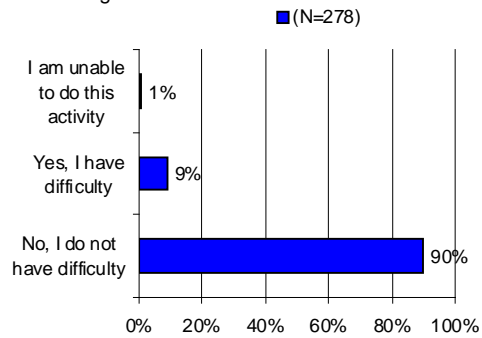
Q10d. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person? Getting in or out of chairs?



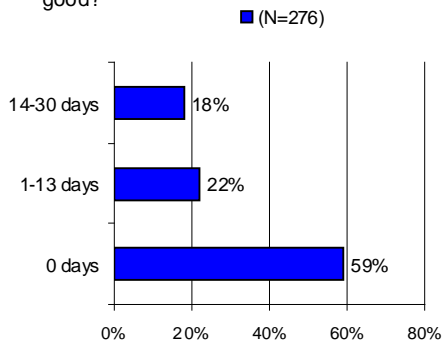
Q10e. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person?
Walking?



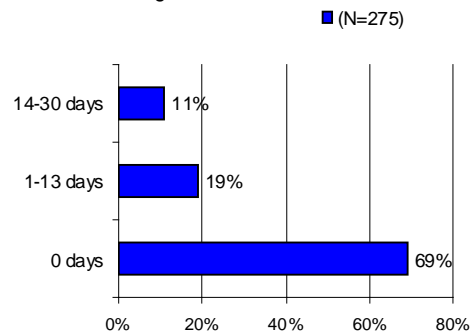
Q10f. Because of a health or physical problem, do you have any difficulty doing the following activities without special equipment or help from another person?
Using the toilet?



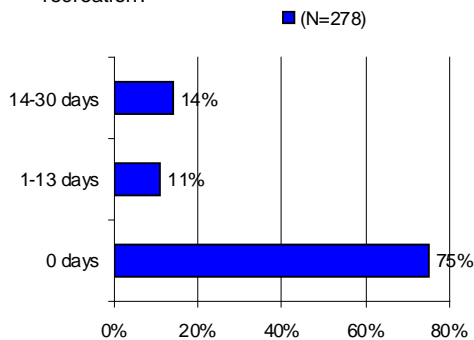
Q11. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?



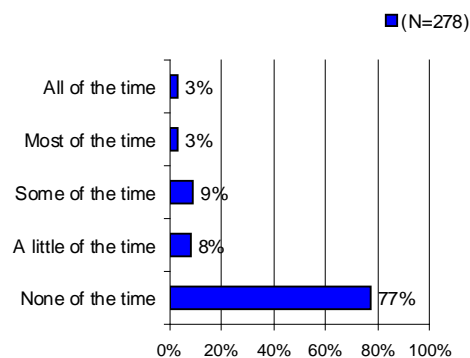
Q12. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?



Q13. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

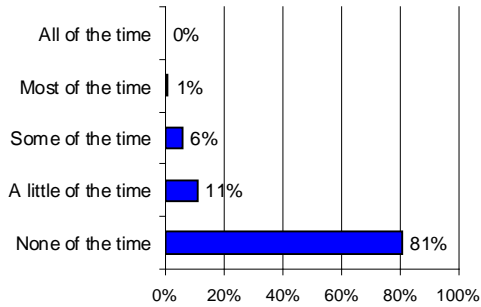


Q14a. During the past 4 weeks, how often have you had chest pain or pressure when you exercise?



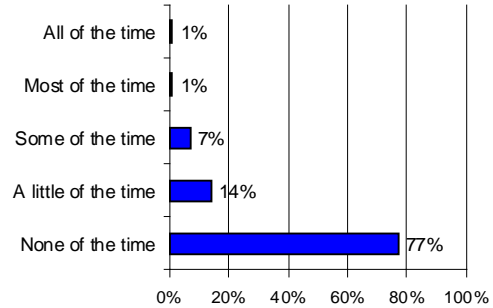
Q14b. During the past 4 weeks, how often have you had chest pain or pressure when resting?

■ (N=281)



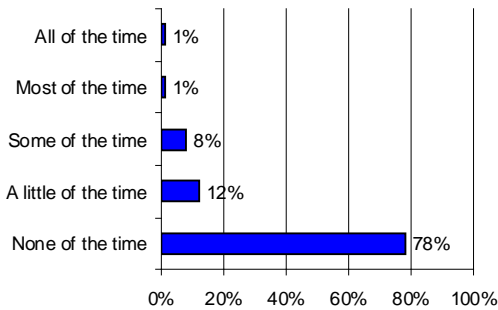
Q15a. During the past 4 weeks, how often have you felt short of breath when lying down flat?

■ (N=281)



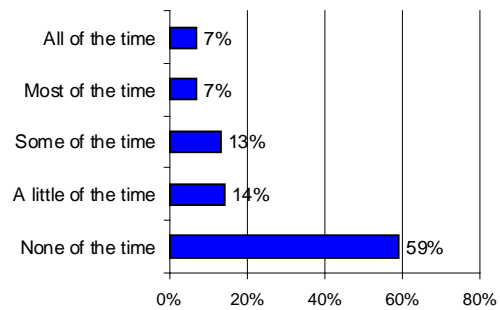
Q15b. During the past 4 weeks, how often have you felt short of breath when sitting or resting?

■ (N=280)



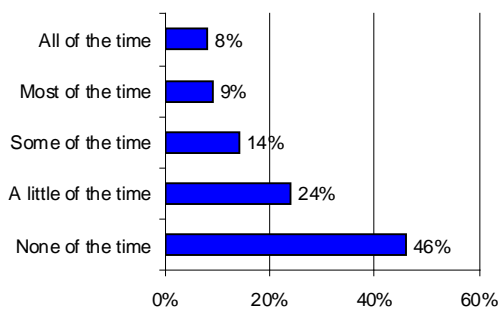
Q15c. During the past 4 weeks, how often have you felt short of breath when walking less than one block?

■ (N=278)



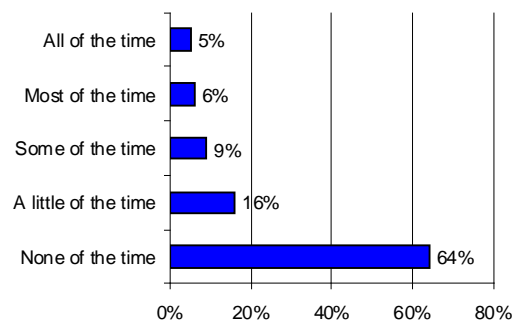
Q15d. During the past 4 weeks, how often have you felt short of breath when climbing one flight of stairs?

■ (N=273)

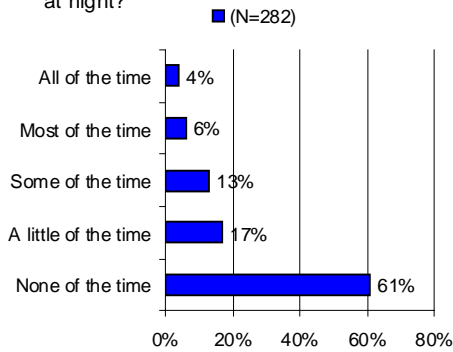


Q16a. During the past 4 weeks, how much of the time have you had numbness or loss of feeling in your feet?

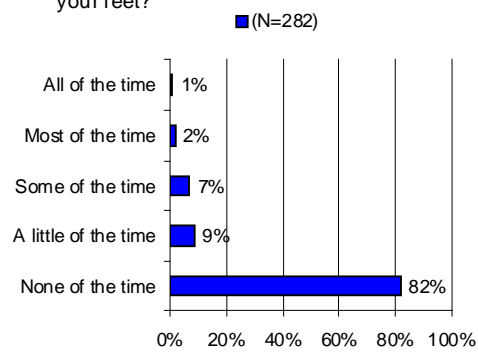
■ (N=281)



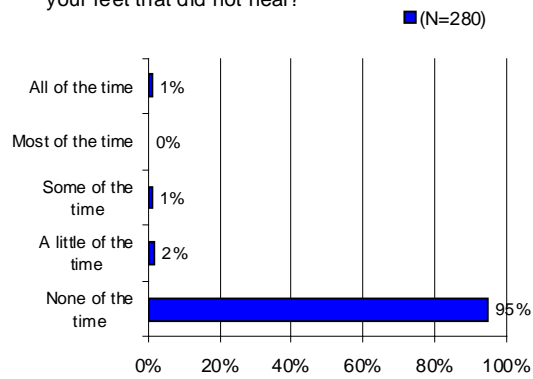
Q16b. During the past 4 weeks, how much of the time have you had tingling or burning sensation in your feet especially at night?



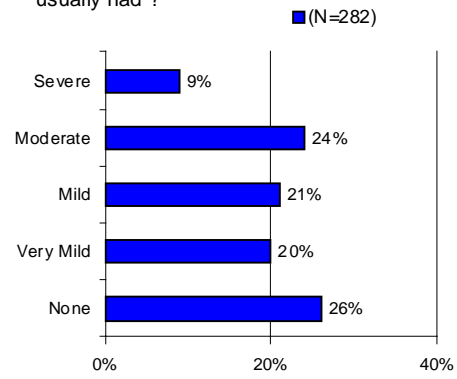
Q16c. During the past 4 weeks, how much of the time have you had decreased ability to feel hot or cold with your feet?



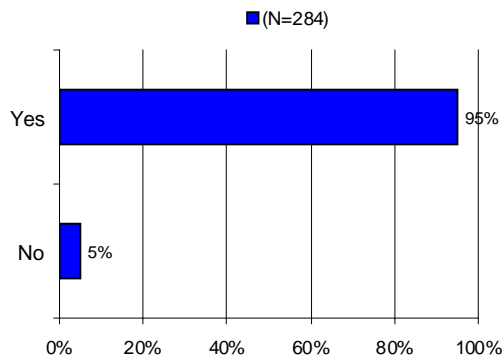
Q16d. During the past 4 weeks, how much of the time have you had sores or wounds on your feet that did not heal?



Q17. During the past 4 weeks, how would you describe any arthritis pain you usually had ?



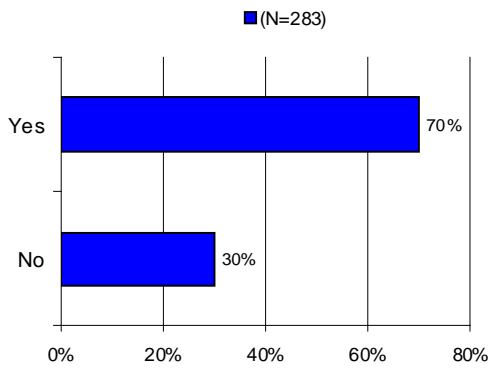
Q18. Can you see well enough to read newspaper print (with your glasses or contacts if that's how you see best)?



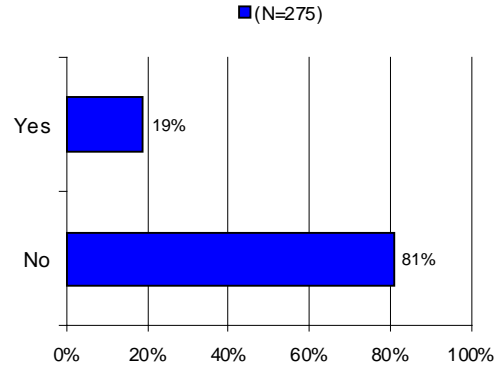
Q19. Can you hear most of the things people say (with a hearing aid if that's how you hear best)?



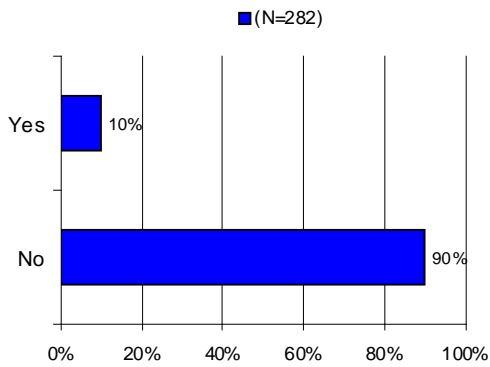
Q20. Has a doctor ever told you that you had: Hypertension or high blood pressure?



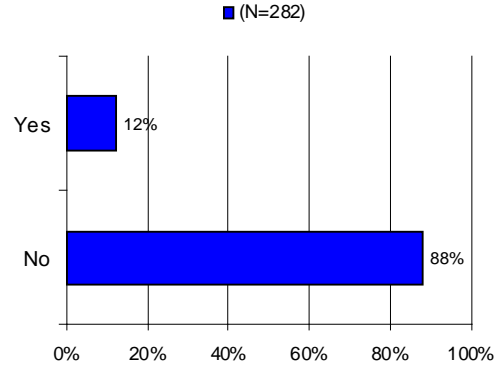
Q21. Has a doctor ever told you that you had: Angina pectoris or coronary artery disease?



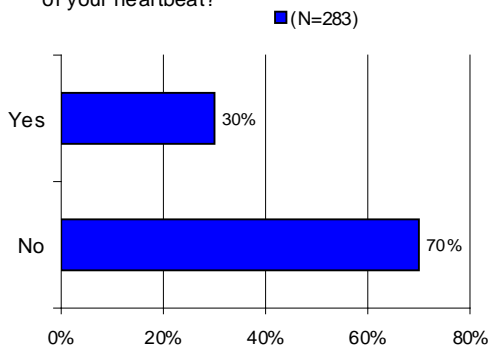
Q22. Has a doctor ever told you that you had: Congestive heart failure?



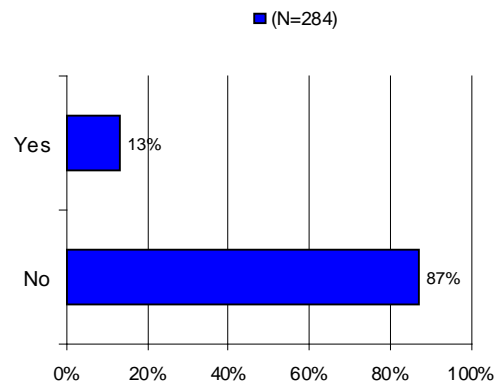
Q23. Has a doctor ever told you that you had: A myocardial infarction or heart attack?



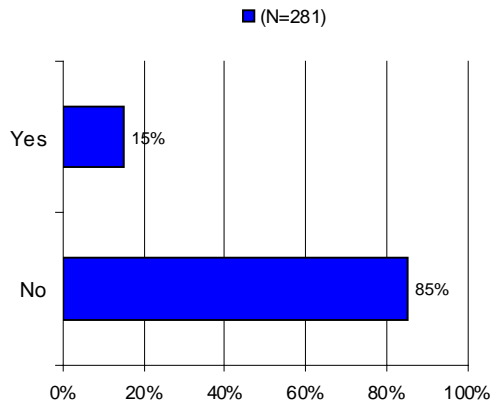
Q24. Has a doctor ever told you that you had: Other heart conditions, such as problems with heart valves or the rhythm of your heartbeat?



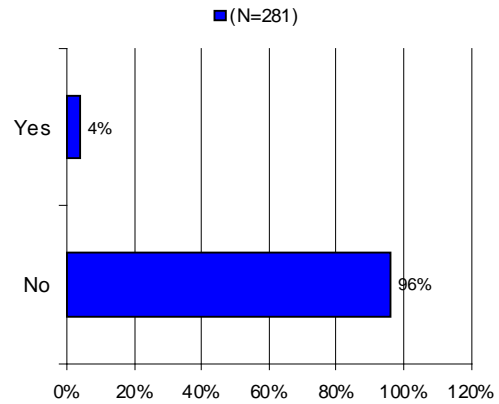
Q25. Has a doctor ever told you that you had: A stroke?



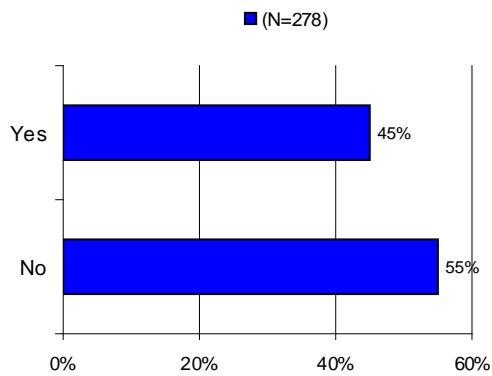
Q26. Has a doctor ever told you that you had: Emphysema, or asthma, or COPD (chronic obstructive pulmonary disease)?



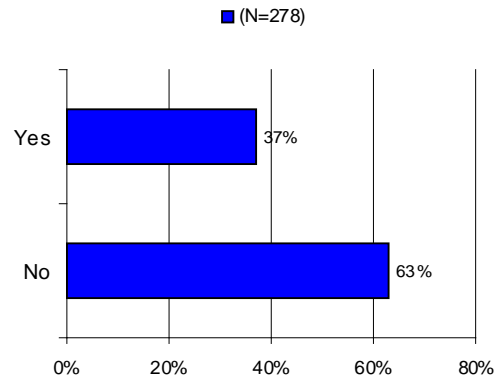
Q27. Has a doctor ever told you that you had: Crohn's disease, ulcerative colitis, or inflammatory bowel disease?



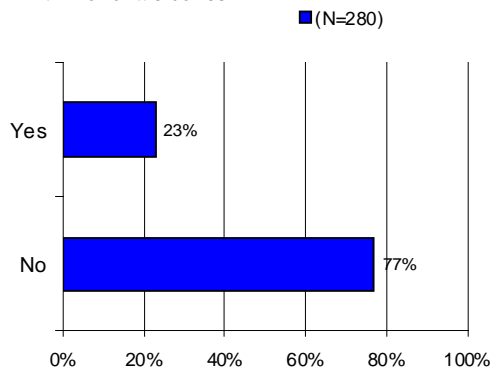
Q28. Has a doctor ever told you that you had: Arthritis of the hip or knee?



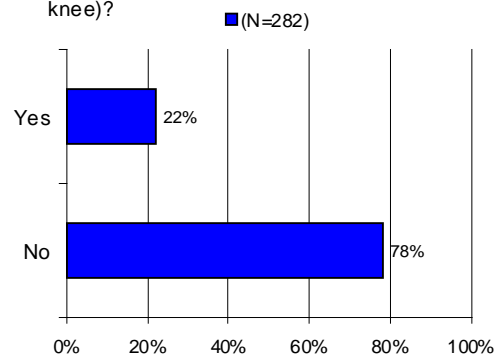
Q29. Has a doctor ever told you that you had: Arthritis of the hand or wrist?



Q30. Has a doctor ever told you that you had: Osteoporosis, sometimes called thin or brittle bones?

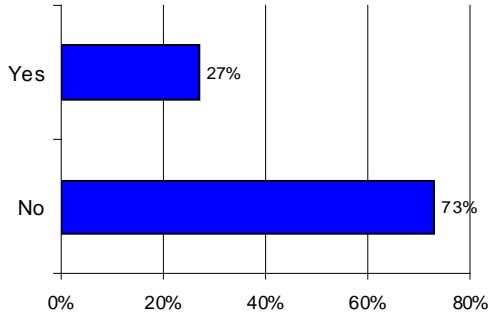


Q31. Has a doctor ever told you that you had: Sciatica (pain or numbness that travels down your leg to below your knee)?



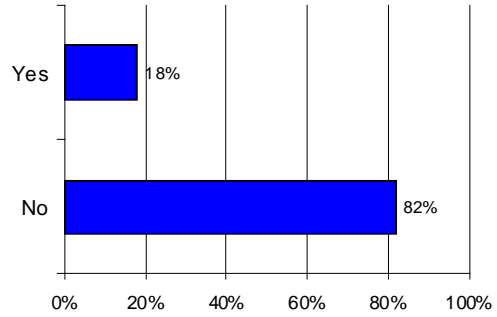
Q32. Has a doctor ever told you that you had: Diabetes, high blood sugar, or sugar in the urine?

■ (N=282)



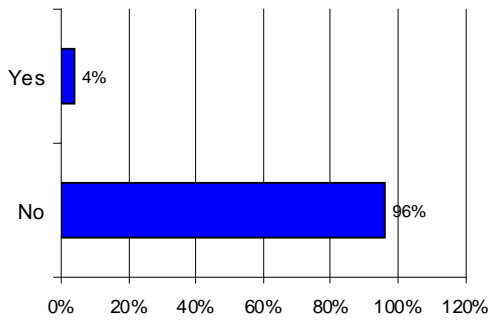
Q33. Has a doctor ever told you that you had: Any cancer (other than skin cancer)?

■ (N=280)



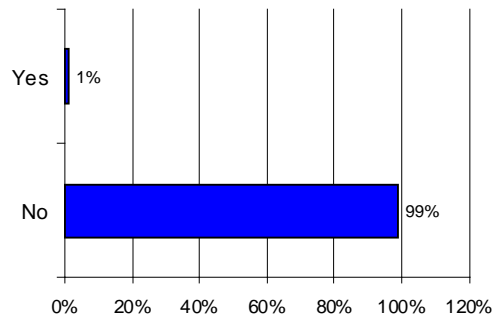
Q34a. Are you currently under treatment for: Colon or rectal cancer?

■ (N=144)



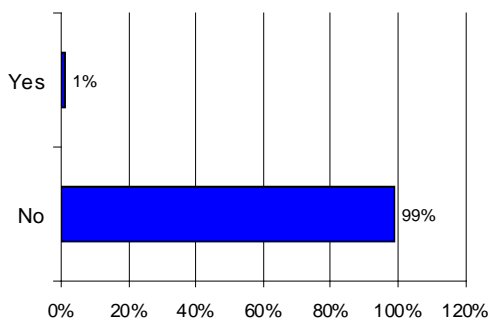
Q34b. Are you currently under treatment for: Lung cancer?

■ (N=144)



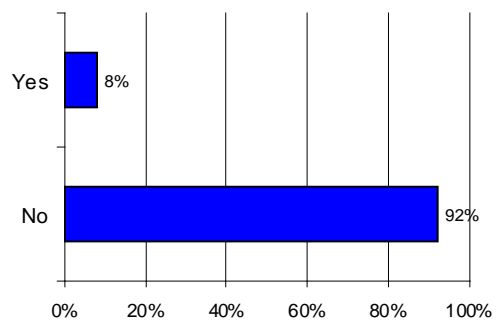
Q34c. Are you currently under treatment for: Breast cancer?

■ (N=144)

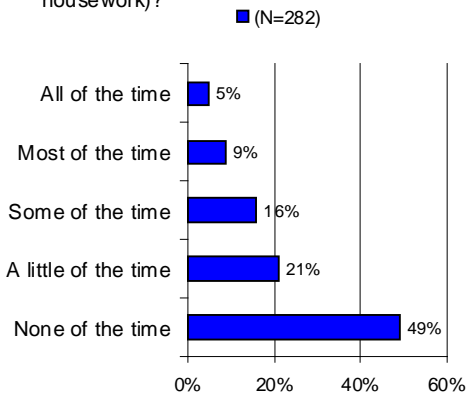


Q34d. Are you currently under treatment for: Prostate cancer?

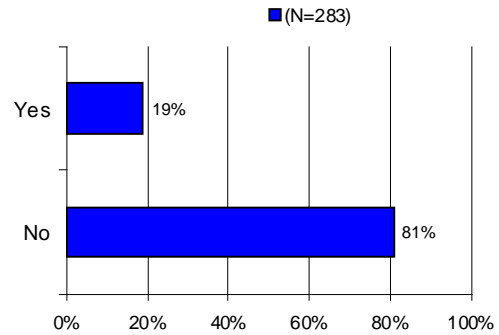
■ (N=143)



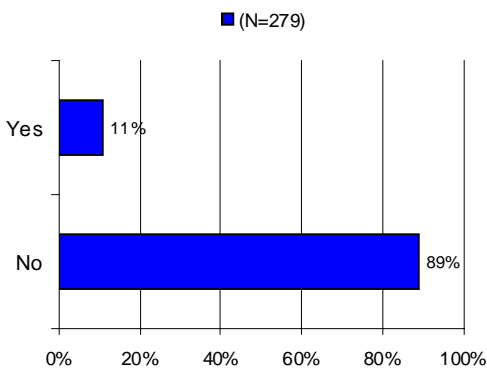
Q35. In the past 4 weeks, how often has low back pain interfered with your usual daily activities (work, school or housework)?



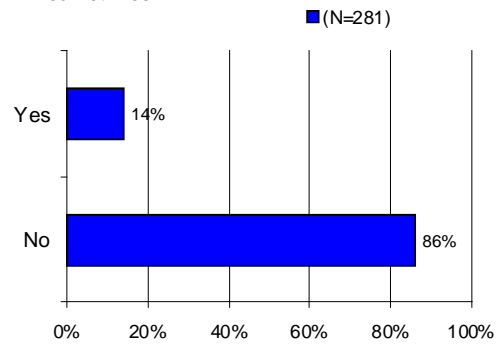
Q36. In the past year, have you had 2 weeks or more during which you felt sad, blue or depressed; or when you lost interest or pleasure in things that you usually cared about or enjoyed?



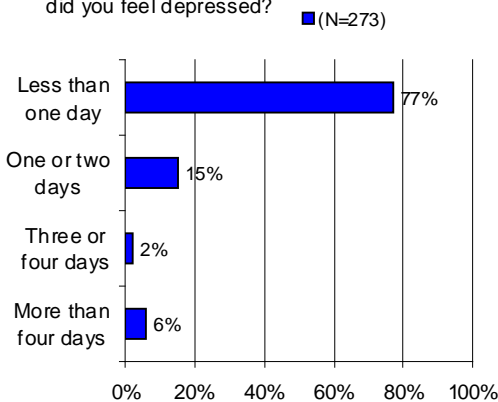
Q37. In the past year, have you felt depressed or sad much of the time?



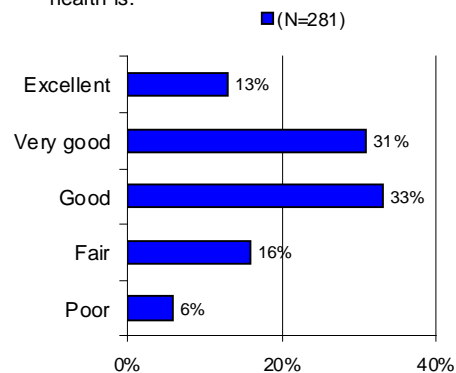
Q38. Have you ever had 2 years or more in your life when you felt depressed or sad most days, even if you felt okay sometimes?

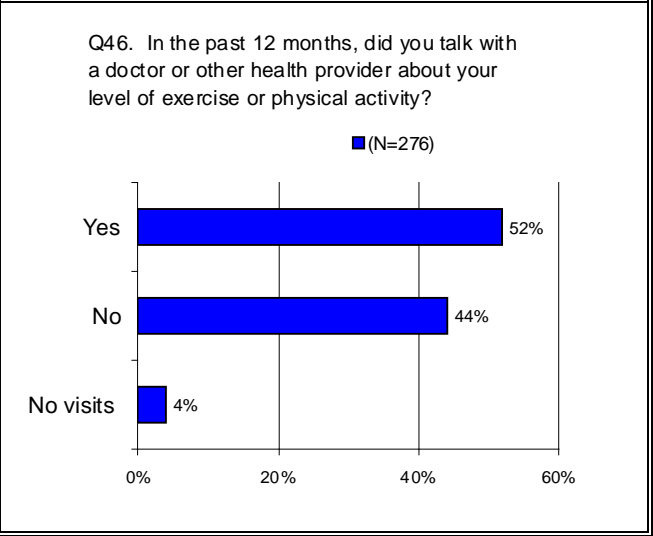
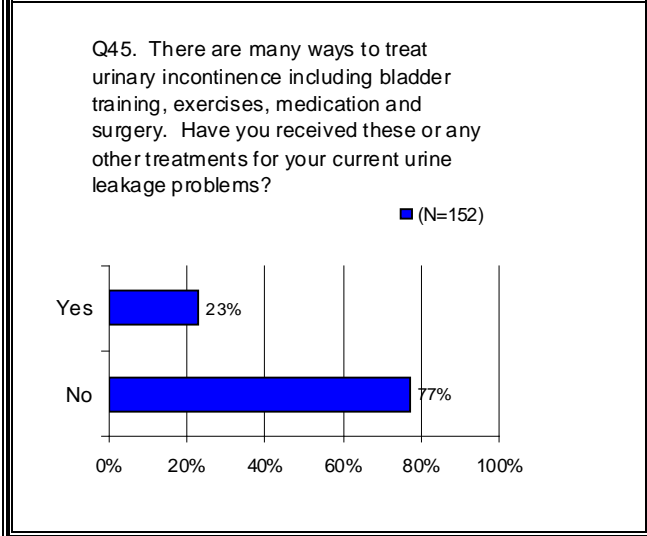
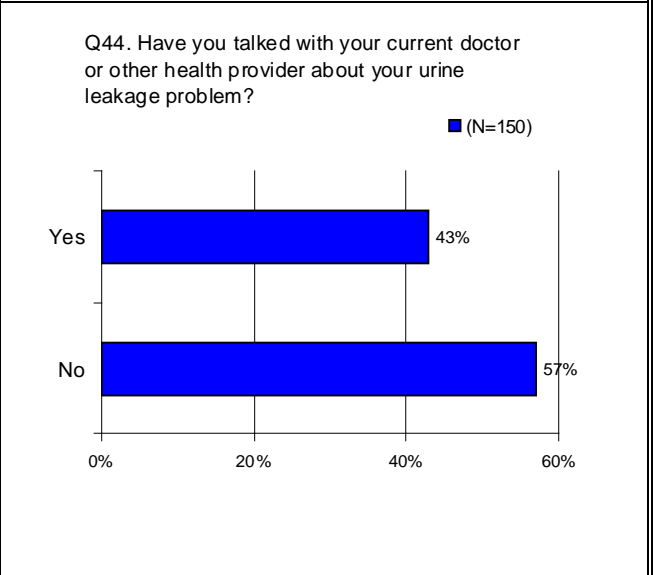
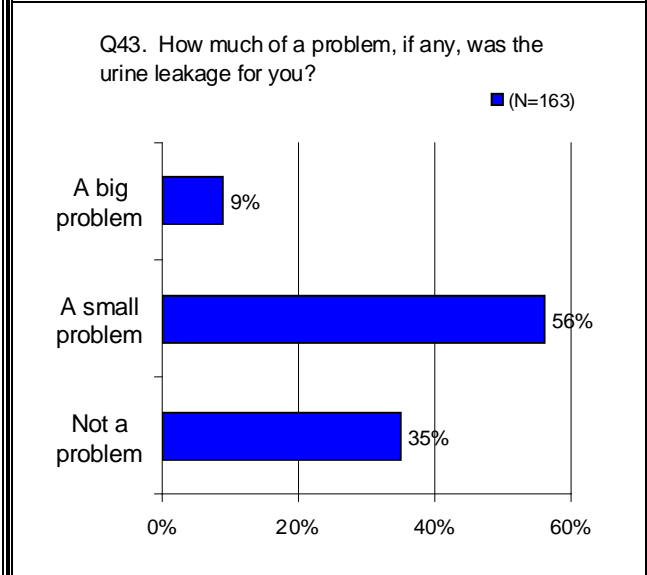
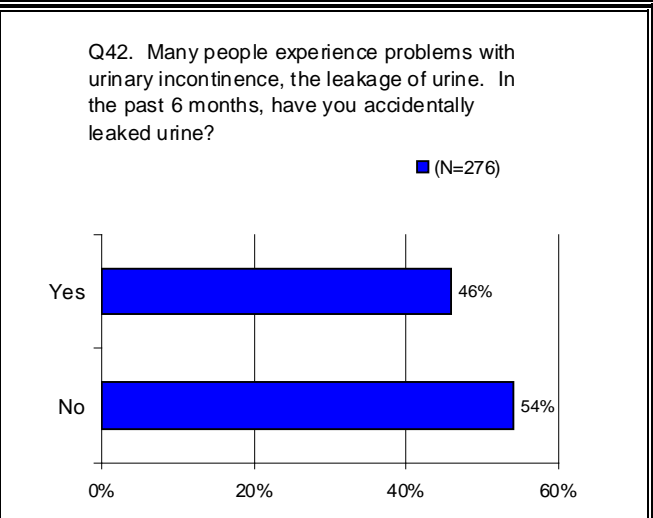
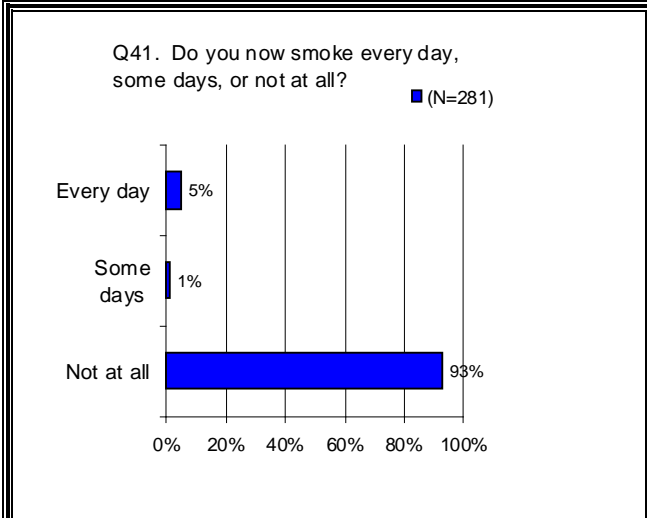


Q39. How much of the time in the past week did you feel depressed?

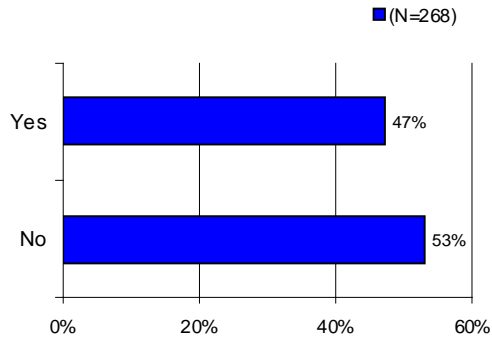


Q40. In general, compared to other people your age, would you say that your health is:

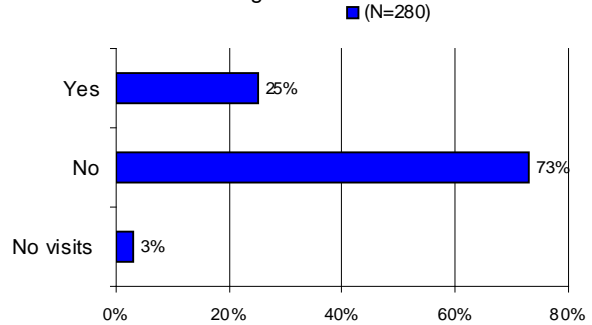




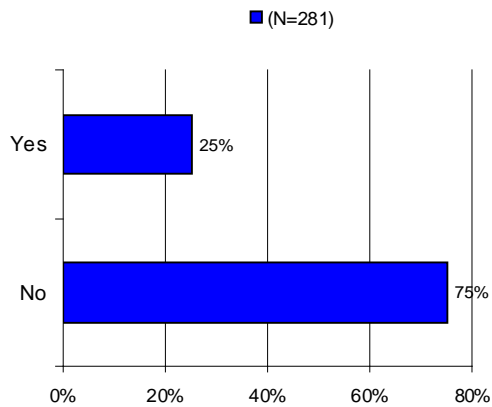
Q47. In the past 12 months, did a doctor or other health provider advise you to start, increase or maintain your level of exercise or physical activity?



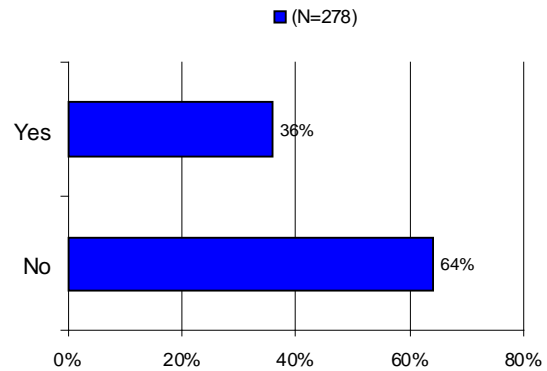
Q48. A fall is when your body goes to the ground without being pushed. In the past 12 months, did you talk with your doctor or other health provider about falling or problems with balance or walking?



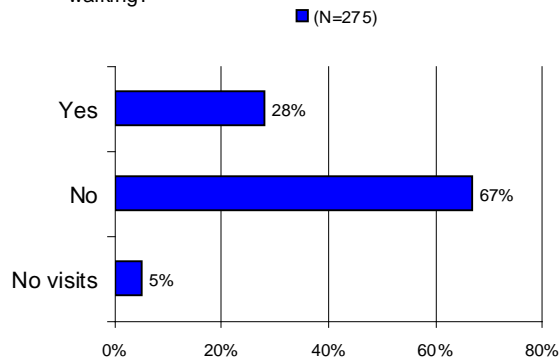
Q49. Did you fall in the past 12 months?



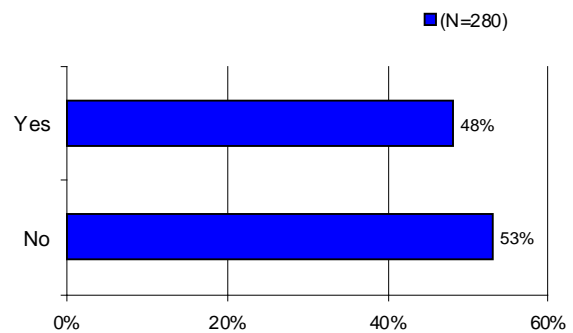
Q50. In the past 12 months, have you had a problem with balance or walking?



Q51. Has your doctor or other health provider done these or anything else to help prevent falls or treat problems with balance or walking?



Q52. Have you ever had a bone density test to check for osteoporosis, sometimes thought of as "brittle bones"? This test may have been done to your back, hip, wrist, heel or finger.



Appendix 3

HOS PARTNERS

CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS)

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Baltimore, MD 21244-1850

HOS Websites:

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HOS E-mail:

hos@cms.hhs.gov

The Health Outcomes Survey (HOS) Team at the Centers for Medicare & Medicaid Services (CMS) is responsible for leadership, oversight, coordination, and successful implementation of the national Medicare Health Outcomes Survey Program.

The team consists of Jason Petroski, PhD, Sonya Bowen, MSW, William Long, and Samuel C. “Chris” Haffer, PhD. The HOS team directs and coordinates the work of various program partners. The survey implementation and operations contractors include the National Committee for Quality Assurance (NCQA), Research Triangle Institute (RTI) International, and the Center for the Assessment of Pharmaceutical Practices (CAPP), formerly Health Outcomes Technologies Program (HOT), of the Boston University School of Public Health. The data analysis, dissemination, education, and applied research contractor is Health Services Advisory Group (HSAG).

**CENTER FOR THE ASSESSMENT OF
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(CAPP), FORMERLY HEALTH
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Department, Boston University
School of Public Health

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Website:

<http://sph.bu.edu/Health-Policy-a-Management/center-for-the-assessment-of-pharmaceutical-practices-capp/menu-id-106.html>

The Center for the Assessment of Pharmaceutical Practices (CAPP) at the Boston University School of Public Health was launched in 1998 under the leadership of Lewis E. Kazis, ScD. The principal goals of CAPP are to advance the use of patient-centered assessments of health to improve health outcomes and to advance research efforts in the areas of health outcomes, cost-effectiveness analysis, technology assessment, disease management, pharmaceutical administration, and health care policy. CAPP has integrated patient-centered measures with extensive pharmaceutical and health services databases. Dr. Kazis has formerly served as the Director of Functional Status Assessment for the Office of Quality and Performance in the Department of Veterans Affairs and is now director of the Pharmacology and Epidemiology section in the Center for Health Quality, Outcomes and Economic Research (CHQOER) in the VA. He is currently the director of the CAPP program at the Boston University School of Public Health. Dr. Kazis and his team have led several major projects in the VA involving the development of the Veterans RAND 36-Item Health Survey (VR-36), which is modified from the MOS SF-36 to provide greater precision and reliability than the original version. Well over 2 million administrations of the VR-36 have occurred in the VA since 1996. A shorter version of the VR-36, the Veterans RAND 12-Item Health Survey (VR-12), has also been developed by CAPP and administered to over 3.0 million users both inside and outside the VA. These assessments have contributed to the outcomes management system in the VA. The VR-12 is the principal outcome in HOS.

The work of the CAPP program is driven by an increased demand for new patient-based assessment tools and methodologies that can be used for clinical management and for monitoring the quality, efficiency and effectiveness of patient care.

Dr. Kazis has been involved in planning the survey content and methodology for the HOS, and has previously served on the Technical Expert Panel since the inception of the HOS. CAPP's staff have been engaged in several collaborative projects for the HOS, including comparisons of health outcomes between the HOS and the VA. The purpose of this study was to examine the differences in the outcomes of care for the HOS compared with the VA. Analyses included psychometric comparisons of a 36-item Health Survey between HOS and VA, and an examination of the differences of the disease burden of patients seen in the HOS systems of care compared with those veterans seen within the VA. A recent study examined the quality of care using medication data from the Medicare Part D data base merged with VR-12 outcomes from the HOS survey. His group has also developed imputation programs for the HOS to deal with missing values using the MOS SF-36 Version 1.0, the VR-36, and the VR-12 as well as risk adjustment models. Dr. Kazis directs a team of investigators including (in alphabetical order): Austin Lee, PhD, Xinhua S. Ren, PhD, William H. Rogers, PhD, Alfredo Selim, MD, MPH, and senior data analyst Shirley Qian, M.S.

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Health Services Advisory Group, Inc. (HSAG) is a diversified, Arizona-based Quality Improvement Organization (QIO) and External Quality Review Organization (EQRO). Established in 1979 by a group of medical professionals, HSAG has served as the Arizona QIO since 1979. In 2003, HSAG acquired the Florida QIO (FMQAI) and in 2008, HSAG was selected as the QIO for California (HSAG in California).

As a designated QIO, HSAG implements projects focused on improving the quality of healthcare services for Medicare beneficiaries. As an EQRO, HSAG is nationally recognized for its extensive experience with Medicaid programs and their populations.

HSAG is licensed by the National Committee for Quality Assurance (NCQA) to conduct HEDIS[®] Compliance Audits[™] and is an NCQA Certified HEDIS/CAHPS[®] Survey Vendor. Nationally accredited by the American Accreditation Healthcare Commission/URAC since 1993, HSAG also performs medical reviews for private and government clients.

HSAG has been CMS' data analysis, dissemination, education, and applied research contractor for the Medicare HOS program since 1998.

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The National Committee for Quality Assurance (NCQA) has served as the Centers for Medicare & Medicaid Services (CMS) contractor for implementing the HEDIS[®] Medicare Health Outcomes Survey (HOS) since the survey's inception in 1997. In this capacity, NCQA:

- Manages the data collection and transmittal of the HOS.
- Evaluates and certifies HOS survey vendors and conducts ongoing quality assurance of the survey process.
- Develops, evaluates, and refines quality measures for the HOS.
- Publishes the *HEDIS, Volume 6 Specifications for the Medicare Health Outcomes Survey*, which contains the technical specifications for the measure and survey protocol.
- Furnishes CMS, Medicare Advantage Organizations, and interested parties with training, technical assistance, and materials related to the HOS measures.

NCQA is a private, non-profit organization dedicated to improving health care quality. NCQA is committed to providing health care quality information in order to help consumers, employers and others make more informed health care choices.

NCQA accredits and certifies a wide range of health care organizations, recognizes physicians and physician groups in key clinical areas and manages the evolution of HEDIS, the tool the nation's MAOs use to measure and report on their performance. There are more than 60 different measures in HEDIS, which provide purchasers and consumers with the information they need to reliably compare the performance of managed care plans.

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RTI International is a 50-year old, nonprofit organization supporting scientific and health research. The organization was founded by a joint action of the University of North Carolina at Chapel Hill, Duke University, and North Carolina State University as the first scientific organization in the Research Triangle Park (RTP), North Carolina. RTI today comprises four research units, of which the largest encompasses statistics, health and social policy and survey research (SSS). Within SSS are the Division of Health Services and Social Policy Research (DHSSPR), which houses the former company Health Economics Research, Inc. (HER) that was acquired by RTI in 2002.

RTI currently has an in-house pool of over 2,500 multidisciplinary staff, more than half of whom conduct information-oriented research to support health and social policy-making. As a result, RTI staff have extraordinary depth of expertise in collecting, assessing, and reporting policy-oriented information and conducting health services research in many areas, including payment system design, risk adjustment, cost estimation and cost-effectiveness analysis, as well as state health care reform and Medicaid program evaluation. In addition, RTI possesses substantial capabilities in the analysis of large databases. DHER staff members are highly regarded in their respective areas of expertise and they have testified before the U.S. Congress, MedPAC (and its predecessor agencies ProPAC and PPRC), and various state commissions. Because of DHSSPR's extensive use of claims and other large databases, it employs a staff of 12 dedicated programmers. These programmers are skilled in multiple programming languages and have expertise with a wide array of databases.

RTI's main campus is located on 180 acres in North Carolina's RTP. In addition, RTI maintains well-staffed research facilities at sites in Washington, DC; Rockville, Maryland; Waltham, Massachusetts; Chicago, Illinois; Atlanta, Georgia; and at numerous project locations in the United States and abroad.

Appendix 4

2008-2010 COHORT 11 PERFORMANCE MEASUREMENT: PARTICIPATING MAOs

Please note: In January 2011, reporting units (MAOs) were updated by CMS to identify the 330 MAOs that would be included in the *Cohort 11* Performance Measurement analysis. The February 2011 CMS Monthly Enrollment by Contract Report of Managed Care Health Plans available at www.cms.gov/MCRAdvPartDENrolData, and the August 2010 Plan Contract List were used to create the following table, in order to accurately reflect the organization and product names associated with the reporting. Information in the table may have changed since February 2011.

The MAO table is sorted by state. A key to the table is included at the end of the section.

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|--|-----------|------------|
| H0104 | BLUE CROSS AND BLUE SHIELD OF ALABAMA | BLUE CROSS AND BLUE SHIELD OF ALABAMA | AL | Network |
| H0150 | HEALTHSPRING OF ALABAMA, INC. | HEALTHSPRING OF ALABAMA, INC. | AL | Mixed |
| H0151 | UNITEDHEALTHCARE OF ALABAMA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | AL | Network |
| H0154 | VIVA HEALTH, INC. | VIVA MEDICARE PLUS | AL | Network |
| H5700 | ARKANSAS COMMUNITY CARE, INC. | ARKANSAS COMMUNITY CARE | AR | Network |
| H0302 | BANNER MEDISUN, INC. | BANNER MEDISUN | AZ | Mixed |
| H0303 | PACIFICARE OF ARIZONA, INC | SECUREHORIZONS BY UNITEDHEALTHCARE | AZ | Mixed |
| H0307 | HUMANA HEALTH PLAN, INC. | HUMANA HEALTH PLAN, INC. | AZ | Mixed |
| H0316 | UNITEDHEALTHCARE OF ARIZONA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | AZ | Network |
| H0317 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | AZ | Mixed |
| H0319 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | AZ | Network |
| H0320 | ARCADIAN HEALTH PLAN, INC. | DESERT CANYON COMMUNITY CARE | AZ | Network |
| H0321 | ARIZONA PHYSICIANS IPA, INC. | UNITEDHEALTHCARE COMMUNITY PLAN | AZ | Network |
| H0351 | HEALTH NET OF ARIZONA, INC. | HEALTH NET OF ARIZONA, INC. | AZ | Mixed |
| H0354 | CIGNA HEALTHCARE OF ARIZONA, INC. | CIGNA HEALTHCARE OF ARIZONA | AZ | Staff |
| H5430 | CARE1ST HEALTH PLAN OF ARIZONA | ONECARE BY CARE1ST HEALTH PLAN ARIZONA, INC. | AZ | Network |
| H5580 | SOUTHWEST CATHOLIC HEALTH NETWORK CORPORATION | MERCY CARE ADVANTAGE | AZ | Mixed |
| H5587 | HEALTH CHOICE ARIZONA, INC. | HEALTH CHOICE GENERATIONS | AZ | Network |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--------------------------------------|-----------|------------|
| H5985 | ABRAZO ADVANTAGE HEALTH PLAN | ABRAZO ADVANTAGE HEALTH PLAN | AZ | Network |
| H0504 | CALIFORNIA PHYSICIANS' SERVICE | BLUE SHIELD OF CALIFORNIA | CA | Network |
| H0523 | AETNA HEALTH OF CALIFORNIA, INC. | AETNA MEDICARE | CA | IPA |
| H0524 | KAISER FOUNDATION HP, INC. | KAISER PERMANENTE SENIOR ADVANTAGE | CA | Group |
| H0532 | WESTERN HEALTH ADVANTAGE | WESTERN HEALTH ADVANTAGE | CA | Network |
| H0543 | PACIFICARE OF CALIFORNIA | SECUREHORIZONS BY UNITEDHEALTHCARE | CA | Network |
| H0544 | CAREMORE HEALTH PLAN | CAREMORE HEALTH PLAN | CA | Network |
| H0545 | INTER VALLEY HEALTH PLAN, INC. | INTER VALLEY HEALTH PLAN | CA | Network |
| H0562 | HEALTH NET OF CALIFORNIA | HEALTH NET OF CALIFORNIA | CA | Mixed |
| H0564 | BLUE CROSS OF CALIFORNIA | ANTHEM BLUE CROSS | CA | IPA |
| H0571 | CHINESE COMMUNITY HEALTH PLAN | CHINESE COMMUNITY HEALTH PLAN | CA | IPA |
| H0838 | HMO CALIFORNIA | BRAND NEW DAY | CA | Mixed |
| H3815 | CITIZENS CHOICE HEALTHPLAN | CITIZENS CHOICE HEALTHPLAN | CA | Mixed |
| H5425 | SCAN HEALTH PLAN | SCAN HEALTH PLAN | CA | Mixed |
| H5428 | SAN MATEO HEALTH COMMISSION | HEALTH PLAN OF SAN MATEO | CA | Mixed |
| H5433 | ORANGE COUNTY HEALTH AUTHORITY | ONECARE | CA | Network |
| H5439 | HEALTH NET LIFE INSURANCE COMPANY | HEALTH NET LIFE INSURANCE COMPANY | CA | Mixed |
| H5609 | GEMCARE HEALTH PLAN INC. | GEMCARE HEALTH PLAN | CA | Group |
| H5640 | IEHP HEALTH ACCESS | IEHP MEDICARE DUALCHOICE HMO SNP | CA | Mixed |
| H5649 | CENTRAL HEALTH PLAN OF CALIFORNIA, INC. | CENTRAL HEALTH MEDICARE PLAN | CA | Mixed |
| H5782 | PARTNERSHIP HEALTHPLAN OF CALIFORNIA | PARTNERSHIP HEALTHPLAN OF CALIFORNIA | CA | Network |
| H5810 | MOLINA HEALTHCARE OF CALIFORNIA | MOLINA HEALTHCARE OF CALIFORNIA | CA | Mixed |
| H5811 | SCAN HEALTH PLAN | SCAN HEALTH PLAN | CA | Mixed |
| H5852 | AIDS HEALTHCARE FOUNDATION | POSITIVE HEALTHCARE PARTNERS | CA | Mixed |
| H5928 | CARE1ST HEALTH PLAN | CARE1ST MEDICARE ADVANTAGE PLAN | CA | Network |
| H9104 | SCAN HEALTH PLAN | SCAN HEALTH PLAN | CA | Mixed |
| H0602 | ROCKY MOUNTAIN HEALTH MAINTENANCE ORGANIZATION | ROCKY MOUNTAIN HEALTH PLANS | CO | IPA |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--------------------------------------|--|-----------|------------|
| H0609 | PACIFICARE OF COLORADO, INC | SECUREHORIZONS BY UNITEDHEALTHCARE | CO | Mixed |
| H0620 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | CO | Network |
| H0621 | COLORADO ACCESS | COLORADO ACCESS | CO | Network |
| H0623 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | CO | Mixed |
| H0624 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | CO | Network |
| H0630 | KAISER FOUNDATION HP OF CO | KAISER PERMANENTE SENIOR ADVANTAGE | CO | Mixed |
| H0657 | COLORADO CHOICE HEALTH PLANS | COLORADO CHOICE HEALTH PLANS | CO | Network |
| H5608 | DENVER HEALTH MEDICAL PLAN, INC. | DENVER HEALTH MEDICAL PLAN | CO | Staff |
| H0710 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | CT | Network |
| H0712 | WELLCARE OF CONNECTICUT, INC. | WELLCARE | CT | Mixed |
| H0752 | OXFORD HEALTH PLANS (CT), INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | CT | Network |
| H0755 | OXFORD HEALTH PLANS (CT), INC. | UNITEDHEALTHCARE | CT | Mixed |
| H5854 | ANTHEM HEALTH PLANS, INC | ANTHEM BLUE CROSS AND BLUE SHIELD | CT | Mixed |
| H1013 | COVENTRY HEALTH PLAN OF FLORIDA, INC | COVENTRY HEALTH PLAN OF FLORIDA | FL | Mixed |
| H1016 | AVMED, INC | AVMED MEDICARE | FL | IPA |
| H1019 | CAREPLUS HEALTH PLANS, INC. | CAREPLUS HEALTH PLANS, INC. | FL | Mixed |
| H1026 | HEALTH OPTIONS, INC | HEALTH OPTIONS, INC / BLUE CROSS BLUE SHIELD OF FL | FL | IPA |
| H1032 | WELL CARE OF FLORIDA, INC. | WELLCARE | FL | Mixed |
| H1035 | FLORIDA HEALTH CARE PLAN, INC. | FLORIDA HEALTH CARE PLAN, INC. | FL | Mixed |
| H1036 | HUMANA MEDICAL PLAN, INC | HUMANA MEDICAL PLAN, INC. | FL | Network |
| H1045 | PREFERRED CARE PARTNERS INC. | PREFERRED CARE PARTNERS, INC. | FL | IPA |
| H1076 | COVENTRY HEALTH CARE OF FLORIDA, INC | COVENTRY HEALTH CARE OF FLORIDA | FL | Mixed |
| H1080 | UNITEDHEALTHCARE OF FLORIDA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | FL | Mixed |
| H1099 | HEALTH FIRST HEALTH PLANS, INC. | HEALTH FIRST MEDICARE PLANS | FL | Mixed |
| H5402 | QUALITY HEALTH PLANS, INC. | QUALITY HEALTH PLANS | FL | Network |
| H5404 | UNIVERSAL HEALTH CARE, INC. | UNIVERSAL HEALTH CARE, INC. | FL | Mixed |
| H5407 | CITRUS HEALTH CARE, INC. | CITRUS HEALTH CARE, INC. | FL | Network |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|---|-----------|------------|
| H5410 | HEALTHSPRING OF FLORIDA, INC. | HEALTHSPRING OF FLORIDA, INC. | FL | Mixed |
| H5414 | AETNA HEALTH INC. | AETNA MEDICARE | FL | IPA |
| H5415 | HUMANA HEALTH INSURANCE COMPANY OF FL, INC. | HUMANA HEALTH INSURANCE COMPANY OF FL, INC. | FL | Mixed |
| H5417 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | FL | Network |
| H5420 | MEDICA HEALTHCARE PLANS, INC. | MEDICA HEALTHCARE PLANS, INC. | FL | Network |
| H5426 | HUMANA ADVANTAGECARE PLAN, INC. | HUMANA ADVANTAGECARE PLAN, INC. | FL | Mixed |
| H5427 | FREEDOM HEALTH PLAN, INC. | FREEDOM HEALTH, INC. | FL | Mixed |
| H5429 | UNIVERSAL HEALTH CARE, INC. | UNIVERSAL HEALTH CARE, INC. | FL | Mixed |
| H5431 | HEALTHSUN HEALTH PLANS, INC. | HEALTHSUN HEALTH PLANS, INC. | FL | Network |
| H5434 | BLUE CROSS AND BLUE SHIELD OF FLORIDA, INC. | BLUE CROSS AND BLUE SHIELD OF FLORIDA, INC. | FL | Network |
| H5440 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | FL | Network |
| H5532 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | FL | Network |
| H5594 | OPTIMUM HEALTHCARE, INC. | OPTIMUM HEALTHCARE, INC. | FL | Mixed |
| H5696 | PHYSICIANS UNITED PLAN, INC. | PUP | FL | Network |
| H5850 | COVENTRY SUMMIT HEALTH PLAN, INC. | COVENTRY SUMMIT HEALTH PLAN | FL | Mixed |
| H5938 | CAPITAL HEALTH PLAN | CAPITAL HEALTH PLAN | FL | Mixed |
| H9011 | UNITEDHEALTHCARE OF FLORIDA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | FL | Mixed |
| H1108 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | GA | Network |
| H1109 | AETNA HEALTH INC.(GEORGIA) | AETNA MEDICARE | GA | IPA |
| H1111 | UNITEDHEALTHCARE OF GEORGIA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | GA | Network |
| H1112 | WELLCARE OF GEORGIA, INC. | WELLCARE | GA | Mixed |
| H1170 | KAISER FOUNDATION HP OF GA, INC. | KAISER PERMANENTE SENIOR ADVANTAGE | GA | Mixed |
| H5214 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | GA | Mixed |
| H5422 | BLUE CROSS BLUE SHIELD OF GEORGIA | BLUE CROSS BLUE SHIELD HEALTHCARE PLAN OF GEORGIA | GA | IPA |
| H1230 | KAISER FOUNDATION HP, INC. | KAISER PERMANENTE SENIOR ADVANTAGE | HI | Group |
| H1251 | HAWAII MEDICAL SERVICE ASSOCIATION (HMSA) | HMSA'S 65C PLUS | HI | Network |
| H5424 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | HI | Network |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--|-----------|------------|
| H5969 | ALOHACARE | ALOHACARE | HI | Mixed |
| H1609 | COVENTRY HEALTH CARE OF IOWA, INC. | COVENTRY HEALTH CARE | IA | Network |
| H1651 | MEDICAL ASSOCIATES HEALTH PLAN, INC. | MEDICAL ASSOCIATES HEALTH PLAN, INC. | IA | Mixed |
| H1303 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | ID | Mixed |
| H1304 | REGENCE BLUE SHIELD OF IDAHO | REGENCE BLUESHIELD OF IDAHO | ID | Mixed |
| H1350 | BLUE CROSS OF IDAHO HEALTH SERVICES, INC | BLUE CROSS OF IDAHO | ID | Mixed |
| H1406 | HUMANA HEALTH PLAN, INC. | HUMANA HEALTH PLAN, INC. | IL | Mixed |
| H1415 | HEALTHSPRING OF TENNESSEE, INC. | HEALTHSPRING, INC. | IL | Mixed |
| H1416 | HARMONY HEALTH PLAN OF ILLINOIS, INC. | WELLCARE | IL | Mixed |
| H1417 | HEALTH ALLIANCE MEDICAL PLANS | HEALTH ALLIANCE MEDICAL PLANS | IL | Mixed |
| H1418 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | IL | Mixed |
| H1419 | AETNA HEALTH, INC. | AETNA MEDICARE | IL | IPA |
| H1463 | HEALTH ALLIANCE MEDICAL PLANS | HEALTH ALLIANCE MEDICAL PLANS | IL | Mixed |
| H1468 | HUMANA BENEFIT PLAN OF ILLINOIS, INC | HUMANA BENEFIT PLAN OF ILLINOIS, INC. | IL | Mixed |
| H5525 | HUMANA BENEFIT PLAN OF ILLINOIS, INC. | HUMANA BENEFIT PLAN OF ILLINOIS, INC. | IL | Mixed |
| H1509 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | IN | Network |
| H1553 | CLARIAN HEALTH PLANS, INC. | CLARIAN HEALTH PLANS, INC. - SENIOR SMART CHOICE | IN | Network |
| H1558 | WELBORN HEALTH PLAN | WELBORN HEALTH PLANS | IN | Mixed |
| H1607 | ANTHEM INSURANCE COMPANIES, INC. | ANTHEM BLUE CROSS AND BLUE SHIELD | IN | Mixed |
| H5508 | ADVANTAGE HEALTH SOLUTIONS, INC. | ADVANTAGE HEALTH SOLUTIONS, INC. | IN | Network |
| H2672 | COVENTRY HEALTH CARE OF KANSAS, INC. | COVENTRY HEALTH CARE | KS | IPA |
| H1806 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | KY | Mixed |
| H1807 | UNIVERSITY HEALTH CARE, INC. | PASSPORT ADVANTAGE | KY | Network |
| H1849 | ANTHEM HEALTH PLANS OF KENTUCKY, INC. | ANTHEM BLUE CROSS AND BLUE SHIELD | KY | Network |
| H5530 | ANTHEM HEALTH PLANS OF KENTUCKY, INC. | ANTHEM BLUE CROSS AND BLUE SHIELD | KY | Network |
| H1903 | WELLCARE OF LOUISIANA, INC. | WELLCARE | LA | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|---|-----------|------------|
| H1951 | HUMANA HEALTH BENEFIT PLAN OF LOUISIANA INC | HUMANA HEALTH BENEFIT PLAN OF LOUISIANA INC | LA | Network |
| H1961 | PEOPLES HEALTH, INC. | PEOPLES HEALTH | LA | IPA |
| H5576 | VANTAGE HEALTH PLAN, INC. | VANTAGE HEALTH PLAN, INC. | LA | Network |
| H2228 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | MA | Network |
| H2256 | TUFTS ASSOCIATED HMO, INC. | TUFTS HEALTH PLAN MEDICARE PREFERRED | MA | Group |
| H2261 | BLUE CROSS AND BLUE SHIELD OF MA HMO BLUE, INC. | BLUE CROSS BLUE SHIELD OF MASSACHUSETTS | MA | Mixed |
| H9001 | FALLON COMMUNITY HEALTH PLAN | FALLON COMMUNITY HEALTH PLAN | MA | Mixed |
| H2108 | BRAVO HEALTH MID- ATLANTIC INC. | BRAVO HEALTH | MD | Network |
| H2111 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | MD | Network |
| H2112 | AETNA HEALTH, INC. | AETNA MEDICARE | MD | IPA |
| H2150 | KAISER FNDN HP OF THE MID-ATLANTIC STS | KAISER PERMANENTE MEDICARE PLUS | MD | Group |
| H5665 | CARE IMPROVEMENT PLUS OF MARYLAND, INC. | CARE IMPROVEMENT PLUS | MD | Mixed |
| H2001 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | ME | Network |
| H2312 | HEALTH ALLIANCE PLAN OF MICHIGAN | HAP SENIOR PLUS | MI | Mixed |
| H2320 | PRIORITY HEALTH | PRIORITY HEALTH MEDICARE | MI | IPA |
| H2322 | ALLIANCE HEALTH AND LIFE INSURANCE, CO | ALLIANCE MEDICARE PPO | MI | Mixed |
| H2323 | FIDELIS SECURECARE OF MICHIGAN | FIDELIS SECURECARE OF MICHIGAN | MI | Network |
| H2354 | HEALTHPLUS OF MICHIGAN | HEALTHPLUS OF MICHIGAN | MI | Network |
| H5883 | BLUE CARE NETWORK OF MICHIGAN | BLUE CARE NETWORK | MI | Mixed |
| H5926 | MOLINA HEALTHCARE OF MICHIGAN | MOLINA HEALTHCARE OF MICHIGAN | MI | Mixed |
| H2450 | MEDICA INSURANCE COMPANY | MEDICA INSURANCE COMPANY | MN | Mixed |
| H2459 | UCARE MINNESOTA | UCARE | MN | IPA |
| H2461 | BLUE CROSS BLUE SHIELD OF MINNESOTA | BLUE CROSS AND BLUE SHIELD OF MINNESOTA | MN | Network |
| H2462 | GROUP HEALTH INC, | HEALTHPARTNERS FREEDOM PLAN | MN | Mixed |
| H5703 | SOUTH COUNTRY HEALTH ALLIANCE | SOUTH COUNTRY HEALTH ALLIANCE | MN | IPA |
| H9005 | HEALTHPARTNERS, INC. | HEALTHPARTNERS CLASSIC PLAN | MN | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--|-----------|------------|
| H1716 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | MO | Mixed |
| H2610 | ESSENCE HEALTHCARE, INC. | ESSENCE HEALTHCARE | MO | Mixed |
| H2611 | MERCY HEALTH PLANS | MERCY HEALTH PLANS | MO | Mixed |
| H2649 | HUMANA HEALTH PLAN, INC. | HUMANA HEALTH PLAN, INC. | MO | Mixed |
| H2654 | UNITEDHEALTHCARE OF THE MIDWEST, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | MO | Network |
| H2663 | GROUP HEALTH PLAN, INC. | GROUP HEALTH PLAN, INC. | MO | IPA |
| H2667 | MERCY HEALTH PLANS OF MISSOURI INC. | MERCY HEALTH PLANS OF MISSOURI, INC. | MO | Mixed |
| H5507 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | MO | Mixed |
| H5509 | COVENTRY HEALTH AND LIFE INS. COMPANY | COVENTRY HEALTH CARE | MO | IPA |
| H4407 | HEALTHSPRING OF TENNESSEE, INC. | HEALTHSPRING, INC. | MS | Mixed |
| H2701 | NEW WEST HEALTH SERVICES | NEW WEST HEALTH SERVICES | MT | Network |
| H3404 | BLUE CROSS AND BLUE SHIELD OF NORTH CAROLINA | BLUE CROSS AND BLUE SHIELD OF NORTH CAROLINA | NC | Mixed |
| H3449 | BLUE CROSS AND BLUE SHIELD OF NORTH CAROLINA | BLUE CROSS AND BLUE SHIELD OF NORTH CAROLINA | NC | Mixed |
| H3456 | UNITEDHEALTHCARE OF NORTH CAROLINA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | NC | Network |
| H5516 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | NC | Network |
| H2802 | UNITEDHEALTHCARE OF THE MIDLANDS, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | NE | Network |
| H2803 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | NE | Mixed |
| H3107 | OXFORD HEALTH PLANS (NJ), INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | NJ | Network |
| H3152 | AETNA HEALTH, INC. | AETNA MEDICARE | NJ | IPA |
| H3154 | HORIZON HEALTHCARE OF NEW JERSEY, INC. | HORIZON BLUE CROSS BLUE SHIELD OF NEW JERSEY, INC. | NJ | Mixed |
| H3156 | AMERIHEALTH HMO_INC | AMERIHEALTH 65 | NJ | Mixed |
| H3164 | AMERICHOICE OF NEW JERSEY, INC | UNITEDHEALTHCARE COMMUNITY PLAN | NJ | Network |
| H3204 | PRESBYTERIAN HEALTH PLAN | PRESBYTERIAN SENIOR CARE (HMO) | NM | Mixed |
| H3206 | PRESBYTERIAN INSURANCE COMPANY, INC. | PRESBYTERIAN MEDICARE PPO | NM | Mixed |
| H3251 | LOVELACE HEALTH SYSTEM, INC. | LOVELACE SENIOR PLAN | NM | Mixed |
| H2931 | HEALTH PLAN OF NEVADA, INC. | HEALTH PLAN OF NEVADA, INC. | NV | Mixed |
| H2949 | HUMANA HEALTH PLAN, INC. | HUMANA HEALTH PLAN, INC. | NV | Mixed |
| H2960 | HOMETOWN HEALTH PLAN | SENIOR CARE PLUS | NV | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--|-----------|------------|
| H2961 | HEALTH PLAN OF NEVADA, INC. | HEALTH PLAN OF NEVADA, INC. | NV | Mixed |
| H3305 | MVP HEALTH PLAN, INC. | MVP HEALTH CARE | NY | Mixed |
| H3307 | OXFORD HEALTH PLANS (NY), INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | NY | Network |
| H3312 | AETNA HEALTH INC. | AETNA MEDICARE | NY | IPA |
| H3327 | TOUCHSTONE HEALTH HMO, INC. | TOUCHSTONE HEALTH | NY | Network |
| H3328 | NEW YORK STATE CATHOLIC HLTH PLAN INC | FIDELIS CARE | NY | Network |
| H3330 | HEALTH INSURANCE PLAN OF GREATER NEW YORK | EMBLEMHEALTH MEDICARE HMO | NY | Mixed |
| H3335 | EXCELLUS HEALTH PLAN, INC. | EXCELLUS HEALTH PLAN, INC | NY | Mixed |
| H3337 | LIBERTY HEALTH ADVANTAGE, INC. | LIBERTY HEALTH ADVANTAGE | NY | Mixed |
| H3342 | EMPIRE HEALTHCHOICE ASSURANCE, INC. | EMPIRE BLUECROSS BLUESHIELD | NY | Mixed |
| H3344 | INDEPENDENT HEALTH BENEFITS CORPORATION | INDEPENDENT HEALTH | NY | IPA |
| H3351 | EXCELLUS HEALTH PLAN, INC. | EXCELLUS HEALTH PLAN, INC | NY | Mixed |
| H3359 | MANAGED HEALTH, INC. | HEALTHFIRST MEDICARE PLAN | NY | Network |
| H3361 | WELLCARE_OF NEW YORK, INC. | WELLCARE | NY | Mixed |
| H3362 | INDEPENDENT HEALTH ASSOCIATION, INC. | INDEPENDENT HEALTH | NY | IPA |
| H3370 | EMPIRE HEALTHCHOICE HMO, INC. | EMPIRE BLUECROSS BLUESHIELD | NY | Mixed |
| H3379 | UNITEDHEALTHCARE OF NEW YORK, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | NY | Mixed |
| H3384 | HEALTHNOW NEW YORK INC | BLUECROSS BLUESHIELD OF WNY AND BLUESHIELD OF NENY | NY | Mixed |
| H3387 | UNITEDHEALTHCARE OF NEW YORK, INC. | UNITEDHEALTHCARE COMMUNITY PLAN | NY | Network |
| H3388 | CAPITAL DISTRICT PHYSICIANS' HEALTH PLAN, INC. | CDPHP MEDICARE CHOICES | NY | IPA |
| H5526 | HEALTHNOW NEW YORK INC. | BLUECROSS BLUESHIELD OF WNY AND BLUESHIELD OF NENY | NY | Mixed |
| H5528 | GROUP HEALTH INCORPORATED | EMBLEMHEALTH MEDICARE PPO | NY | Mixed |
| H9101 | ELDERPLAN, INC. - SHMO | ELDERPLAN, INC. | NY | Network |
| H9859 | MVP HEALTH PLAN, INC. | MVP HEALTH CARE | NY | Mixed |
| H2406 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | OH | Mixed |
| H3619 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | OH | Mixed |
| H3623 | AETNA HEALTH, INC. | AETNA MEDICARE | OH | IPA |
| H3653 | PARAMOUNT CARE, INC | PARAMOUNT ELITE | OH | IPA |
| H3655 | COMMUNITY INSURANCE COMPANY | ANTHEM BLUE CROSS AND BLUE SHIELD | OH | Network |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|---|-----------|------------|
| H3659 | UNITEDHEALTHCARE OF OHIO, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | OH | Network |
| H3660 | SUMMACARE INC. | SUMMACARE SECURE | OH | Mixed |
| H3664 | MCKINLEY LIFE INSURANCE COMPANY | PRIMETIME HEALTH PLAN | OH | Mixed |
| H3668 | MT. CARMEL HEALTH PLAN, INC. | MEDIGOLD | OH | Network |
| H3672 | HOMETOWN HEALTH PLAN | THE HEALTH PLAN | OH | Mixed |
| H5529 | COMMUNITY INSURANCE COMPANY | ANTHEM BLUE CROSS AND BLUE SHIELD | OH | Network |
| H6360 | KAISER FOUNDATION HP OF OHIO | KAISER PERMANENTE MEDICARE PLUS | OH | Mixed |
| H9313 | MEDICAL MUTUAL OF OHIO | ADVANTAGE PLANS FROM MEDICAL MUTUAL OF OHIO | OH | Mixed |
| H3706 | GLOBALHEALTH, INC. | UNIVERSAL AMERICAN | OK | Mixed |
| H3709 | HCSC INSURANCE SERVICES COMPANY | MEDICAREBLUE PPO | OK | IPA |
| H3749 | PACIFICARE OF OKLAHOMA, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | OK | Mixed |
| H3755 | COMMUNITY CARE HMO, INC | COMMUNITYCARE SENIOR HEALTH PLAN | OK | Mixed |
| H2174 | TRILLIUM COMMUNITY HEALTH PLAN | TRILLIUM ADVANTAGE | OR | Network |
| H3805 | PACIFICARE OF OREGON, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | OR | Network |
| H3810 | MID ROGUE INDEPENDENT PHYSICIAN ASSOCIATION | CARESOURCE | OR | IPA |
| H3811 | SAMARITAN HEALTH PLANS, INC. | SAMARITAN ADVANTAGE HEALTH PLAN | OR | Mixed |
| H3812 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | OR | Network |
| H3814 | ATRIO HEALTH PLANS | ATRIO HEALTH PLANS | OR | Network |
| H3817 | REGENCE BLUECROSS BLUESHIELD OF OR | REGENCE BLUECROSS BLUESHIELD OF OREGON | OR | Mixed |
| H3818 | FAMILYCARE HEALTH PLANS, INC. | FAMILYCARE HEALTH PLANS, INC. | OR | Network |
| H3864 | CLEAR ONE HEALTH PLANS, INC. | CLEAR ONE HEALTH PLANS | OR | Mixed |
| H5520 | HEALTH NET LIFE INSURANCE COMPANY | HEALTH NET MEDICARE ADVANTAGE | OR | Mixed |
| H5859 | HEALTH PLAN OF CAREOREGON, INC. | CAREOREGON ADVANTAGE | OR | Network |
| H5995 | MARION POLK COMMUNITY HEALTH PLAN ADVANTAGE, INC. | MARION POLK COMMUNITY HEALTH PLAN ADVANTAGE, INC. | OR | IPA |
| H9003 | KAISER FOUNDATION HP OF THE N W | KAISER PERMANENTE | OR | Group |
| H9047 | PROVIDENCE HEALTH PLAN | PROVIDENCE HEALTH PLANS | OR | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|--|-----------|------------|
| H3907 | UNIVERSITY OF PITTSBURGH MEDICAL CENTER | UPMC HEALTH PLAN | PA | Network |
| H3909 | QCC INSURANCE COMPANY | PERSONAL CHOICE 65 | PA | Mixed |
| H3912 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | PA | Network |
| H3916 | HIGHMARK, INC. | HIGHMARK INC. | PA | IPA |
| H3920 | UNITEDHEALTHCARE OF PENNSYLVANIA, INC. | UNITEDHEALTHCARE COMMUNITY PLAN | PA | Network |
| H3923 | CAPITAL ADVANTAGE INSURANCE COMPANY | CAPITAL ADVANTAGE INSURANCE COMPANY | PA | Network |
| H3931 | AETNA HEALTH INC | AETNA MEDICARE | PA | IPA |
| H3949 | BRAVO HEALTH PENNSYLVANIA INC. | BRAVO HEALTH | PA | Mixed |
| H3952 | KEYSTONE HEALTH PLAN EAST, INC. | KEYSTONE 65 | PA | Network |
| H3954 | GEISINGER HEALTH PLAN | GEISINGER GOLD | PA | Mixed |
| H3957 | KEYSTONE HEALTH PLAN WEST, INC. | KEYSTONE HEALTH PLAN WEST, INC. | PA | IPA |
| H3959 | HEALTHAMERICA PENNSYLVANIA, INC. | HEALTHAMERICA | PA | Network |
| H3962 | KEYSTONE HEALTH PLAN CENTRAL, INC. | KEYSTONE HEALTH PLAN CENTRAL, INC. | PA | Network |
| H3964 | BRAVO HEALTH PENNSYLVANIA, INC. | BRAVO HEALTH | PA | Mixed |
| H5521 | AETNA LIFE INSURANCE COMPANY | AETNA MEDICARE | PA | Mixed |
| H5533 | UPMC HEALTH NETWORK | UPMC HEALTH PLAN | PA | Network |
| H5932 | GATEWAY HEALTH PLAN, INC. | GATEWAY HEALTH PLAN MEDICARE ASSURED | PA | IPA |
| H4003 | MMM HEALTHCARE, INC. | MEDICARE Y MUCHO MÁS | PR | Mixed |
| H4004 | PREFERRED MEDICARE CHOICE, INC. | PREFERRED MEDICARE CHOICE, INC. | PR | Mixed |
| H4005 | TRIPLE-S SALUD, INC. | TRIPLE-S SALUD, INC. | PR | Mixed |
| H4006 | MCS ADVANTAGE INC. | MCS CLASSICARE | PR | Network |
| H4007 | HUMANA HEALTH PLANS OF PUERTO RICO INC | HUMANA HEALTH PLANS OF PUERTO RICO INC | PR | Mixed |
| H4011 | FIRST MEDICAL HEALTH PLAN, INC. | FIRST MEDICAL HEALTH PLAN, INC. | PR | Network |
| H4012 | TRIPLE-S SALUD, INC. | TRIPLE-S SALUD, INC. | PR | IPA |
| H5732 | TRIPLE-S SALUD, INC. | TRIPLE-S SALUD, INC. | PR | IPA |
| H5774 | AMERICAN HEALTH, INC. | AMERICAN HEALTH MEDICARE | PR | Mixed |
| H5821 | MAPFRE LIFE INSURANCE COMPANY | MAPFRE LIFE INSURANCE COMPANY | PR | Network |
| H4102 | UNITEDHEALTHCARE OF NEW ENGLAND, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | RI | Network |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--|-----------|------------|
| H4152 | BLUE CROSS & BLUE SHIELD OF RHODE ISLAND | BLUE CROSS & BLUE SHIELD OF RHODE ISLAND | RI | Network |
| H5783 | ARCADIAN HEALTH PLAN, INC. | SOUTHEAST COMMUNITY CARE | SC | Network |
| H0251 | UNITEDHEALTHCARE PLAN OF THE RIVER VALLEY, INC. | UNITEDHEALTHCARE COMMUNITY PLAN | TN | Mixed |
| H4406 | UNITEDHEALTHCARE PLAN OF THE RIVER VALLEY, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | TN | Network |
| H4454 | HEALTHSPRING OF TENNESSEE, INC. | HEALTHSPRING | TN | Mixed |
| H4456 | UNITEDHEALTHCARE PLAN OF THE RIVER VALLEY, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | TN | Mixed |
| H4461 | CARITEN HEALTH PLAN INC. | CARITEN HEALTH PLAN, INC. | TN | Mixed |
| H5698 | WINDSOR HEALTH PLAN, INC. | WINDSOR MEDICARE EXTRA | TN | Network |
| H5998 | UNITEDHEALTHCARE PLAN OF THE RIVER VALLEY, INC. | UNITEDHEALTHCARE COMMUNITY PLAN | TN | Network |
| H4506 | SELECTCARE OF TEXAS, L.L.C. | UNIVERSAL AMERICAN | TX | IPA |
| H4510 | HUMANA HEALTH PLAN OF TEXAS, INC. | HUMANA HEALTH PLAN OF TEXAS, INC. | TX | Network |
| H4513 | HEALTHSPRING LIFE & HEALTH INSURANCE COMPANY, INC. | HEALTHSPRING | TX | Mixed |
| H4514 | EVERCARE OF TEXAS, LLC | EVERCARE BY UNITEDHEALTHCARE | TX | Mixed |
| H4520 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | TX | Mixed |
| H4522 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | TX | Network |
| H4523 | AETNA HEALTH INC. | AETNA MEDICARE | TX | IPA |
| H4524 | AETNA LIFE INSURANCE COMPANY | AETNA MEDICARE | TX | Mixed |
| H4525 | SHA, L.L.C | FIRSTCARE ADVANTAGE | TX | Network |
| H4527 | PHYSICIANS HEALTH CHOICE OF TEXAS LLC | PHYSICIANS HEALTH CHOICE | TX | Network |
| H4528 | BRAVO HEALTH TEXAS, INC. | BRAVO HEALTH | TX | Mixed |
| H4529 | ARCADIAN HEALTH PLAN, INC. | TEXAS COMMUNITY CARE | TX | Network |
| H4564 | SCOTT AND WHITE HEALTH PLAN | SCOTT AND WHITE HEALTH PLAN SENIORCARE | TX | Mixed |
| H4590 | PACIFICARE OF TEXAS, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | TX | Mixed |
| H5817 | AMERIGROUP TEXAS, INC. | AMERIGROUP COMMUNITY CARE | TX | Mixed |
| H4604 | UNITEDHEALTHCARE OF UTAH, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | UT | Network |
| H4605 | REGENCE BLUECROSS BLUESHIELD OF UT | REGENCE BLUECROSS BLUESHIELD OF UTAH | UT | Mixed |
| H4606 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | UT | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|--|--|-----------|------------|
| H5628 | MOLINA HEALTHCARE OF UTAH, INC. | MOLINA HEALTHCARE OF UTAH | UT | Network |
| H4908 | OPTIMA HEALTH INSURANCE COMPANY | OPTIMA MEDICARE | VA | Network |
| H4909 | ANTHEM HEALTH PLANS OF VIRGINIA, INC. | ANTHEM BLUE CROSS AND BLUE SHIELD | VA | Network |
| H5005 | PACIFICARE OF WASHINGTON, INC. | SECUREHORIZONS BY UNITEDHEALTHCARE | WA | Network |
| H5008 | UNITEDHEALTHCARE INSURANCE COMPANY | EVERCARE BY UNITEDHEALTHCARE | WA | Network |
| H5009 | REGENCE BLUESHIELD | REGENCE BLUESHIELD | WA | Mixed |
| H5010 | ASURIS NORTHWEST HEALTH | ASURIS NORTHWEST HEALTH | WA | Mixed |
| H5050 | GROUP HEALTH COOPERATIVE | GROUP HEALTH COOPERATIVE | WA | Mixed |
| H5416 | ARCADIAN HEALTH PLAN, INC. | SPOKANE COMMUNITY CARE | WA | Network |
| H5826 | COMMUNITY HEALTH PLAN OF WASHINGTON | COMMUNITY HEALTHFIRST MEDICARE ADVANTAGE PLAN | WA | Mixed |
| H2237 | INDEPENDENT CARE HEALTH PLAN, INC. | ICARE | WI | Mixed |
| H5211 | SECURITY HEALTH PLAN OF WISCONSIN, INC | ADVOCARE | WI | Mixed |
| H5215 | NETWORK HEALTH INSURANCE CORPORATION | NETWORK PLATINUM MEDICARE ADVANTAGE PLANS | WI | Network |
| H5216 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | WI | Mixed |
| H5253 | UNITEDHEALTHCARE OF WISCONSIN, INC | SECUREHORIZONS BY UNITEDHEALTHCARE | WI | Mixed |
| H5256 | MEDICAL ASSOCIATES CLINIC HEALTH PLAN | MEDICAL ASSOCIATES CLINIC HEALTH PLAN OF WISCONSIN | WI | Mixed |
| H5262 | GUNDERSEN LUTHERAN HEALTH PLAN | GUNDERSEN LUTHERAN HEALTH PLAN, INC. | WI | Network |
| H5264 | DEAN HEALTH PLAN, INC. | DEAN HEALTH PLAN, INC. | WI | Mixed |
| H8742 | ABRI HEALTH PLAN, INC | UNIVERSAL AMERICAN | WI | IPA |
| H5106 | HIGHMARK HEALTH INSURANCE COMPANY | HIGHMARK HEALTH INSURANCE COMPANY | WV | IPA |
| H5151 | HEALTH PLAN OF THE UPPER OHIO VALLEY | THE HEALTH PLAN | WV | Mixed |
| H0540 | UNICARE LIFE AND HEALTH INS. COMPANY | UNICARE LIFE & HEALTH INS. COMPANY | FS | Mixed |
| H1689 | ANTHEM INSURANCE COMPANIES, INC. | ANTHEM INSURANCE COMPANIES, INC. | FS | Mixed |
| H1804 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | FS | Mixed |
| H1906 | HUMANA HEALTH BENEFIT PLAN OF LA, INC. | HUMANA HEALTH BENEFIT PLAN OF LA, INC. | FS | Mixed |
| H2410 | MEDICA HEALTH PLANS | MEDICA HEALTH PLANS | FS | Mixed |
| H5006 | STERLING LIFE INSURANCE COMPANY | STERLING LIFE INSURANCE COMPANY | FS | Mixed |

| REPORTING UNIT | MAO ORGANIZATION NAME | MAO PRODUCT NAME | MAO STATE | MODEL TYPE |
|----------------|---|---|-----------|------------|
| H5419 | BLUE CROSS OF CALIFORNIA | ANTHEM BLUE CROSS | FS | Mixed |
| H5435 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | FS | Network |
| H5884 | BLUECROSS BLUESHIELD OF TENNESSEE | BLUECROSS BLUESHIELD OF TENNESSEE | FS | Network |
| R3175 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | RS | Network |
| R3444 | CARE IMPROVEMENT PLUS SOUTH CENTRAL INSURANCE CO. | CARE IMPROVEMENT PLUS | RS | Mixed |
| R5287 | UNITEDHEALTHCARE INSURANCE COMPANY | SECUREHORIZONS BY UNITEDHEALTHCARE | RS | Mixed |
| R5342 | UNITEDHEALTHCARE INSURANCE COMPANY OF NEW YORK | SECUREHORIZONS BY UNITEDHEALTHCARE | RS | Mixed |
| R5566 | BCBS MN, MT, NE, ND, WY, WELLMARK IA AND SD | MEDICAREBLUE PPO | RS | Network |
| R5674 | SIERRA HEALTH AND LIFE INSURANCE COMPANY, INC. | SIERRA HEALTH AND LIFE INSURANCE COMPANY, INC. | RS | Mixed |
| R5826 | HUMANA INSURANCE COMPANY | HUMANA INSURANCE COMPANY | RS | Network |
| R5941 | ANTHEM INSURANCE COMPANIES, INC. | ANTHEM BLUE CROSS AND BLUE SHIELD | RS | Network |
| R6801 | CARE IMPROVEMENT PLUS OF TEXAS INSURANCE COMPANY | CARE IMPROVEMENT PLUS | RS | Mixed |
| R9896 | CARE IMPROVEMENT PLUS SOUTH CENTRAL INSURANCE CO | CARE IMPROVEMENT PLUS | RS | Mixed |
| R9943 | ANTHEM BLUE CROSS LIFE AND HEALTH INSURANCE CO. | ANTHEM BLUE CROSS LIFE & HEALTH INSURANCE COMPANY | RS | Network |

KEY TO THE PARTICIPATING MAOs TABLE:

| Category | Abbreviation | Definition |
|------------|---------------------|--|
| MODEL TYPE | GROUP | <p>Group Practice Model</p> <p>The Group Practice Model is a health maintenance organization model in which the HMO contracts with one or more medical group(s) on a capitated basis for the provision of services. The physicians practice in a common facility and use common professional, technical, and administrative staff. Income is pooled and distributed according to an agreed upon plan.</p> |
| | STAFF | <p>Staff Model</p> <p>The Staff Model is an organizational form whereby the HMO employs the necessary medical providers to provide its medical services. These physicians are typically paid on a salary basis.</p> |
| | IPA | <p>Individual Practice Association</p> <p>An Individual Practice Association is an HMO delivery model in which the HMO contracts with a physician organization, which, in turn, contracts with the individual physicians. The IPA physicians practice in their own offices and continue to see their fee-for-service patients. The HMO reimburses the IPA on a capitated basis.</p> |
| | NETWORK | <p>Network Model</p> <p>In Network Model HMOs, the HMO contracts with more than one group practice to provide physician services to the HMO's members. Typically, the HMO compensates these groups on an all-inclusive physician capitation basis.</p> |
| | MIXED | <p>Mixed Model</p> <p>The major differences among the HMO models pertain to the relationship between the HMO and its participating physicians. Currently many HMOs have different relationships with different groups of physicians. As a result, many HMOs cannot easily be classified as a single model type, although such MAOs are occasionally referred to as Mixed Models.</p> |
| | N/A | <p>Not Available</p> |
| STATE | AK – WV, DC, PR, VI | <p>Two Letter State Abbreviation</p> <p>Typically, the plan state is determined at the MAO level and is assigned to the state in which an MAO is reported. The field may represent any of the 50 U.S. states of Alaska (AK) through West Virginia (WV), as well as the District of Columbia (DC), and U.S. territories of Puerto Rico (PR), and the Virgin Islands (VI).</p> |
| | FS, RS | <p>Private Fee For Service and Regional State Abbreviation</p> <p>Regional and Private Fee for Service (PFFS) MAOs, which may represent beneficiaries from multi-county or multi-state regions, are assigned a unique state designation of FS or RS in this table. These plans are included in the national HOS performance measurement sample; however, they are not reported in any particular state or region.</p> |

References

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- ¹ HEDIS[®] is a registered trademark of the National Committee for Quality Assurance.
- ² National Committee for Quality Assurance. *HEDIS[®] 2008, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington, DC: NCQA Publication, 2008.
- ³ National Committee for Quality Assurance. *HEDIS[®] 2010, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington, DC: NCQA Publication, 2010.
- ⁴ Iqbal SU, Rogers W, Selim A, Qian S, Lee A, Ren, XS, Rothendler, J, Miller D, Kazis L. The Veterans RAND 12 Item Health Survey (VR-12): What it is and How it is used. Accessed May 16, 2011 at <http://www.chqoer.research.va.gov/docs/VR12.pdf>.
- ⁵ National Network of Libraries of Medicine. Consumer Outreach: Health Literacy. Accessed May 20, 2011 at <http://nnlm.gov/outreach/consumer/hlthlit.html>.
- ⁶ Wolf MS, Gazmararian JA, Baker DW. Health literacy and functional health status among older adults. *Arch Intern Med*. 2005;165(17):1943-4.
- ⁷ Scott TL, Gazmararian JA, Williams MV, Baker DW. Health literacy and preventive health care use among Medicare enrollees in a managed care organization. *Med Care*. 2002;40(50):395-401.
- ⁸ Virnig BA, Baxter NS, Haberman EB, Feldman RD, Bradley CJ. A matter of race: early-versus late-stage cancer diagnosis. *Health Affairs*. 2009;28(1):160-168.
- ⁹ Health Services Advisory Group. Report on the Health Status of Disadvantaged Medicare Beneficiaries Cohorts II and III. 2005. Accessed on May 20, 2011 at <http://hosonline.org/Content/Publications.aspx>.
- ¹⁰ The Joint Committee on National Health Education Standards. Tips for Identifying and Addressing Health Literacy Issues. 1995. Accessed May 20, 2011 at http://www.hpsm.org/documents/Tips_for_Identifying_Health_Literacy_Issues.pdf.
- ¹¹ American College of Physicians. Racial and Ethnic Disparities in Health Care, Updated 2010. A Position Paper. Accessed May 20, 2011 at http://www.acponline.org/advocacy/where_we_stand/access/racial_disparities.pdf.
- ¹² Ware JE, Kosinski M. *SF-36 Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, Incorporated, 2001.
- ¹³ Medicare Health Outcomes Survey: *The Evaluation of a Mental Component Summary Score Threshold for Depression Risk in the Medicare Population*. October 2006. Accessed May 16, 2011 at http://www.hosonline.org/surveys/hos/download/HOS_Evaluation_MCS_Depress.pdf.
- ¹⁴ Cohen D. *Depression and Violent Deaths in Older Americans: An Emergent Public Mental Health Challenge*. Presented before the Senate Special Committee on Aging at a Hearing on Senior Depression:

Life-Saving Mental Health Treatments for Older Americans. 2003. Accessed May 16, 2011 at <http://aging.senate.gov/events/hr106dc.pdf>.

¹⁵ Pratt LA, Brody DJ. Depression in the United States Household Population, 2005-2006. National Center for Health Statistics (NCHS) Data Brief, No. 7. September 2008. Accessed May 16, 2011 at <http://www.cdc.gov/nchs/data/databriefs/db07.pdf>.

¹⁶ Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. *Diabetes Care*. 2001;24:1069-1078.

¹⁷ Hitchcock PH, Williams JW, Unutzer J, Worchel J, Lee S, Cornell J, Katon W, Harpole LH, Hunkeler E. Depression and comorbid illness in elderly primary care patients: impact on multiple domains of health status and well-being. *Annals of Family Medicine*. 2004;2(6):555-562.

¹⁸ Naranjo D, Fisher L, Areán PA, Hessler D, Mullan J. Patients with type 2 diabetes at risk for major depressive disorder over time. *Annals of Family Medicine*. 2011;9(2):115-120. Accessed May 16, 2011 at <http://www.annfammed.org/cgi/reprint/9/2/115.pdf>.

¹⁹ Joyce GF, Keeler EB, Shang B, Goldman DP. The lifetime burden of chronic disease among the elderly. *Health Affairs*. 2005. 24 Supplement 2:W5R18-29. Accessed May 16, 2011 at <http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.r18v1.pdf>.

²⁰ Ellis, BH, Shannon ED, Cox JK, Aiken L, Fowler BM. Chronic conditions: results of the Medicare Health Outcomes Survey, 1998-2000. *Health Care Financing Review*. 2004;25(4):75-91.

²¹ Bethel MA, Sloan FA, Belsky D, Feinglos MN. Longitudinal incidence and prevalence of adverse outcomes of diabetes mellitus in elderly patients. *Archives of Internal Medicine*. 2008;167:921-927.

²² Eckel RH, Kahn R, Robertson RM, and Rizza RA. Preventing cardiovascular disease and diabetes. *Diabetes Care*. 2006;29(7):1697-1699.

²³ Centers for Disease Control and Prevention. *Measuring Healthy Days*. Atlanta, GA: CDC, November 2000. Accessed May 16, 2011 at: <http://www.cdc.gov/hrqol/pdfs/mhd.pdf>.

²⁴ 2010 Behavioral Risk Factor Surveillance System Data. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Division of Adult and Community Health, HRQOL Surveillance Unit. Data provided in April 2011.

²⁵ Centers for Disease Control and Prevention. *Overweight and Obesity*. Accessed May 16, 2011 at <http://www.cdc.gov/nccdphp/dnpa/obesity/index.htm>.

²⁶ Krueger PM, Rogers RG, Hummer RA, Boardman JD. Body mass, smoking, and overall and cause-specific mortality among older U.S. adults. *Research on Aging*. 2004;26:82-107.

²⁷ Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. Division of Nutrition, Physical Activity and Obesity. *Nutrition Resources for Health*

Professionals: Weight Management Research to Practice Series. Accessed May 16, 2011 at <http://www.cdc.gov/nutrition/professionals/researchtopractice/index.html>.

²⁸ Freedman GM. Chronic pain: clinical management of common causes of geriatric pain. *Geriatrics*. 2002;57(5):36-41.

²⁹ Turk DC. Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain. *Clinical Journal of Pain*. 2002;18(6):355-365.

³⁰ The American Geriatrics Society. *Pharmacological Management of Persistent Pain in Older Persons*. 2009. Accessed May 16, 2011 at http://www.americangeriatrics.org/files/documents/2009_Guideline.pdf.

³¹ Scharf HP, Mansmann U, Streitberger K, Witte S, Kramer J, Maier C, Trampisch HJ, Victor N. Acupuncture and knee osteoarthritis. *Annals of Internal Medicine*. 2006;145(1):12-20.

³² Brennan M, Horowitz A, Su YP. Dual sensory loss and its impact on everyday competence. *The Gerontologist*. 2005;45(3):337-346.

³³ Brennan M, Horowitz A, Su YP. Longitudinal associations between dual sensory impairment and everyday competence among older adults. *Journal of Rehabilitation Research & Development*. 2006;43(6):777-792. Accessed May 16, 2011 at <http://www.rehab.research.va.gov/jour/06/43/6/pdf/Brennan.pdf>

³⁴ Centers for Disease Control and Prevention. National Center for Injury Prevention and Control. *Falls Among Older Adults: An Overview*. Accessed May 16, 2011 at <http://www.cdc.gov/ncipc/factsheets/adultfalls.htm>.

³⁵ Rao SS. Prevention of falls in older patients. *American Family Physician*. 2005;72(1):81-88.

³⁶ Javitt JC, Zhou A, Willke RJ. Association between vision loss and higher medical care costs in Medicare beneficiaries. *Ophthalmology*. 2007;114(2):238-245.

³⁷ Yueh B, Shapiro N, MacLean CH, Shekelle PG. Screening and management of adult hearing loss in primary care: scientific review. *Journal of the American Medical Association*. 2003;289(15):1976-1985.

³⁸ Bogardus ST Jr, Yueh B, Shekelle PG. Screening and management of adult hearing loss in primary care: clinical applications. *Journal of the American Medical Association*. 2003;289(15):1986-1990.

³⁹ American Academy of Family Physicians. *Problem-Oriented Diagnosis: Falls in the Elderly*. 2000. Accessed May 16, 2011 at <http://www.aafp.org/afp/20000401/2159.html>.

⁴⁰ Centers for Disease Control and Prevention. National Center for Injury Prevention and Control. *Fall Prevention Activities*. Accessed May 16, 2011 at <http://www.cdc.gov/ncipc/duip/FallsPreventionActivity.htm>.

⁴¹ American Academy of Family Physicians. *What Causes Falls in the Elderly? How Can I Prevent a Fall?* 2000. Accessed May 16, 2011 at <http://www.aafp.org/afp/20000401/2173ph.html>.

-
- ⁴² Jones D, Kazis L, Lee A, Rogers W, Skinner K, Cassar L, Wilson N, Hendricks A. Health status assessments using the Veterans SF-36 and SF-12. Methods for evaluating outcomes in the Veterans Health Administration. *Journal of Ambulatory Care Management*. 2001;24(3):1-19.
- ⁴³ Spiro A, Rogers WH, Qian S, Kazis L. Imputing physical and mental summary scores (PCS and MCS) for the Veterans SF-12 Health Survey in the context of missing data. Technical Report prepared by: The Health Outcomes Technologies Program, Health Services Department, Boston University School of Public Health, Boston, MA and The Institute for Health Outcomes and Policy, Center for Health Quality, Outcomes and Economic Research, Veterans Affairs Medical Center, Bedford, MA. 2004. Accessed May 16, 2011 at http://www.hosonline.org/surveys/hos/download/HOS_Veterans_12_Imputation.pdf.
- ⁴⁴ Kazis LE, Lee A, Spiro III A, Rogers W, Ren XS, Miller DR, Selim A, Hamed A, Haffer SC. Measurement comparisons of the Medical Outcomes Study and the Veterans SF-36 Health Survey. *Health Care Financing Review*. 2004;25(4):43-58.
- ⁴⁵ Kazis LE, Miller DR, Clark JA, Skinner KM, Lee A, Ren XS, Spiro III A, Rogers WH, Ware Jr JE. Improving the response choices on the Veterans SF-36 Health Survey role functioning scales: results from the Veterans Health Study. *Journal of Ambulatory Care Management*. 2004;27(3):263-280.
- ⁴⁶ Kazis LE, Selim A, Rogers W, Ren XS, Lee A, Miller DR. Dissemination of methods and results from the Veterans Health Study: final comments and implications for future monitoring strategies within and outside the Veterans Health Care System. *Journal of Ambulatory Care Management*. 2006;29(4):310-319.
- ⁴⁷ Kazis LE, Miller DR, Skinner KM, Lee A, Ren XS, Clark JA, Rogers WH, Spiro III A, Selim A, Linzer M, Payne SM, Mansell D, Fincke BG. Applications of methodologies of the Veterans Health Study in the VA health care system: conclusions and summary. *Journal of Ambulatory Care Management*. 2006;29(2):182-188.
- ⁴⁸ Spiro A, Lee AF, Kazis LE, Miller DR, Ren XS, Zhang M. Final Report, HOS/VA Comparison Project, Part 1: Measurement Equivalence of Medicare HOS SF-36 & VA Veterans SF-36. Accessed May 16, 2011 at http://www.hosonline.org/surveys/hos/download/HOS_VA_Comparison_Project_Part1.pdf.
- ⁴⁹ Kazis LE, Lee AF, Spiro A, Miller DR, Rogers W, Ren XS, Zhang M. Final Report, HOS/VA Comparison Project, Part 2: Tests of Reliability and Validity at the Scale Level for the Medicare HOS SF-36 and the VA Veterans SF-36. Accessed May 16, 2011 at http://www.hosonline.org/surveys/hos/download/HOS_VA_Comparison_Project_Part2.pdf.
- ⁵⁰ The actual phrasing for the 2008 and 2010 Medicare HOS 2.0 survey questions may be found on the Survey Instrument section of the HOS website at <http://www.hosonline.org>.