PERFORMANCE MEASUREMENT REPORT

Cohort IV

2001-2003

MEDICARE HEALTH OUTCOMES SURVEY

CENTERS FOR MEDICARE & MEDICAID SERVICES

HEALTH SERVICES ADVISORY GROUP

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Medicare Health Outcomes Survey
Cohort IV Performance Measurement Report

EVALUATION AND FEEDBACK FORM

FAX THIS FORM TO HSAG, ATTENTION:
LAURA GIORDANO AT (602) 241-0757

-OR-

CONTACT THE MEDICARE HEALTH OUTCOMES SURVEY
INFORMATION AND TECHNICAL SUPPORT
TELEPHONE: (888) 880-0077 or E-MAIL ADDRESS: hos@azqio.sdps.org

The Centers for Medicare & Medicaid Services (CMS) and Health Services Advisory Group (HSAG) welcome your comments and feedback on this report. Please use the comment section below for your questions, comments, issues or concerns.

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In order to assure a complete and timely response, please complete the following information:

Name: _____ **Date:** _____

Title: _____

Organization: _____

If M+CO, Plan ID Number: _____

Phone Number: _____ **Fax:** _____

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Table of Contents

Reader's Guide

WHAT'S NEW IN THE MEDICARE HEALTH OUTCOMES SURVEY PROGRAM

- A new manual, "*Measuring and Improving Health Outcomes: An SF-36® Primer for the Medicare Health Outcomes Survey*," was recently published by the Health Assessment Lab and QualityMetric, Inc. This primer provides general information about the Medicare Health Outcomes Survey (HOS) – how it came to be, what its components are, how HOS data are collected and analyzed, and how HOS results are being used. Information on the construction, scoring, reliability, validity and interpretation of the SF-36® Health Survey, which is the core HOS outcomes measure, is summarized. Multiple tables of normative data are included to allow health plans and others using the SF-36® to compare their data with reference norms for the Medicare managed care population, overall and by categories such as age and gender. A complimentary copy of the primer was sent to each health plan. Copies of the primer may be purchased via QualityMetric's Secure Online Order Center (*http://www.qualitymetric.com*).

- To promote and facilitate the usage of Medicare HOS data by researchers, the HOS project is collaborating with the Research Data Assistance Center (ResDAC) at the University of Minnesota. ResDAC is a contractor of the Centers for Medicare & Medicaid Services (CMS) that provides assistance to academic, government and non-profit researchers interested in using Medicare and/or Medicaid data. ResDAC is available to assist in the completion and/or review of data requisition forms for Medicare HOS research data files prior to their submission to CMS. For additional information and assistance with obtaining Medicare HOS research data files, please visit the ResDAC Medicare HOS Web page (*http://www.resdac.umn.edu/OtherDataSets/HOS.asp*). ResDAC may also be contacted by calling 1-888-9RESDAC (1-888-973-7322) or by e-mailing resdac@umn.edu.

- A detailed technical document, "*Calculating Medicare Health Outcomes Survey Performance Measurement Results*," is now available for download from the HOS Publications section of the Medicare HOS website (*http://www.cms.hhs.gov/surveys/hos*). This document outlines the steps utilized for the calculation of HOS Performance Measurement results among living beneficiaries over a two-year period. These results are based on risk adjusted mortality rates, and changes in physical and mental health functioning and well being.

HOW TO USE THIS REPORT

- **What portion of this report is equivalent to the hard copy Performance Measurement reports I have received in the past?**
  Sections A through H are equivalent to the hard copy Performance Measurement reports distributed in the past. The Supplemental Figures section (I) was included on the CD-ROM that accompanied past Performance Measurement reports. Please note, in the reports for the Quality Improvement Organizations (QIOs), the executive summaries and supplemental figures **for all plans in the state** are included in section I.

- **What do Performance Measurement results mean?**
  Performance Measurement results reflect a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two-year period of time.

- **Which plans participated in the Medicare HOS?**
  A complete list of the plans participating in Round 4 of the HOS can be found in the Participating Plans section (F) of this report.

- **Where can I find my plan level Performance Measurement results?**
  Performance Measurement results for all plans in **your** state are presented in the Executive Summary section (B) of this report.

- **How many beneficiaries participated in determining my plan level results?**
  The number of beneficiaries that participated in the HOS is summarized under the Distribution of the Sample and Response Rates headings in the Executive Summary section (B).

- **How were my plan level results generated?**
  A complete summary of the data collection, cleaning, scoring, and analysis can be found in the Methodology section (D) of this report.

- **Where can I find additional plan level results?**
  Demographic information displayed in a tabular format can be found in the Executive Summary section (B) of this report. In addition, supplemental graphs of demographics and health status indicators for your plan, state, and HOS totals are presented in the Supplemental Figures section (I) of this report.

- **Who contributed to the development and implementation of the Medicare HOS?**
  A comprehensive list of the key organizations and individuals involved in the HOS can be found in the HOS Partners section (H) of this report.

- **What if I encounter a term I do not understand?**
  A glossary consisting of definitions relevant to the Medicare HOS can be found in the Definitions of Key Terms section (G) of this report.

- **What are some of the overall trends in the HOS?**
  Pertinent national trends and demographics are included in the National Trends section (E) of this report.

- **What survey questions were used in the HOS?**
  Copies of the HOS questionnaire can be obtained from the Medicare HOS website (*http://www.cms.hhs.gov/surveys/hos*). In addition, the HOS questionnaire can also be found in the National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS®) 2003, Volume 6 Manual.[1]

- **Where can I obtain a copy of HEDIS® 2003, Volume 6?**
  Copies of HEDIS® 2003, Volume 6, 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 (*http://www.ncqa.org*).

- **Where can I obtain additional technical documentation?**
  In addition to the detailed technical document, "*Calculating Medicare Health Outcomes Survey Performance Measurement Results*," that is available for download from the HOS Publications section of the Medicare HOS website (*http://www.cms.hhs.gov/surveys/hos*), technical documentation describing the scoring and case mix adjustment used to generate the Performance Measurement results can also be found in Appendix 1 of HEDIS® 2003, Volume 6.

- **When will my organization receive beneficiary level data?**
  Cohort IV beneficiary level data are planned to be released to Medicare + Choice Organizations (M+COs) and QIOs in Fall 2004. M+COs will be notified of the availability of their data on CMS' Health Plan Management System (HPMS). QIOs will receive their data via the HOS_Data Exchange Group within the QualityNet Exchange application.

- **How can I obtain additional copies of this report?**
  All report distribution occurs electronically to participating plans through CMS' HPMS, and to participating QIOs through the HOS_Data Exchange Group within the QualityNet Exchange application. In addition, QIOs can access their HOS reports and the reports for all plans in their state via HPMS. An HPMS User ID is required to access the HPMS. Please contact your plan's CMS Quality Point of Contact to obtain access to your HOS reports. If assistance is required regarding HPMS access, please contact Neetu Jhagwani (410-786-2548) or Don Freeburger (410-786-4586) at CMS.

- **Who can I contact for technical assistance with this report?**
  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 interpretation and data questions. Additionally, the Medicare HOS website provides general information on the project and responses to Frequently Asked Questions (*http://www.cms.hhs.gov/surveys/hos*).

[1] HEDIS® is a registered trademark of the National Committee for Quality Assurance.

MEDICARE HEALTH OUTCOMES SURVEY
SAMPLE EXECUTIVE SUMMARY

The following is a sample version of the Executive Summary made available to all M+COs participating in the *Cohort IV Baseline* and *Follow Up* Medicare Health Outcomes Surveys.

The figures, tables, and text in this document contain sample plan and state level data. In addition to the sample plan and state level data, 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. Additionally, the Medicare HOS website provides general information on the project and responses to Frequently Asked Questions (*http://www.cms.hhs.gov/surveys/hos*).

Executive Summary

The Centers for Medicare & Medicaid Services (CMS) is committed to monitoring the quality of care provided by Medicare + Choice Organizations (M+COs). The Medicare Health Outcomes Survey (HOS) is the first health outcomes measure for the Medicare population in managed care settings. The HOS design is based on a randomly selected sample of individuals from each participating M+CO, and measures their physical and mental health over a two-year period.

The HOS measure is an assessment of a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two-year period of time. The functional status of the elderly is known to decline over such a period.[1] The HOS results were computed using a set of case mix/risk adjustment factors, adjusting for expected differences. The differences between the baseline and the two-year follow up physical and mental health scores are presented in terms of the percentages of beneficiaries who were better, the same, or worse than expected. The resulting aggregation of these scores across beneficiaries within a plan yields the HOS plan level Performance Measurement results. These results are specific to each individual plan. The HOS results are an important part of CMS' quality improvement activities, as current law authorizes Quality Improvement Organizations (QIOs) to review the quality of care provided to Medicare beneficiaries. In addition, CMS includes the HOS results as one of the components of their performance assessment program. The goal of the HOS program is to gather valid and reliable health status data in Medicare managed care for use in quality improvement activities, public reporting, plan accountability, and improving health outcomes.

The following report presents Performance Measurement results for your plan, **HXXXD**, based on data from the Medicare HOS 2001 *Cohort IV Baseline* and 2003 *Cohort IV Follow Up* surveys. In addition, aggregate and state level data are provided for all plans in your state, **STXXXX**.

PERFORMANCE MEASUREMENT RESULTS

The Performance Measurement results describe change in health over time, which is characterized in terms of the direction and magnitude for all beneficiaries in a given plan. The results from this study describe the outcomes of a randomly selected set of members from each participating plan between 2001 and 2003. These results account for demographic and health differences that may exist between members in the various plans. These results are not necessarily an indication of the outcomes a particular respondent may experience in the future. Plan performance may change over time, and individual outcomes depend on individual medical care and personal circumstances.

[1] National Committee for Quality Assurance. *HEDIS® 2003, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2003.

The HOS instrument consists of the SF-36® Health Survey [2, 3] and additional questions, including those used for case mix/risk adjustment purposes. The Performance Measurement results are based on risk adjusted mortality rates, and changes in physical and mental functioning and well being, among living beneficiaries over the two-year period. Physical and mental functioning and well being are measured with the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores, which are derived from the SF-36®. Both the PCS and MCS scores are calculated using the eight scales of the SF-36®: Physical Functioning (PF); Role-Physical (RP); Bodily Pain (BP); General Health (GH); Vitality (VT); Social Functioning (SF); Role-Emotional (RE); and Mental Health (MH).

Given that each responding beneficiary was measured twice (at baseline in 2001 and at follow up in 2003), each respondent serves as his or her own control. In order to facilitate accurate plan comparisons of health outcomes, the results are adjusted for a number of beneficiary characteristics at baseline, including age, gender, race, and chronic conditions.[4] The results of the risk adjusted outcomes are aggregated across respondents for each M+CO, yielding the plan level Performance Measurement results. For details on the derivation of Performance Measurement findings, please refer to the Methodology section (D) of this report.

The *Cohort IV* Performance Measurement results are based on an analytic sample of 95,565 Medicare beneficiaries who were age 65 or older and for whom baseline physical and mental health measures could be calculated. The results are reported as the percentages of beneficiaries whose health status improved, remained the same, or declined. In the accompanying figures, these categories are referred to as percent better, percent same, and percent worse than expected. These results are displayed for your plan, state, and HOS totals. The HOS total is the national HOS average. **Please note that the percentages in *all* of the Executive Summary figures may not total 100% due to rounding.**

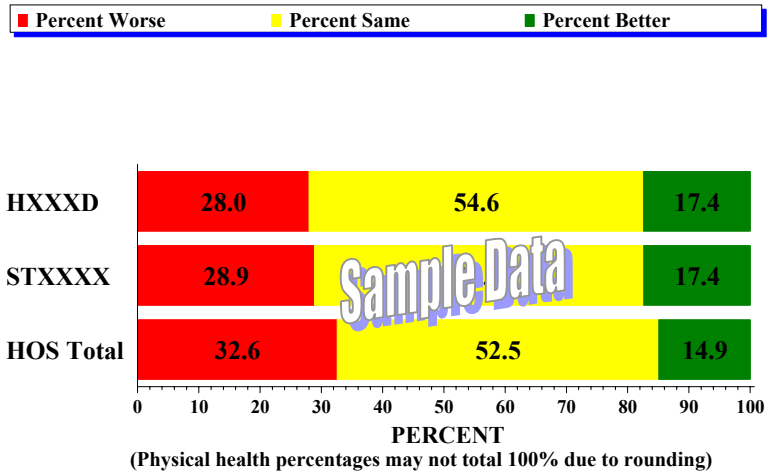
[2] SF-36® is a registered trademark of the Medical Outcomes Trust.
[3] Ware JE, Snow KK, Kosinski M, Gandek B. *SF-36® Health Survey Manual and Interpretation Guide.* Boston, MA: New England Medical Center, The Health Institute, 1993.
[4] National Committee for Quality Assurance. *HEDIS® 2003, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2003.

Physical Health

Performance Measurement results for physical health combine risk adjusted two-year mortality rates and changes in PCS scores. A reliable and valid measure of physical health, a very high PCS score indicates no physical limitations, disabilities, or decline in well being; high energy level; and a rating of health as "excellent."[5, 6] A very low PCS score indicates limitations in self care, physical, social, and role activities; severe bodily pain; frequent tiredness; and a rating of health as "poor." The PCS score is highly correlated with the PF, RP, and BP scales. Beneficiaries were classified into three categories: alive and PCS better than expected; alive and PCS same as expected; and PCS worse than expected (including death).

Figure B1, below, depicts the Physical Health Performance Measurement results for your plan, state, and HOS totals. For the national HOS total, 14.9% of beneficiaries were better than expected in terms of physical health (green), 52.5% remained the same as expected (yellow), and 32.6% were worse than expected (red) at follow up.

FIGURE B1
PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR PLAN HXXXD, STXXXX TOTAL, AND HOS TOTAL

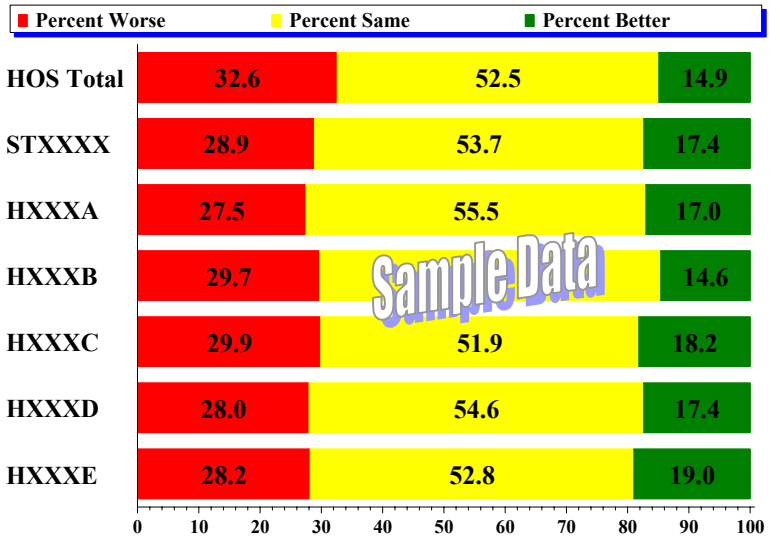


(Physical health percentages may not total 100% due to rounding)

For purposes of comparison, the following figure, Figure B2, depicts the plan level Physical Health Performance Measurement results for all plans in STXXXX.

[5] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Medical Care* 1995; 33: AS264-AS279.
[6] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, Inc., 2001.

FIGURE B2
PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL PLANS IN STXXXX, STXXXX TOTAL, AND HOS TOTAL



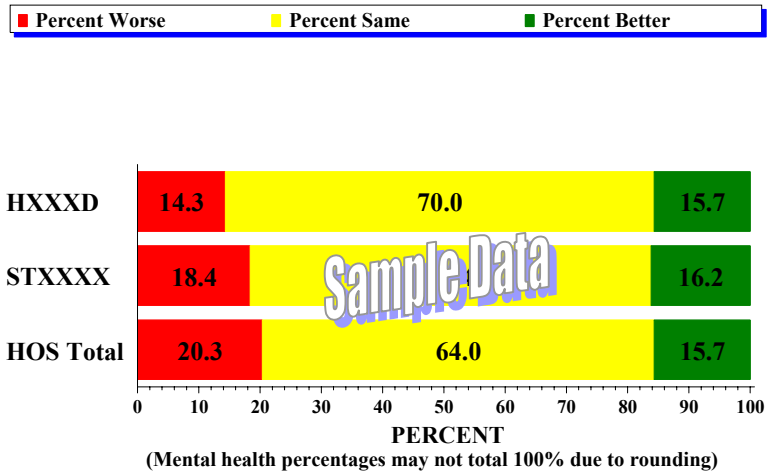
(Physical health percentages may not total 100% due to rounding)

Mental Health

Performance Measurement results for mental health are based on risk adjusted two-year changes in MCS scores. A reliable and valid measure of mental health, a very high MCS score indicates frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems.[7, 8] A very low MCS score indicates frequent psychological distress, and social and role disability due to emotional problems. The MCS score is highly correlated with the SF, RE, and MH scales. Beneficiaries were classified into three categories: MCS better than expected; MCS same as expected; and MCS worse than expected.

Figure B3, below, depicts the Mental Health Performance Measurement results for your plan, state, and HOS totals. For the national HOS total, 15.7% of beneficiaries were better than expected in terms of mental health (green), 64.0% remained the same as expected (yellow), and 20.3% were worse than expected (red) at follow up.

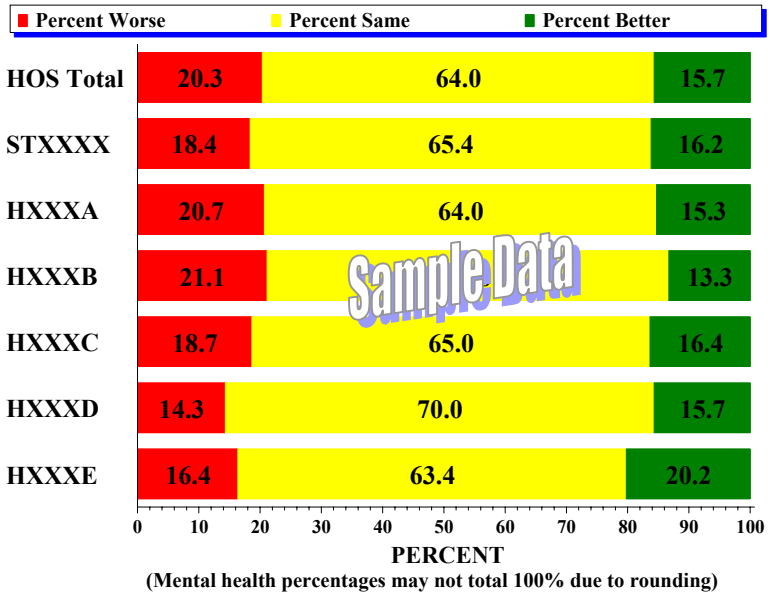
FIGURE B3
MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR PLAN HXXXD, STXXXX TOTAL, AND HOS TOTAL



For purposes of comparison, the following figure, Figure B4, depicts the plan level Mental Health Performance Measurement results for all plans in STXXXX.

[7] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Medical Care* 1995; 33: AS264-AS279.
[8] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, Inc., 2001.

FIGURE B4
MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL PLANS IN STXXXX, STXXXX TOTAL, AND HOS TOTAL



(Mental health percentages may not total 100% due to rounding)

What is *Expected*?

Performance Measurement results are an assessment of a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two-year period of time. Based on these results, each plan is assigned a "worse than expected," "same as expected," or "better than expected" summary designation. A plan rated "same as expected" did not differ by more than would be expected by chance over the two-year period, based upon the comparison of that plan's case mix adjusted results with case mix adjusted results for all other HOS plans in the United States (US). A plan rated "better than expected" had a significantly *higher* proportion of beneficiaries whose health improved or remained stable over the two-year period, based upon the comparison of that plan's case mix adjusted results with case mix adjusted results for all other HOS plans in the US. A plan rated "worse than expected" had a significantly *lower* proportion of beneficiaries whose health improved or remained stable over the two-year period, based upon the comparison of that plan's case mix adjusted results with case mix adjusted results for all other HOS plans in the US. For details on the statistical analysis used to determine these findings, please refer to the Methodology section (D).

The classification of plans presented in this report is based on comparisons of each plan with the national average. When two specific plans are compared, such as two plans within a state, cautious interpretation is advised. There can only be reasonable certainty that Plan A had a better result than Plan B, if Plan A is classified as "better than expected" and Plan B is classified as "worse than expected." If Plan A appears to have a better result than Plan B, but the difference between the plans does **not** meet the above described criterion, then the observed plan difference might be explained by statistical variation.

An assessment of mortality and PCS findings reveals that plans did differ significantly on both of these measures at the national level. Examination of the summary findings for Physical Health (mortality and PCS) reveals 23 outlier plans at the national level. One of the outlier plans was designated as "worse than expected" compared to the national average, and 22 plans were designated as "better than expected" compared to the national average.

In terms of physical health, your plan, HXXXD, performed as expected when compared to the national average.

The following table, Table B1, depicts the physical health summary findings for all plans in STXXXX.

TABLE B1
PHYSICAL HEALTH SUMMARY FINDINGS FOR THE STATE OF STXXXX

PLAN ID	WORSE THAN EXPECTED	SAME AS EXPECTED	BETTER THAN EXPECTED
HXXXA			✓
HXXXB		✓	
HXXXC		✓	
HXXXD		✓	
HXXXE		✓	

Sample Data

An assessment of MCS findings reveals that plans did not differ significantly at the national level. All plans fell into the "same as expected" designation.

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

The following table, Table B2 below, depicts the mental health summary findings for all plans in STXXXX.

TABLE B2
MENTAL HEALTH SUMMARY FINDINGS FOR THE STATE OF STXXXX

PLAN ID	WORSE THAN EXPECTED	SAME AS EXPECTED	BETTER THAN EXPECTED
HXXXA		✓	
HXXXB		✓	
HXXXC		✓	
HXXXD		✓	
HXXXE		✓	

Sample Data

DISTRIBUTION OF THE SAMPLE

The 2001 *Cohort IV Baseline* Medicare HOS included a random sample of 190,523 beneficiaries, including both the aged and disabled, from 188 managed care plans. Of the 190,523 individuals sampled, 63.6% (121,208) completed the baseline survey. Of the 121,208 respondents, 113,529 were seniors (age 65 or older) who returned a completed survey. A completed survey was defined as one that could be used to calculate PCS and MCS scores. During the two years between the 2001 *Cohort IV Baseline* survey and the 2003 *Cohort IV Follow Up* survey, a number of M+COs discontinued offering managed care to Medicare beneficiaries, or consolidated with other health plans. As a result of these changes, 152 reporting units (M+COs) and 95,565 respondents remained in the HOS. For purposes of plan comparisons, this group of 95,565 beneficiaries comprises the *Cohort IV Performance Measurement analytic sample*.

At the time of follow up, 63,978 beneficiaries were seniors age 65 or older who had completed a baseline survey and were still alive and enrolled in their original M+CO. These beneficiaries are referred to as the *Cohort IV Follow Up eligible sample*. A total of 50,636 beneficiaries returned a survey that could be used to estimate PCS and MCS scores. These 50,636 beneficiaries comprise the *Cohort IV Follow Up respondent sample*.

The Performance Measurement results are based on the analytic sample of 95,565 and not the entire population sampled at baseline and follow up. At the national level, 6,998 beneficiaries died between baseline and the two-year follow up. Another 24,589 beneficiaries voluntarily disenrolled from their M+COs during the same two-year period. Of the 63,978 individuals eligible for follow up, 50,636 beneficiaries responded; 12,950 beneficiaries did not respond to the follow up survey; and 392 beneficiaries were determined to be invalid members at follow up.[9] It is important to remember that a respondent is defined as an eligible beneficiary who returned a survey that could be used to estimate PCS and MCS scores.

The original baseline sample size for your plan, HXXXD, was 1,000; however, 433 beneficiaries were not included in the analytic sample because they did not complete the baseline survey, were not seniors, or were determined to be invalid members at baseline.[10] Therefore, your plan's analytic sample size is 567. Of the 567 beneficiaries in your plan's analytic sample, 144 voluntarily disenrolled from your plan and 44 died between baseline and follow up. Of the 379 beneficiaries sent a follow up survey, 306 returned a completed follow up survey.

The following table, Table B3, presents the distribution of the *analytic sample* for your plan, state, and HOS totals. All plans within STXXXX are included for purposes of comparison.

[9] Invalid members at *follow up* meet one of the following criteria: not enrolled in the M+CO; have an incorrect address and phone number; or have a language barrier.

[10] Invalid members at *baseline* meet one of the following criteria: deceased; not enrolled in the M+CO; have an incorrect address and phone number; or have a language barrier.

TABLE B3
DISTRIBUTION OF THE ANALYTIC SAMPLE FOR ALL PLANS IN THE STATE OF STXXXX

	Cohort IV PERFORMANCE MEASUREMENT ANALYTIC SAMPLE	VOLUNTARILY DISENROLLED	DEATHS	*Cohort IV Follow Up* INVALID SURVEYS	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE	*Cohort IV Follow Up* RESPONDENT SAMPLE
HOS Total	95,565	24,589	6,998	392	12,950	50,636
All XX Plans	3,626	947	259	14	487	1,919
HXXXA	594	165	36	0	76	317
HXXXB	625	159	41	4	82	339
HXXXC	1,215	306	94	4	177	634
HXXXD	567	144	44	2	71	306
HXXXE	625	173	44	4	81	323

Sample Data

In the above table, Table B3, only *voluntarily* disenrolled beneficiaries are displayed because those who were disenrolled *involuntarily* were excluded from the analytic sample. Members who had an invalid survey at follow up met one of the following criteria: no longer enrolled in the M+CO, had an incorrect address and phone number, or had a language barrier. For further information on the distribution of the sample across time, refer to the Methodology (D) and National Trends (E) sections.

RESPONSE RATES

As described previously under the distribution of the sample heading, a respondent is defined as an eligible beneficiary who returned a survey that could be used to calculate PCS and MCS scores. Response rates were calculated at the national, state, and plan levels by dividing the number of respondents by the corresponding eligible sample size excluding invalids. Of the 63,978 seniors eligible for follow up, 392 were determined to be invalid members during the follow up survey administration. Of the remaining 63,586 beneficiaries, PCS and MCS scores could be generated for 50,636, yielding a response rate of 79.6%.[11]

Focusing on the 152 reporting units (M+COs) at follow up, the average number of respondents per plan was 333, with a range of six to 1,607 respondents. Fifty percent of the plans (the interquartile range) had between 216 and 434 respondents. Ten percent of the plans had 485 or more respondents, and ten percent had 98 or fewer respondents. Based on the analytic criteria, the mean plan level response rate was 78.4%, with a range of 46.2% to 89.3%. Fifty percent of the plans had a response rate between 75.6% and 82.6%. Ten percent of the plans had a response rate of 84.9% or higher, and ten percent had a response rate of 71.3% or lower.

For your plan, HXXXD, 379 beneficiaries were sent a follow up survey; however, two were determined to be invalid at follow up. Of the remaining 377 beneficiaries, 306 returned a completed survey. Therefore, your plan's overall response rate was 81.2%.

The following table, Table B4 below, presents the eligible sample sizes, number of invalid surveys, and response rates for all plans in STXXXX.

TABLE B4
RESPONSE RATES FOR ALL PLANS IN THE STATE OF STXXXX

	Cohort IV Follow Up ELIGIBLE SAMPLE	*Cohort IV Follow Up* INVALID SURVEYS	*Cohort IV Follow Up* RESPONDENT SAMPLE	*Cohort IV Follow Up* RESPONSE RATE (%)
HOS Total	63,978	392	50,636	79.6
All XX Plans	2,420	14	1,919	79.8
HXXXA	393	0	317	80.7
HXXXB	425	4	339	80.5
HXXXC	815	4	634	78.2
HXXXD	379	2	306	81.2
HXXXE	408	4	323	80.0

Sample Data

[11] Response Rate = [*Cohort IV Follow Up* Respondents/(Eligible Sample Size – Invalids)] x 100%

DEMOGRAPHICS

The following table, Table B5 below, depicts your plan's demographics at baseline. For additional demographic information, please refer to the Supplemental Figures section (I) of this report.

TABLE B5
DEMOGRAPHICS FOR PLAN HXXXD

DEMOGRAPHIC [1]	*Cohort IV* PERFORMANCE MEASUREMENT ANALYTIC SAMPLE [2]	*Cohort IV Follow Up* ELIGIBLE SAMPLE [3]	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE [4]	*Cohort IV Follow Up* RESPONDENT SAMPLE [5]
Age	(N=567)	(N=379)	(N=71)	(N=306)
Mean in Years	75.5	74.7	77.1	74.2
Standard Deviation	+/- 6.7	+/- 6.3	+/- 6.9	+/- 5.9
Gender (%)	(N=567)	(N=379)	(N=71)	(N=306)
Male	41.4	40.4	32.4	42.5
Female	58.6	59.6	67.6	57.5
Race (%)	(N=567)	(N=379)	(N=71)	(N=306)
White	89.6	90.2	88.7	90.5
Black	6.0	6.1	9.9	5.2
Other	4.2	3.4	1.4	3.9
Unknown	0.2	0.3	0.0	0.3
Marital Status (%)	(N=557)	(N=373)	(N=69)	(N=302)
Married	56.6	59.0	46.4	62.3
Widowed	32.9	30.3	40.6	27.8
Divorced or Separated	7.9	7.8	8.7	7.3
Never Married	2.7	2.9	4.3	2.6
Education (%)	(N=550)	(N=367)	(N=65)	(N=300)
Did Not Graduate HS	27.8	26.4	35.4	24.7
High School Graduate	38.7	39.0	36.9	39.3
Some College	19.6	20.2	18.5	20.3
4 Year Degree or Beyond	13.8	14.4	9.2	15.7
Annual Household Income (%)	(N=502)	(N=337)	(N=57)	(N=278)
Less than $10,000	12.7	10.1	10.5	9.7
$10,000 - $19,999	25.1	24.3	29.8	23.0
$20,000 - $29,999	17.7	17.5	15.8	18.0
$30,000 - $49,999	24.5	27.3	22.8	28.4
$50,000 or More	11.0	11.6	3.5	13.3
Don't Know	9.0	9.2	17.5	7.6

Sample Data

[1] Demographic data for age, gender, and race are obtained from the CMS Medicare Enrollment Database at the time of the baseline survey. Marital status, education, and annual household income are obtained from baseline survey questions.
[2] Limited to seniors (age 65 or older) who had baseline PCS and MCS scores and a valid follow up reporting unit
[3] Limited to seniors who were eligible for follow up (alive, baseline PCS and MCS scores, and still enrolled in the same M+CO)
[4] Limited to seniors who were eligible for follow up, and who did not complete a follow up survey (excluding invalids)
[5] Limited to eligible seniors with PCS and MCS scores at follow up (excluding invalids)
Note: Percentages may not total 100% due to rounding.

Introduction

This section provides an introduction to the Medicare HOS, including discussion of the HOS goals, a review of the HOS survey timeline, and an overview of the HOS reporting process.

INTRODUCTION TO THE MEDICARE HEALTH OUTCOMES SURVEY

CMS is committed to monitoring the quality of care provided by M+COs. To better evaluate this care, CMS, in collaboration with the National Committee for Quality Assurance (NCQA), launched the first Medicare managed care outcomes measure in the Health Plan Employer Data and Information Set (HEDIS®) in 1998.[1] The measure includes the most recent advances in summarizing physical and mental health outcomes results and appropriate risk adjustment techniques. This measure was initially titled the Health of Seniors, and was renamed the Medicare Health Outcomes Survey during the first year of implementation. This name change was intended to reflect the inclusion of Medicare recipients who are disabled and not seniors (not age 65 or older) in the sampling methodology.

The HOS measure was developed under the guidance of a Technical Expert Panel (TEP) comprised of individuals with specific expertise in the health care industry and outcomes measurement. The TEP continues to provide input for developing the science of the HOS measure. CMS has contracted with NCQA to support the standardized administration of the HOS survey, including selecting, training, and certifying independent survey vendors with whom the plans contract to administer the survey.

Data collection for *Cohort I Baseline* (Round 1) occurred in 1998, and findings were distributed in 1999. Data collection for *Cohort II Baseline* (Round 2) occurred in 1999, and findings were distributed in 2000. Data collection for *Cohort III Baseline* and *Cohort I Follow Up* (Round 3) occurred in 2000, and findings were distributed in 2001. Data collection for *Cohort IV Baseline* and *Cohort II Follow Up* (Round 4) occurred in 2001, and findings were distributed in 2002. Data collection for *Cohort V Baseline* and *Cohort III Follow Up* (Round 5) occurred in 2002, and findings were distributed in 2003. Data collection for *Cohort VI Baseline* and *Cohort IV Follow Up* (Round 6) occurred in 2003.

The HOS results are an important part of CMS' quality improvement activities, as CMS includes the HOS results as one of the components of their performance assessment program.

[1] HEDIS® is a registered trademark of the National Committee for Quality Assurance.

MEDICARE HEALTH OUTCOMES SURVEY TIMELINE

HOS survey data are collected annually for a new sample of members (cohort), with a two-year follow up for each baseline cohort. The HOS 2003 survey administration was the fourth year of parallel data collection on two separate samples for M+COs (*Cohort VI Baseline* and *Cohort IV Follow Up*). Timelines for the sampling protocol, as well as reporting cycles, are described in the table below.

	1998 (ROUND 1)	1999 (ROUND 2)	2000 (ROUND 3)	2001 (ROUND 4)	2002 (ROUND 5)	2003 (ROUND 6)	2004 (ROUND 7)
COHORT I	**CI Baseline Data Collection**	*CI Baseline Report*	**CI Follow Up Data Collection**	*Cohort I PM Report*			
COHORT II		**CII Baseline Data Collection**	*CII Baseline Report*	**CII Follow Up Data Collection**	*Cohort II PM Report*		
COHORT III			**CIII Baseline Data Collection**	*CIII Baseline Report*	**CIII Follow Up Data Collection**	*Cohort III PM Report*	
COHORT IV				**CIV Baseline Data Collection**	*CIV Baseline Report*	**CIV Follow Up Data Collection**	*Cohort IV PM Report*
COHORT V					**CV Baseline Data Collection**	*CV Baseline Report*	**CV Follow Up Data Collection**
COHORT VI						**CVI Baseline Data Collection**	*CVI Baseline Report*
COHORT VII							**CVII Baseline Data Collection**

PM = Performance Measurement

REPORTING MEDICARE HEALTH OUTCOMES SURVEY RESULTS

The Medicare HOS results are used to monitor the health of the Medicare population in managed care settings and to provide external performance measurement.[2] Results from *Cohorts I, II, III, IV, V,* and *VI Baseline* have been disseminated in cohort specific baseline reports to the M+COs that participated in the respective cohorts. QIOs also received cohort specific baseline reports, which consisted of a compilation of all M+CO reports in their respective state(s).

The Performance Measurement report is designed to provide M+COs and QIOs with the measures of physical and mental health change for Medicare beneficiaries over the two-year period between baseline and follow up. Results from *Cohorts I, II,* and *III* Performance Measurement have been disseminated in cohort specific reports to the M+COs that participated in the respective cohorts. QIOs received cohort specific Performance Measurement reports, which consisted of a compilation of all M+CO reports in their respective state(s). After distribution of Performance Measurement reports, QIOs and M+COs receive a merged data set of the baseline and follow up data in an electronic format.

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 interpretation and data questions. Additionally, the Medicare HOS website provides general information on the project and responses to Frequently Asked Questions (*http://www.cms.hhs.gov/surveys/hos*).

[2] National Committee for Quality Assurance. *HEDIS® 2003, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2003.

Methodology

This section describes the development of the Medicare HOS, the role of the SF-36® survey instrument in the HOS, and the methods used to collect and analyze the HOS data.

DEVELOPMENT OF THE MEDICARE HEALTH OUTCOMES SURVEY

In the mid-1990s, Medicare beneficiaries were joining Health Maintenance Organizations (HMOs) and other types of Managed Care Organizations (MCOs) in increasing numbers. It became apparent to CMS that the agency needed performance reporting requirements for Medicare managed care. CMS worked with NCQA to incorporate the Medicare population into NCQA's HEDIS® performance measurement set. HEDIS® was rapidly becoming a standard reporting requirement of purchasers in the commercial insurance market.

The integration of the Medicare population into HEDIS® was achieved with the release of HEDIS® 3.0. CMS, NCQA, and others felt there was a need to develop additional measures for the Medicare population, including an "outcomes" measure for HEDIS®. Traditionally, HEDIS® contained "process" measures that assessed interventions such as mammograms for older women and retinal eye exams for people with diabetes. While evidence in the scientific literature tied the measured processes or interventions to favorable patient outcomes, there was a desire to develop an outcomes measure that captured performance across multiple aspects of care.

CMS, NCQA, Health Assessment Lab (HAL), and performance measurement experts worked together to develop a measure that would assess the physical functioning and mental well being of Medicare beneficiaries over time. It was decided that this measure should include a set of survey questions known as the SF-36® Health Survey. The SF-36® was developed as part of the Medical Outcomes Study, a national research effort, and has a long history of use in estimating relative disease burden for numerous conditions.[1] The survey is referenced in the literature in connection with over 150 diseases and conditions including arthritis, back pain, depression, diabetes and hypertension.[2] Additional items were included in the HOS in addition to the SF-36® survey to allow for case mix adjustment, which is essential for meaningful and valid plan-to-plan comparisons of health outcomes.

The HOS measure was approved for inclusion in HEDIS® by the Committee on Performance Measurement (CPM), the NCQA panel that oversees the development and evolution of HEDIS®. Developed in 1997 as the Health of Seniors survey, the name of the measure was later changed to the Medicare Health Outcomes Survey to reflect the inclusion of Medicare beneficiaries under the age of 65 with disabilities. CMS has contracted with Health Assessment Lab (HAL) and QualityMetric (QM), Health Outcomes Technologies Program (HOT) of the Boston University

[1] Tarlov AR, Ware JE, Greenfield S, Nelson EC, Perrin E, Zubkoff M. The Medical Outcomes Study: an application of methods for monitoring the results of medical care. *Journal of the American Medical Association.* 1989; 262:925-930.
[2] QualityMetric. *Search Bibliography* www.qualitymetric.com/cgi-bin/bibsearch.cgi. December 5, 2000.

School of Public Health, Health Services Advisory Group (HSAG), National Committee for Quality Assurance (NCQA), and Research Triangle Institute (RTI) International to implement and operationalize all aspects of the HOS measure. For additional information on the HOS project team, please refer to the HOS Partners section (H).

In 1998, CMS required Medicare MCOs with contracts in effect on or before January 1, 1997 to participate in the HOS. Some Medicare MCOs were required to report by market areas, defined as geographic areas containing more than 5,000 members that generally are served by distinctly separate networks of service providers (referred to as "contract markets"). In 1999, CMS required all M+COs and section 1876 Risk and Cost health plans with contracts in place on or before January 1, 1998 to participate in the HOS. In addition, selected Program of All-inclusive Care for the Elderly (PACE) plans, Evercare plans, and demonstration risk plans participated in the second year administration. A Spanish language version of the survey was also incorporated into the survey protocol.

In 2000, CMS required all M+COs, continuing cost contractors, PACE plans, Social HMOs, Medicare Choices Demonstration plans, and Department of Defense (DOD) Subvention Demonstration plans with contracts in place on or before January 1, 1999 to participate in the *Cohort III Baseline* survey. All plans with contracts in place on or before January 1, 1997 that participated in the *Cohort I Baseline* survey in 1998 were required to participate in the *Cohort I Follow Up* survey in 2000. In 2001, CMS required all M+COs, continuing cost contractors, PACE plans, Social HMOs, and Medicare Choices Demonstration plans with contracts in place on or before January 1, 2000 to participate in the *Cohort IV Baseline* survey. All plans with contracts in place on or before January 1, 1998 that participated in the *Cohort II Baseline* survey in 1999 were required to participate in the *Cohort II Follow Up* survey in 2001. In 2002, CMS required all M+COs, continuing cost contractors, PACE plans, Social HMOs, and Medicare Choices Demonstration plans with contracts in place on or before January 1, 2001 to participate in the *Cohort V Baseline* survey. In addition, all plans with contracts in place on or before January 1, 1999 that participated in the *Cohort III Baseline* survey in 2000 were required to participate in the *Cohort III Follow Up* survey in 2002.

In 2003, CMS required all M+COs, continuing cost contractors, Social HMOs, and Medicare Choices Demonstration plans with contracts in place on or before January 1, 2002 to participate in the *Cohort VI Baseline* survey. In addition, all plans with contracts in place on or before January 1, 2000 that participated in the *Cohort IV Baseline* survey in 2001 were required to participate in the *Cohort IV Follow Up* survey in 2003.

SF-36® HEALTH SURVEY

The SF-36® is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of scores, as well as physical and mental health summary measures. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. As documented in more than 2,500 publications, the SF-36® has proven useful in both general and specific populations, comparing the relative burden of diseases, differentiating the health benefits produced by a wide range of different treatments, and screening individual patients. The most complete information about the history and development of the SF-36®, its psychometric evaluation, studies of reliability and validity, and normative data are available in two user's manuals.[3, 4]

The SF-36® asks respondents about their usual activities and how they would rate their health. It is a barometer of physical and mental health functional status. Concepts (scales) included in the SF-36® are:

- Physical Functioning (PF) – These ten questions ask respondents to indicate the extent to which their health limits them in performing physical activities.
- Role-Physical (RP) – These four questions assess whether respondents' physical health limits them in the kind of work or other usual activities they perform, both in terms of time and performance.
- Role-Emotional (RE) – These three questions assess whether emotional problems have caused respondents to accomplish less in their work or other usual activities, both in terms of time and performance.
- Bodily Pain (BP) – These two questions determine the respondents' frequency of pain and the extent to which it interferes with their normal activities.
- Social Functioning (SF) – These two questions ask respondents to indicate limitations in social function due specifically to health.
- Mental Health (MH) – These five questions ask respondents how frequently they experience feelings representing four major mental health dimensions: anxiety, depression, loss of behavioral/emotional control, and psychological well being.
- Vitality (VT) – These four questions ask respondents to rate their well being by indicating how frequently they experience energy and fatigue.
- General Health (GH) – These five questions ask respondents to rate their current health status overall, susceptibility to illness, and their expectations for health in the future.

Figure D1 on page D5 illustrates the taxonomy of items and concepts underlying the construction of the SF-36® scales and summary measures. The taxonomy has three levels: (1) items, (2) eight scales that aggregate 2-10 items each, and (3) two summary measures that aggregate scales. All but one of the 36 items (self-reported health transition) are used to score the eight SF-36® scales. Each item is used in scoring only one scale. The eight scales form two distinct higher-ordered clusters (principal components) that are the basis for scoring the physical (PCS) and mental

[3] Ware JE, Snow KK, Kosinski M, Gandek B. *SF-36® Health Survey Manual and Interpretation Guide.* Boston, MA: New England Medical Center, The Health Institute, 1993.
[4] 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.

(MCS) component summary measures. These components account for 80-85% of the reliable variance in the eight scales in the US general population and in other countries, in both cross-sectional and longitudinal studies.[5, 6] This discovery made it possible to reduce the number of statistical comparisons involved in analyzing the SF-36® (from eight to two) without substantial loss of information.[7, 8]

The reliability of the two summary measures has been estimated using both internal consistency and test-retest methods. With rare exceptions, reliability estimates for physical and mental summary scores usually exceed 0.90.[9] These trends in reliability coefficients for the summary measures have also been replicated for the elderly and across other groups differing in socio-demographic characteristics and diagnoses.[10] While studies of subgroups indicate slight declines in reliability for more disadvantaged respondents, reliability coefficients consistently exceeded recommended standards for group level analysis.

Studies of validity generally support the intended meaning of high and low SF-36® scores as documented in the original user's manuals.[5, 10] Because of the widespread use of the SF-36® across a variety of applications, evidence from many types of validity research is relevant to these interpretations. Studies to date have yielded content, concurrent, criterion, construct, and predictive evidence of validity. The content validity of the SF-36® has been compared to that of other widely used generic health surveys.[5, 10] Systematic comparisons indicate that the SF-36® includes eight of the most frequently measured health concepts. Among the content areas included in widely used surveys, but not included in the SF-36®, are: sleep adequacy, cognitive functioning, sexual functioning, health distress, family functioning, self-esteem, eating, recreation/hobbies, communication, and symptoms/problems that are specific to one condition. The latter are not included in the SF-36® because it is a generic measure.

The SF-36® is scored from 0 to 100 points, with higher scores indicating better functioning on both the individual scales and the summary measures (PCS and MCS). The HOS individual scale scores, as well as the PCS and MCS scores, have been normed to the values for the 1998 general US population, so that a score of fifty represents the national average for a given scale or summary score. In addition, the norm based score for the 1998 general US population has a standard deviation (SD) of ten points. It is important to note, however, that the 1998 general population elderly norms reflect a PCS mean score of 42.6 and an MCS mean score of 52.0.

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[5] Ware JE, Snow KK, Kosinski M, Gandek, B. *SF-36® Health Survey Manual and Interpretation Guide*. Boston, MA: New England Medical Center, The Health Institute, 1993.

[6] Gandek B, Ware JE, Aaronson NK, Alonso J, Apolone G, Bjorner J, *et al.* Tests of data quality, scaling assumptions and reliability of SF-36® in eleven countries: Results from the IQOLA Project. *Journal of Clinical Epidemiology* 1998; 51: 1149-1158.

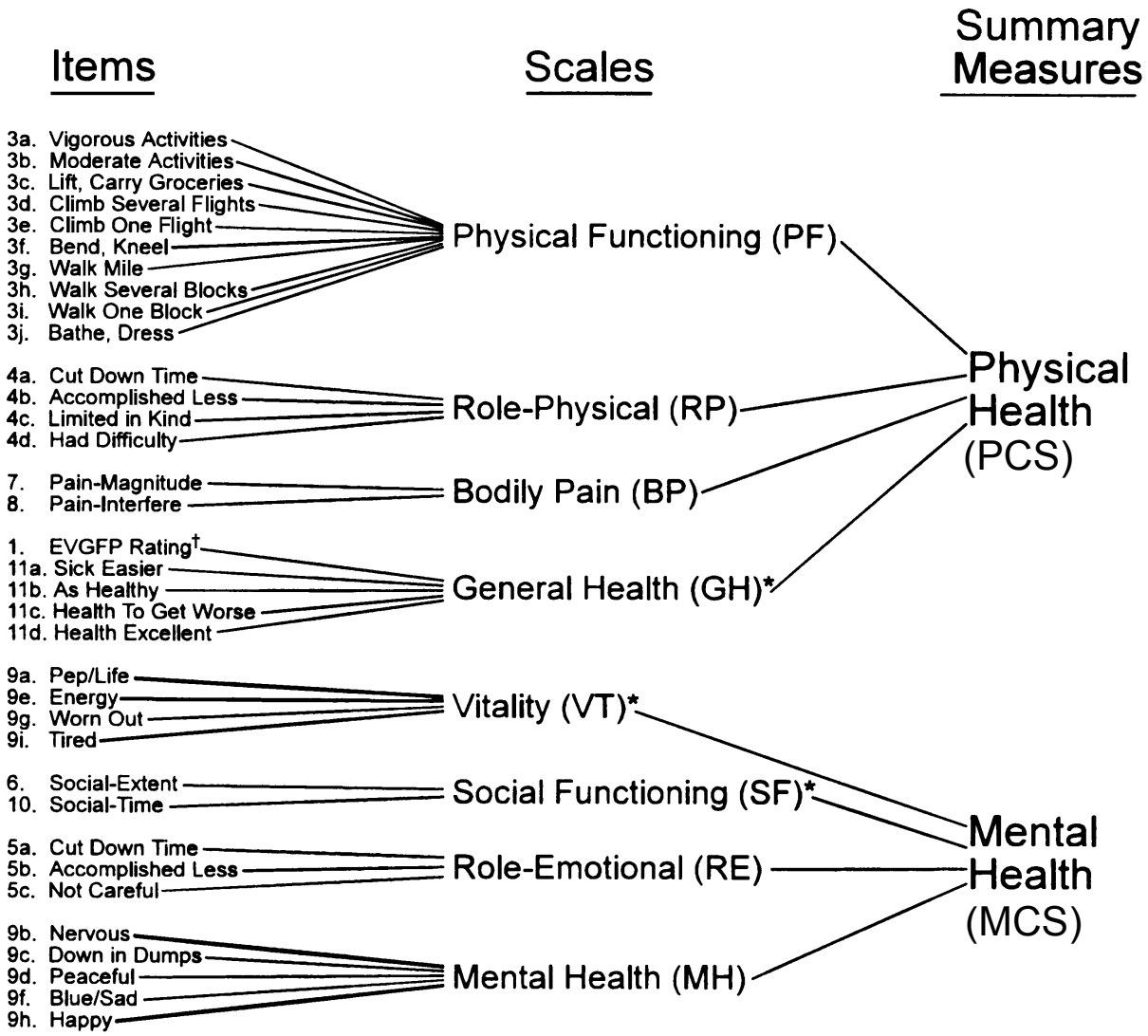
[7] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Medical Care* 1995; 33: AS264-AS279.

[8] 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.

[9] Stewart AL, Ware JE. *Measuring Functioning and Well-Being: The Medical Outcomes Study Approach*. Boston, MA: The Health Institute, 1994.

[10] Ware JE, Kosinski M, Keller SD. *SF-36® Physical and Mental Health Summary Scales: A User's Manual.* Boston, MA: The Health Institute, 1994.

FIGURE D1: SF-36® MEASUREMENT MODEL



* **Significant correlation with other summary measure**

† **EVGFP Rating: In general, would you say your health is:**
Excellent Very Good Good Fair Poor

Source: Ware JE, Kosinski M, Keller SD. *SF-36® Physical and Mental Health Summary Scales: A User's Manual*. Boston, MA: The Health Institute, 1994.

METHODOLOGY AND DESIGN

Sampling Methodology

The HOS measure is administered to a randomly selected sample of individuals at baseline from each M+CO. The sampling methodology is dependent upon the size of a plan's population. For M+COs with Medicare populations of more than 1,000 members, a simple random sample of 1,000 members is selected for the baseline survey. In those M+COs with 3,000 or more members, members who responded to the *Cohort III Baseline* survey were excluded from the *Cohort IV Baseline* sample. For M+COs with populations of 1,000 members or less, all eligible members are included in the sample for the baseline survey. Members are defined as eligible for the baseline survey if they have been continuously enrolled for at least six months and do not have End Stage Renal Disease (ESRD).

For the *Cohort IV Follow Up* sample, CMS identified beneficiaries from the *Cohort IV Baseline* sample who were eligible for remeasurement. Members were eligible for remeasurement if they had sufficient SF-36® data to derive PCS and MCS scores at baseline. Beneficiaries were excluded from *Cohort IV Follow Up* if they disenrolled from their M+CO subsequent to the *Cohort IV Baseline* survey, or were deceased subsequent to the *Cohort IV Baseline* survey. Although deceased beneficiaries were excluded from the *Cohort IV Follow Up* sample, CMS includes deceased beneficiaries when calculating the HOS Performance Measurement results.[11]

Data Collection

M+COs must contract with an NCQA certified HOS vendor to administer the survey. For Round 6 data collection, vendors followed the protocol contained in *HEDIS® 2003, Volume 6: Specifications for the Medicare Health Outcomes Survey.*[11] The standard HEDIS® protocol for administering the HOS employs a combination of mail and telephone survey administration. The mail component of the survey uses a standardized questionnaire, survey letters, and prenotification and reminder/thank you postcards. Vendors review each returned mail questionnaire for legibility and completeness. If a beneficiary's responses are ambiguous, then a coding specialist employs standardized decision rules. Questionnaires can be entered into a computer manually or optically scanned into a computer readable file. For manually entered data, two separate data entry specialists must key enter responses from each questionnaire.

In those instances when beneficiaries fail to respond after the second mail survey, vendors attempt telephone follow up (with a maximum of six attempts). Vendors also perform telephone follow up for members who return an incomplete mail survey in order to obtain responses to missing questions. Vendors use a standardized version of a Computer Assisted Telephone Interviewing (CATI) script to collect telephone interview data for the survey. To ensure the standardization of the data collection process, vendors are prohibited from augmenting or adjusting the HOS protocol or instrument.

[11] National Committee for Quality Assurance. *HEDIS® 2003, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2003.

Periodically during the survey administration, and again when data collection is completed, vendors run an edit program against each record in the data file to identify invalid data elements. At the conclusion of the data collection period, vendors perform preliminary data cleaning and editing and follow up with survey respondents, as necessary. For a more detailed discussion on data sampling, collection, and submission, please refer to HEDIS® 2003, Volume 6.

Data Cleaning

Data consistency checks are performed by reviewing the entire HOS data set for out of range values. To verify the presence of unique beneficiaries in the HOS data file, the file is examined for duplicate Health Insurance Claim (HIC) numbers. All dates contained within the data file are verified to correspond to the appropriate range. Frequency distributions of all categorical variables as well as cross tabulations by vendor are performed to identify both out of range values and data shifts in value assignment. The cross tabulations are performed using the entire HOS data file and also specified subsets of the data file. In addition to the cross tabulations of categorical variables, the survey variables (such as survey disposition, round number, and survey language) are assessed for accuracy and consistency. Finally, response consistency checks are performed to validate the integrity of the data.

All date variables contained in the data file are converted to SAS®[12] date format (elapsed date variables) to facilitate the calculation of duration of enrollment and age, which are then incorporated into the data file. Upon completion of the HOS data editing and cleaning process, the final data set is produced.

Scoring SF-36® Physical and Mental Health Summary Measures

The eight scales and two summary measures are estimated using the scoring algorithms described by the developers of the SF-36® Health Survey.[13] Briefly, these norm-based algorithms yield favorably scored (i.e., higher is better) measures that have a mean of 50 and a standard deviation of 10 in the general US population. For the PCS, a very high score indicates no physical limitations, disabilities or decline in well being; high energy level; and a rating of health as "excellent." For the MCS, a very high score indicates frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems.

Given that the *Cohort I Baseline* survey was fielded in 1998, the means and standard deviations used in scoring the PCS and MCS were based on the 1998 National Survey of Functional Health Status. In order to allow for interpretation of PCS and MCS scores across all of the cohorts of data, the weights (i.e., component scoring coefficients) used in aggregating the eight scales to

[12] SAS® is a registered trademark of SAS Institute Inc., Cary, NC.
[13] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, 2001.

score the PCS and MCS measures, are the original standardized weights recommended by the developers.[14]

Data Analysis

For purposes of plan comparisons, analysis begins with the *Cohort IV Baseline* sample of seniors (113,529) that had sufficient SF-36® data to derive PCS and MCS scores at baseline. Of the 113,529 beneficiaries, 95,565 were seniors whose plans continued to have a contract in place at the time of follow up in 2003. The 95,565 seniors in this group comprise the *Cohort IV Performance Measurement analytic sample*. Of the 95,565 seniors, 31,587 beneficiaries originally were in plans that remained in Medicare managed care; however, the beneficiaries themselves were no longer enrolled in the health plans at the time of follow up in 2003. Of these 31,587 beneficiaries, 6,998 were excluded by reason of death and 24,589 by reason of voluntary disenrollment. Thus, 63,978 seniors in this analysis that completed the baseline survey in *Cohort IV* were resurveyed. This group comprises the *Cohort IV Follow Up eligible sample.* Of those resurveyed, 50,636 had sufficient SF-36® data to derive PCS and MCS scores at follow up. This group of seniors is referred to as the *Cohort IV Follow Up respondent sample*.

The goal of the *Cohort IV* Performance Measurement analysis was to compare physical and mental health outcomes in M+COs, in terms of the percentages of beneficiaries who were better, the same, or worse than expected at the two-year follow up. The primary outcomes are death, change in physical health as measured by PCS, and change in mental health as measured by MCS. Death and PCS outcomes were combined into one overall measure of change in physical health. Multivariate statistical methods were used for case mix adjustment, so all plans would be as equal as possible in terms of demographic and socioeconomic characteristics, chronic conditions, initial health status, and other design variables. All beneficiaries age 65 or older, who completed the HOS at baseline and had baseline PCS and MCS scores, 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.

The data analysis can be classified into four stages: (1) classification of actual outcomes for each beneficiary; (2) calculation of expected outcomes for each beneficiary; (3) calculation of plan level results; and (4) tests of significance of plan level differences.

Beneficiaries were classified as to whether their PCS and MCS scores were better, the same, or worse than expected over the two-year period. Calculation of a simple change score (e.g., follow up PCS minus baseline PCS) masks the proportion of beneficiaries with follow up scores that differed from those at baseline. Therefore, beneficiaries were grouped into three change categories: (1) those whose follow up score did not differ by more than would be expected by chance ("same" group); (2) those who improved more than would be expected by chance ("better" group); and (3) those whose follow up score declined more than would be expected ("worse" group). PCS is considered to be the same if it changed by less than 5.66 points (plus

[14] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, 2001.

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. MCS is considered to be the same if it changed by less than 6.72 points (plus or minus). Unlikely to be due to measurement error, changes large enough to be labeled as better or worse for PCS and MCS also have been shown to be relevant in terms of a wide range of clinical and social criteria.[15] A similar method of classifying the health outcomes of beneficiaries was used in the Medical Outcomes Study.[16]

Death within two years of the baseline survey was classified as a "worse than expected" physical outcome. Beneficiaries who died were identified using CMS data. Three categories of change in physical health were defined by combining death and PCS outcomes: alive and PCS better; alive and PCS same; and dead or PCS worse. Classification of death as a "worse" outcome had the advantage of combining mortality and health status into one physical health measure, without making any assumptions about the scalar value for death. Combining death with PCS also has face validity; beneficiaries with baseline PCS scores below 25 were eight times more likely to die in the two-year follow up period than beneficiaries with PCS scores above 54. Death is not included in the calculation of mental health (MCS) outcomes because there is a much stronger relationship between death and physical health, and because death should not be counted twice. Beneficiaries who completed the follow up HOS survey and subsequently died were counted as alive for purposes of the analysis.

In summary, there were six main categories of actual outcomes: (1) alive and PCS better; (2) alive and PCS same; (3) dead or PCS worse; (4) MCS better; (5) MCS same; and (6) MCS worse. Each beneficiary is classified into only one of the three Physical Health categories and one of the three Mental Health categories.

Logistic regression techniques were used to adjust for case mix and calculate expected outcomes for each beneficiary. This adjustment process is necessary, as health plans differ with respect to how at risk their beneficiaries are. Expected outcomes included: death; PCS same or better; PCS better; MCS same or better; and MCS better. The primary outcomes for the analysis are "alive and PCS same or better" and "MCS same or better." That is, the primary outcomes were specified a priori as measures that indicate whether a health plan was maintaining or improving the health of its members. However, expected outcomes for "PCS better" and "MCS better" were needed to calculate the percentages of beneficiaries who were better, the same, or worse than expected. The percentage of beneficiaries who were worse at follow up is calculated as one minus the percentage who were better or the same.

In calculating expected outcomes, separate case mix models were warranted for death (which required extensive case mix control), and for PCS and MCS (which did not require much case mix control). The development and testing of these models was the subject of extensive analysis, which is described in more detail in Appendix 1 of HEDIS® 2003, Volume 6. A series of eight different death models, three different PCS models, and three different MCS models was

[15] QualityMetric. *Search Bibliography*. www.sf-36.com/cgi-bin/bibsearch.cgi

[16] Ware JE, Bayliss MS, Rogers WH, Kosinski M, Tarlov AR. Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-services systems: Results from the Medical Outcomes Study. *Journal of the American Medical Association* 1996; 276: 1039-1047.

used, since all beneficiaries did not have 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 an expected probability was calculated for every beneficiary. Details about the variables included in each model are provided in Tables D1 and D2.

In brief, models used to predict the probability of death for each beneficiary included variables to control for differences in demographic and socioeconomic characteristics, chronic conditions, functional status, and survey administration. Demographic and socioeconomic variables included age, gender, race, education, marital status, annual household income, home ownership, and Medicaid status. Chronic 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 condition data were not available. Functional status was measured using a combined SF-36® Physical Functioning/Activities of Daily Living (PF/ADL) scale, the SF-36® General Health and Social Functioning scales, and one item that asked beneficiaries to compare their health to that of their peers. The PF/ADL scale was a Likert scale that allowed lower levels of physical functioning to be measured than with the SF-36® Physical Functioning scale alone. The PF/ADL, General Health, and Social Functioning scales had the strongest relationship to mortality of the SF-36® scales. Baseline PCS and MCS scores were also used when scale-level data were not available.

Models used to predict expected change in PCS and MCS scores (e.g., PCS better) used a set of exogenous demographic and socioeconomic variables (age, gender, race, education, marital status, annual household income, home ownership, and Medicaid status). 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 conditions at baseline was not warranted, because errors in disease reports were correlated with functioning. PCS and MCS results were also 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 people 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. These values were derived using data from a cohort of Veterans Administration (VA) beneficiaries who completed the HOS and a VA survey at the same time, using different modes of administration.

The calculation of the overall plan level results was done in several steps. This is illustrated with the calculation for "alive and PCS better," but the same logic applies to other outcomes. First, as discussed above, a variable was created to indicate if each beneficiary in a plan who completed the baseline survey actually died during the two-year follow up period. Second, for those

beneficiaries who completed both the baseline and follow up surveys, a variable was created to indicate if the PCS score was better or not at the two-year follow up period. Third, an expected death rate was calculated for each beneficiary within a plan using logistic regression techniques (detailed above). Fourth, an expected PCS better rate was calculated for each beneficiary using logistic regression techniques (detailed above). Neither the expected death rate nor the expected PCS better calculations include a variable for plan.

To summarize data for all beneficiaries within a plan, the mean expected death rate (E_d) was calculated for all beneficiaries in the plan, along with the mean expected "PCS better" rate (E_{pb}). The expected "alive and PCS better" for the plan is $(1-E_d)*E_{pb}$. For the same beneficiaries within the plan, the mean actual death rate (A_d) and mean actual "PCS better" rate (A_{pb}) were calculated across all beneficiaries. The actual "alive and PCS better" rate for the plan is $[(1-A_d)*A_{pb}]$. The difference between actual and expected results indicates the percentage points by which the plan's actual "alive and PCS 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 plan differences from the average national results, was calculated by dividing the plan 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 plans differed on the outcome of interest (discussed below). An adjusted plan percent "alive and PCS better" also was calculated by combining the overall (national) results and the plan deviation score, using a logit transformation.

For physical health (mortality and PCS) over the two-year follow up period, 32.6% of beneficiaries at the national level were worse (dead or PCS worse), 52.5% were the same (alive and PCS same), and 14.9% were better than expected (alive and PCS better). An overall *F* test showed that mortality and PCS same or better differed significantly at the plan level ($p = 0.004$ for death, $p = 0.026$ for PCS same or better, and $p = 0.029$ for PCS better) across all plans. Given this significant variation, an outlier plan level analysis for PCS was warranted. The PCS outlier analysis was performed using a *t* test at the plan level for "alive and PCS same or better," which was specified a priori as the main physical health outcome measure. That is, the main physical health outcome indicated whether a health plan was maintaining or improving the physical health of its members. Plans with a *t* statistic ≥ 2 were designated as significantly better than expected, while plans with a *t* statistic ≤ -2 were designated as significantly worse than expected, compared to the average national results. In *Cohort IV* Performance Measurement, there were 22 plans identified as better than the national average and one plan identified as worse than the national average for PCS.

Over the two-year follow up period for MCS, 20.3% of beneficiaries at the national level were worse, 64.0% were the same, and 15.7% were better than expected. An overall *F* test showed that MCS same or better did not differ significantly at the plan level ($p < 0.197$ for MCS same or better); however, MCS better was significantly different at the plan level ($p < 0.001$ for MCS better). Given that "MCS same or better," which was specified a priori as the primary mental health outcome measure did not differ significantly, an outlier plan level analysis for MCS was not warranted. Accordingly, no *t* statistics for plans were considered significant.

Additional technical documentation, including a detailed description of the case mix methodology and regression models used, can be found on the HOS website (*http://www.cms.hhs.gov/surveys/hos*), as well as in Appendix 1 of HEDIS® 2003, Volume 6.

TABLE D1
COVARIATES USED IN ESTIMATION OF EXPECTED MORTALITY

	DEATH MODEL							
DEATH MODEL COVARIATES	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Demographic and Socioeconomic Variables								
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	✓	✓	✓	✓	✓	✓	✓	✓
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 Conditions								
Presence or absence of each of 13 chronic 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, 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, colon/rectal cancer, lung cancer) 2. Moderate relationship (pulmonary disease, diabetes, stroke, myocardial infarction) 3. Weak relationship (breast cancer, hypertension, angina/coronary artery disease, other heart) 4. Negative relationship (gastrointestinal disorders, arthritis [both types], sciatica, prostate cancer)			✓	✓	✓	✓		
Baseline Functional Status								
SF-36® Physical Functioning/Activities of Daily Living Index	✓	✓	✓	✓	✓			
SF-36® General Health scale	✓	✓	✓	✓	✓			
SF-36® Social Functioning scale	✓	✓	✓	✓	✓			
One-item measure of General Health compared to others	✓	✓	✓	✓	✓			
Baseline PCS and MCS						✓	✓	
Survey Administration								
Telephone or mail survey	✓	✓	✓	✓	✓	✓	✓	

TABLE D2
COVARIATES USED IN ESTIMATION OF CHANGE IN PCS AND MCS SCORES

	PCS MODEL			MCS MODEL		
PCS/MCS MODEL COVARIATES	**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)	✓	✓		✓	✓	
CMS Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander)						✓
On Medicaid or not on Medicaid	✓	✓	✓	✓	✓	✓
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	✓			✓		

National Trends

This section describes the national trends in the Medicare HOS for the *Cohort IV Performance Measurement analytic sample*, the *Cohort IV Follow Up eligible sample*, the *Cohort IV Follow Up non-respondent sample*, and the *Cohort IV Follow Up respondent sample*. Results for demographic information, chronic medical conditions, Activities of Daily Living (ADLs), and the depression screen are presented.[1]

The 2001 *Cohort IV Baseline* Medicare HOS included a random sample of 190,523 beneficiaries from 188 M+COs, including both the aged and disabled. Of the 190,523 individuals sampled, 63.6% (121,208) completed the baseline survey. Of the 121,208 respondents, 113,529 were seniors (age 65 or older) who returned a survey that could be used to estimate PCS and MCS scores. During the two years between the 2001 *Cohort IV Baseline* survey and the 2003 *Cohort IV Follow Up* survey, a number of M+COs discontinued offering managed care to Medicare beneficiaries, or consolidated with other health plans. As a result of these changes, 152 reporting units (M+COs) and 95,565 beneficiaries (seniors with baseline PCS and MCS scores) remained in the HOS. For purposes of plan comparisons, this group of 95,565 beneficiaries comprises the *Cohort IV Performance Measurement analytic sample*.

At the time of follow up, 68,018 people who had completed a baseline survey were still alive and enrolled in their original M+CO. Of the 68,018 individuals in this group, 63,978 were seniors age 65 or older (referred to as the *Cohort IV Follow Up eligible sample*). A total of 50,636 eligible beneficiaries returned a survey that could be used to estimate PCS and MCS scores at follow up. The 50,636 seniors in this group comprise the *Cohort IV Follow Up respondent sample*.

DEMOGRAPHICS (TABLE E1)

The average age of the Medicare HOS *Cohort IV Baseline* sample (190,523) was 74.2, while the average age of the analytic sample of seniors (95,565) at baseline was slightly higher at 75.1. Similarly, the average age of the respondent sample (50,636) was 74.6 at baseline. Of the 95,565 cases in the analytic sample, 58.5% were female and 41.5% were male. The gender distribution in the respondent sample was similar, as 59.4% were female and 40.6% were male.

The HOS *Cohort IV Performance Measurement analytic sample* was predominately white (88.6%), based on CMS' designation of member race. Beneficiaries who were black comprised 7.3% of the sample, with all other races accounting for an additional 3.9% (0.1% were of unknown race). The race distribution in the respondent sample was similar, with 89.9% white, 6.1% black, and all other races accounting for 3.9% (0.1% were of unknown race).

[1] Demographic data for age, gender, and race are obtained from the CMS Medicare Enrollment Database at the time of the baseline survey. Marital status, education, and annual household income are obtained from baseline survey questions.

The majority of the beneficiaries in the analytic sample (57.3%) were married, 31.0% were widowed, 9.0% were divorced/separated, and 2.8% were never married. In the respondent sample, there was a slightly higher percentage of beneficiaries who were married (59.4%), and a lower percentage who were widowed (29.3%) or divorced/separated (8.6%), while the percentage of never married (2.8%) remained the same.

The educational status of the beneficiaries in the analytic sample included 29.9% who did not graduate from high school, 36.6% who graduated from high school, 20.1% who received some college education, and 13.4% who obtained a four year college degree or beyond. The respondent sample had slightly higher levels of education: 27.9% did not graduate high school, 37.9% graduated from high school, 20.3% received some college education, and 14.0% obtained a four year college degree or beyond.

The annual household income of beneficiaries varied from less than $10,000 to over $100,000 per year. In the analytic sample 12.7% of beneficiaries reported living near or below the poverty level, earning less than $10,000 annually.[2] A large proportion of beneficiaries, 46.7%, reported an annual household income of $10,000 - $29,999, with an additional 29.5% earning $30,000 or more per year, and 11.2% who did not know their annual household income. The respondent sample had slightly higher annual household incomes compared to the analytic sample: 11.2% earned less than $10,000, 47.1% earned $10,000 - $29,999, 31.0% earned $30,000 or more, and 10.6% did not know their annual household income.

A detailed graphical presentation of the demographics at the plan, state, and national level is included in the Supplemental Figures section (I) of this report (Figures 1-8).

[2] Based on the United States Department of Health & Human Services 2000 Poverty Guidelines: http://aspe.os.dhhs.gov/poverty/00poverty.htm

TABLE E1
DEMOGRAPHICS

DEMOGRAPHIC[1]	*Cohort IV* PERFORMANCE MEASUREMENT ANALYTIC SAMPLE[2]	*Cohort IV Follow Up* ELIGIBLE SAMPLE[3]	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE[4]	*Cohort IV Follow Up* RESPONDENT SAMPLE[5]
Age	(N=95,565)	(N=63,978)	(N=12,950)	(N=50,636)
Mean in Years	75.1	74.9	76.0	74.6
Standard Deviation	+/- 6.5	+/- 6.3	+/- 6.8	+/- 6.2
Gender (%)	(N=95,565)	(N=63,978)	(N=12,950)	(N=50,636)
Male	41.5	40.6	40.4	40.6
Female	58.5	59.4	59.6	59.4
Race (%)	(N=95,564)	(N=63,977)	(N=12,950)	(N=50,635)
White	88.6	89.1	86.3	89.9
Black	7.3	6.8	9.2	6.1
Other	3.9	4.1	4.4	3.9
Unknown	0.1	0.1	0.1	0.1
Marital Status (%)	(N=93,967)	(N=62,933)	(N=12,655)	(N=49,893)
Married	57.3	58.1	53.4	59.4
Widowed	31.0	30.4	34.5	29.3
Divorced or Separated	9.0	8.6	8.9	8.6
Never Married	2.8	2.9	3.3	2.8
Education (%)	(N=93,393)	(N=62,570)	(N=12,522)	(N=49,668)
Did Not Graduate HS	29.9	29.3	34.3	27.9
High School Graduate	36.6	37.3	35.3	37.9
Some College	20.1	19.9	18.7	20.3
4 Year Degree or Beyond	13.4	13.5	11.8	14.0
Annual Household Income (%)	(N=83,184)	(N=55,620)	(N=10,633)	(N=44,670)
Less than $10,000	12.7	12.1	15.6	11.2
$10,000 - $19,999	27.0	27.0	27.1	27.0
$20,000 - $29,999	19.7	19.7	18.1	20.1
$30,000 - $49,999	18.7	19.0	15.7	19.8
$50,000 or More	10.8	10.9	9.5	11.2
Don't Know	11.2	11.3	14.1	10.6

[1] Demographic data for age, gender, and race are obtained from the CMS Medicare Enrollment Database at the time of the baseline survey. Marital status, education, and annual household income are obtained from baseline survey questions.

[2] Limited to seniors (age 65 or older) who had baseline PCS and MCS scores and a valid follow up reporting unit

[3] Limited to seniors who were eligible for follow up (alive, baseline PCS and MCS scores, and still enrolled in the same M+CO)

[4] Limited to seniors who were eligible for follow up, and who did not complete a follow up survey (excluding invalids)

[5] Limited to eligible seniors with PCS and MCS scores at follow up (excluding invalids)

Note: Percentages may not total 100% due to rounding.

CHRONIC MEDICAL CONDITIONS (TABLE E2)

Thirteen chronic medical conditions are included in the questionnaire. These conditions are: hypertension; angina pectoris or coronary artery disease; congestive heart failure; myocardial infarction or heart attack; other heart conditions, such as heart valve defects or arrhythmias; stroke; emphysema, asthma, or chronic obstructive pulmonary disease; inflammatory bowel disease, including Crohn's disease and ulcerative colitis; arthritis of the hip or knee; arthritis of the hand or wrist; sciatica; diabetes, hyperglycemia, or glycosuria; and any cancer (other than skin cancer).

The number of chronic medical conditions was aggregated for each beneficiary. At baseline, 67.4% of the beneficiaries in the *Cohort IV Follow Up respondent sample* had two or more chronic conditions, as compared to 71.8% at follow up. A detailed graphical presentation of the chronic conditions at the plan, state, and national level is included in the Supplemental Figures section (I) of this report (Figures 13-15).

TABLE E2
CHRONIC MEDICAL CONDITIONS

NUMBER OF CHRONIC MEDICAL CONDITIONS REPORTED	*Cohort IV* PERFORMANCE MEASUREMENT ANALYTIC SAMPLE	*Cohort IV Follow Up* ELIGIBLE SAMPLE	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE	*Cohort IV Follow Up* RESPONDENT SAMPLE	
	Baseline (N=95,086) (%)	**Baseline** (N=63,660) (%)	**Baseline** (N=12,873) (%)	**Baseline** (N=50,398) (%)	**Follow Up** (N=50,321) (%)
0	11.8	12.3	12.4	12.2	10.2
1	19.4	20.1	19.4	20.3	18.1
2	21.1	21.4	21.4	21.4	20.2
3	17.7	17.7	17.7	17.7	18.4
4 or more	30.0	28.5	29.1	28.3	33.2

ACTIVITIES OF DAILY LIVING (TABLE E3)

Six ADLs are included in the HOS survey to determine self reported difficulty with performance of daily tasks. Activities include bathing, dressing, eating, getting in or out of chairs, walking, and using the toilet. Responses reporting difficulty or inability to do the activity are categorized as "having difficulty."

Overall, beneficiaries had the most difficulty with activities requiring lower body strength, such as walking and getting in or out of chairs. They had moderate difficulty with bathing and dressing, and the least difficulty with eating and toileting. In the respondent sample, there was an increase in the number of beneficiaries who reported difficulty with performing ADLs in all six categories from baseline to follow up.

A detailed graphical presentation of the ADLs at the plan, state, and national level is included in the Supplemental Figures section (I) of this report (Figure 16).

TABLE E3
ACTIVITIES OF DAILY LIVING (ADLS)

DIFFICULTY WITH ACTIVITIES OF DAILY LIVING	*Cohort IV* PERFORMANCE MEASUREMENT ANALYTIC SAMPLE	*Cohort IV Follow Up* ELIGIBLE SAMPLE	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE	*Cohort IV Follow Up* RESPONDENT SAMPLE	
	Baseline (%)	**Baseline** (%)	**Baseline** (%)	**Baseline** (%)	**Follow Up** (%)
Bathing	(N=94,706)	(N=63,431)	(N=12,781)	(N=50,260)	(N=50,245)
Yes	14.4	11.9	16.2	10.7	14.6
No	85.7	88.1	83.8	89.3	85.4
Dressing	(N=94,753)	(N=63,447)	(N=12,784)	(N=50,274)	(N=50,273)
Yes	11.7	9.7	13.0	8.8	12.0
No	88.3	90.3	87.0	91.3	88.0
Eating	(N=94,621)	(N=63,380)	(N=12,762)	(N=50,228)	(N=50,171)
Yes	5.8	4.6	6.1	4.1	5.8
No	94.3	95.5	93.9	95.9	94.3
Getting In or Out of Chairs	(N=94,507)	(N=63,288)	(N=12,741)	(N=50,163)	(N=50,104)
Yes	27.3	25.5	28.8	24.6	29.4
No	72.7	74.5	71.2	75.4	70.6
Walking	(N=94,624)	(N=63,351)	(N=12,755)	(N=50,208)	(N=50,175)
Yes	35.6	33.2	37.0	32.2	37.2
No	64.4	66.8	63.0	67.9	62.8
Using the Toilet	(N=94,797)	(N=63,484)	(N=12,799)	(N=50,294)	(N=50,261)
Yes	8.3	6.7	9.1	6.1	8.5
No	91.7	93.3	90.9	93.9	91.6

DEPRESSION SCREEN (TABLE E4)

A participant of the Medicare HOS Survey is considered to have a positive depression screen when he or she answers "yes" to *any* of the three depression questions (numbers 39, 40, or 41). Individuals with a positive depression screen may be at risk for depressive disorders.[3] These individuals may experience poor outcomes.

At baseline, 23.9% of the *Cohort IV Follow Up respondent sample* answered "yes" to any of the three depression questions, while 25.4% answered "yes" at follow up. A detailed graphical presentation of the depression screen at the plan, state, and national level is included in the Supplemental Figures section (I) of this report (Figure 12).

TABLE E4
DEPRESSION SCREEN

POSITIVE DEPRESSION SCREEN	*Cohort IV* PERFORMANCE MEASUREMENT ANALYTIC SAMPLE	*Cohort IV Follow Up* ELIGIBLE SAMPLE	*Cohort IV Follow Up* NON-RESPONDENT SAMPLE	*Cohort IV Follow Up* RESPONDENT SAMPLE	
	Baseline (N=93,726) (%)	**Baseline** (N=62,785) (%)	**Baseline** (N=12,593) (%)	**Baseline** (N=49,813) (%)	**Follow Up** (N=49,636) (%)
Yes	26.7	24.9	28.7	23.9	25.4
No	73.3	75.1	71.4	76.1	74.6

[3] Burnam MA, Wells KB, Leake B, Landsverk J. Development of a brief screening instrument for detecting depressive disorders. *Medical Care* 1988; 26: 775-789.

Participating Plans

Please Note: In January 2004, reporting units were updated by CMS to identify the 152 M+COs that would be included in the *Cohort IV* Performance Measurement analysis. In order to accurately reflect the organization and product names associated with the reporting, the April 2004 CMS Monthly Report of Managed Care Health Plans was used to create the following table (*http://cms.hhs.gov/healthplans/statistics/monthly*). Organization names, product names, and other information may have changed since April 2004.

The following table is sorted by state. A key to the table is included on page F7.

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H0150	HEALTHSPRING OF ALABAMA, INC.	SENIORS FIRST	AL	CMP	IPA	PRO
H0151	UNITED HEALTHCARE OF ALABAMA, INC.	MEDICARE COMPLETE	AL	CMP	IPA	PRO
H0154	VIVA HEALTH, INC.	VIVA MEDICARE	AL	CMP	IPA	PRO
H0302	SUN HEALTH MEDISUN, INC.	SUN HEALTH MEDISUN	AZ	CMP	GROUP	PRO
H0303	PACIFICARE OF ARIZONA, INC.	SECURE HORIZONS	AZ	HMO	IPA	PRO
H0307	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	AZ	HMO	IPA	PRO
H0350	MARICOPA INTEGRATED HEALTH SYSTEM HP	MARICOPA SENIOR SELECT (MSSP)	AZ	CMP	IPA	NON
H0351	HEALTH NET OF ARIZONA, INC.	SENIOR CARE	AZ	HMO	IPA	PRO
H0354	CIGNA HEALTHCARE OF ARIZONA, INC.	CIGNA HEALTHCARE FOR SENIORS	AZ	CMP	STAFF	PRO
H0502	CONTRA COSTA HEALTH PLAN	SENIOR HEALTH	CA	HMO	STAFF	NON
H0504	CA PHYSICIANS SERV/DBA BLUE SHIELD OF CALIFORNIA	SHIELD 65	CA	CMP	IPA	NON
H0523	AETNA HEALTH OF CALIFORNIA, INC.	AETNA U.S. HEALTHCARE GOLDEN MEDIARE PLAN	CA	HMO	IPA	PRO
H0524	KAISER FOUNDATION HP, INC.	KAISER PERMANENTE SENIOR ADVANTAGE	CA	HMO	GROUP	NON
H0532	WESTERN HEALTH ADVANTAGE	WHA MEDICARE PLAN	CA	CMP	GROUP	NON
H0543	PACIFICARE OF CALIFORNIA/SECURE HORIZONS	SECURE HORIZONS	CA	HMO	IPA	PRO
H0545	INTER VALLEY HEALTH PLAN, INC.	SERVICE TO SENIOR	CA	HMO	IPA	NON
H0562	HEALTH NET OF CALIFORNIA	HEALTH NET SENIORITY PLUS	CA	HMO	IPA	NON
H0564	BLUE CROSS OF CALIFORNIA	BLUE CROSS SENIOR SECURE	CA	CMP	IPA	PRO
H9016	UHP HEALTHCARE	UNITED HEALTH PLAN FOR SENIORS	CA	HMO	GROUP	NON
H9104	SCAN HEALTH PLAN	SCAN	CA	OTH	GROUP	NON
H0602	ROCKY MOUNTAIN HEALTH PLANS	ROCKY MOUNTAIN MEDICARE PLAN	CO	HMO	IPA	NON
H0609	PACIFICARE OF COLORADO, INC.	SECURE HORIZONS	CO	HMO	IPA	PRO
H0630	KAISER FOUNDATION HP OF CO	KAISER PERMANENTE SENIOR ADVANTAGE	CO	HMO	GROUP	NON

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H0657	HMO HEALTH PLANS, INC.	HMO HEALTH PLANS	CO	HMO	IPA	NON
H0752	OXFORD HEALTH PLANS (CT), INC.	MEDICARE ADVANTAGE	CT	CMP	IPA	PRO
H0755	HEALTH NET OF CONNECTICUT	HEALTH NET SMARTCHOICE	CT	HMO	IPA	PRO
H1010	CAPITAL HEALTH PLAN, INC.	CAPITAL HEALTH PLAN	FL	HMO	STAFF	NON
H1013	VISTA HEALTHPLAN OF SOUTH FLORIDA, INC.	FOUNDATION SENIOR VALUE	FL	CMP	IPA	PRO
H1016	AV-MED HEALTH PLAN, INC.	AV-MED MEDICARE PLAN	FL	HMO	IPA	NON
H1019	CAREPLUS HEALTH PLANS, INC.	PHYSICIANS CARE PLUS	FL	CMP	IPA	PRO
H1026	HEALTH OPTIONS, INC.	MEDICARE AND MORE	FL	HMO	IPA	PRO
H1032	WELL CARE HMO, INC.	WELL CARE HMO, INC.	FL	CMP	GROUP	PRO
H1035	FLORIDA HEALTH CARE PLAN, INC.	SENIOR CARE	FL	HMO	STAFF	NON
H1036	HUMANA MEDICAL PLAN, INC.	HUMANA GOLD PLUS PLAN	FL	HMO	STAFF	PRO
H1076	VISTA HEALTHPLAN, INC.	HIP VIP MEDICARE PLAN	FL	CMP	IPA	NON
H1078	NEIGHBORHOOD HEALTH PARTNERSHIP, INC.	NEIGHBORHOOD HEALTH PARTNERSHIP THE SENIOR HEALTH CHOICE	FL	CMP	IPA	NON
H1080	UNITED HEALTHCARE OF FLORIDA, INC.	MEDICARE COMPLETE	FL	CMP	IPA	PRO
H1099	HEALTH FIRST HEALTH PLANS, INC.	HEALTH FIRST MEDICARE PLAN	FL	CMP	GROUP	PRO
H9011	UNITED HEALTHCARE OF FLORIDA, INC.	MEDICARE COMPLETE	FL	CMP	STAFF	PRO
H1168	BLUE CROSS BLUE SHIELD HEALTH CARE GA	BLUECHOICE PLATINUM	GA	CMP	IPA	PRO
H1170	KAISER FOUNDATION HP OF GA, INC.	SENIOR ADVANTAGE	GA	HMO	GROUP	NON
H1230	KAISER FOUNDATION HP, INC.	SENIOR PLAN	HI	HMO	GROUP	NON
H1251	HAWAII MED. SRVC. ASSN.	65 C PLUS	HI	CMP	IPA	NON
H1651	MEDICAL ASSOCIATES HEALTH PLAN, INC.	MEDICARE ADVANTAGE	IA	CMP	GROUP	PRO
H1349	REGENCE BLUESHIELD OF IDAHO	HEALTHSENSE 65	ID	CMP	IPA	NON
H1350	BLUE CROSS OF IDAHO HEALTH SERVICES, INC.	TRUE BLUE	ID	CMP	IPA	NON
H1406	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	IL	HMO	IPA	NON
H1463	HEALTH ALLIANCE MEDICAL PLANS	HEALTH ALLIANCE PREMIER CHOICE	IL	HMO	GROUP	PRO
H1468	OSF HEALTHPLANS, INC.	OSF CARE ADVANTAGE	IL	CMP	IPA	PRO
H1472	JOHN DEERE HEALTH PLAN, INC.	SENIOR CARE	IL	CMP	IPA	PRO
H1553	THE M PLAN, INC.	SENIOR SECURECARE	IN	HMO	IPA	PRO
H1555	ARNETT HMO	MEDICARE PLAN	IN	HMO	GROUP	PRO
H1558	WELBORN HEALTH PLAN	WELBORN CLINIC	IN	HMO	GROUP	PRO
H2672	COVENTRY HEALTH CARE OF KANSAS, INC.	ADVANTRA 65	KS	CMP	GROUP	PRO
H1849	ANTHEM HEALTH PLANS OF KENTUCKY, INC.	ANTHEM SENIOR ADVANTAGE	KY	CMP	IPA	PRO
H1951	OCHSNER HEALTH PLAN	TOTAL HEALTH 65	LA	HMO	GROUP	PRO

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H1961	TENET CHOICES, INC.	TENET CHOICES 65	LA	OTH	OTHER	N/A
H2206	HARVARD PILGRIM HEALTH CARE	FIRST SENIORITY	MA	HMO	STAFF	NON
H2256	TUFTS ASSOCIATED HMO, INC.	SECURE HORIZONS TUFTS HEALTH PLAN FOR SENIORS	MA	HMO	IPA	NON
H2261	BLUE CROSS & BLUE SHIELD-MASSACHUSETTS	BLUE CARE 65	MA	CMP	IPA	NON
H9001	FALLON COMMUNITY HEALTH PLAN, INC.	SENIOR PLAN	MA	HMO	GROUP	NON
H2150	KAISER FOUNDATION HP OF THE MID-ATLANTIC STATES	MEDICARE PLUS	MD	HMO	GROUP	NON
H2312	HEALTH ALLIANCE PLAN OF MICHIGAN	HAP SENIOR PLUS	MI	HMO	GROUP	NON
H2354	HEALTHPLUS OF MICHIGAN	HEALTHPLUS SENIOR	MI	CMP	IPA	NON
H2459	UCARE MINNESOTA	UCARE FOR SENIORS	MN	CMP	IPA	NON
H2461	FIRST PLAN OF MINNESOTA	SENIORS FIRST	MN	CMP	GROUP	NON
H2462	HEALTHPARTNERS	NOT AVAILABLE	MN	CMP	IPA	NON
H9005	GROUP HEALTH PLAN, INC.	GROUP HEALTH SENIORS	MN	HMO	STAFF	NON
H2649	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	MO	HMO	STAFF	PRO
H2654	UNITED HEALTHCARE OF THE MIDWEST, INC.	MEDICARE COMPLETE	MO	CMP	IPA	PRO
H2663	GROUP HEALTH PLAN, INC.	ADVANTRA	MO	HMO	GROUP	PRO
H2667	MERCY HEALTH PLANS OF MISSOURI, INC.	MERCY CARE PLUS	MO	CMP	IPA	PRO
H3449	PARTNERS NATIONAL HEALTH PLANS OF NC, INC	PARTNERS MEDICARE CHOICE	NC	CMP	IPA	PRO
H3456	UNITED HEALTHCARE OF NORTH CAROLINA	MEDICARE COMPLETE	NC	CMP	IPA	PRO
H3503	HEART OF AMERICA HMO	HEART OF AMERICA MEDICARE COORDINATED CARE PLAN	ND	HMO	GROUP	NON
H2802	UNITED HEALTHCARE OF THE MIDLANDS, INC.	MEDICARE COMPLETE	NE	CMP	IPA	PRO
H2204	HARVARD PILGRIM HEALTH CARE OF NEW ENGLAND	SENIORCARE	NH	HMO	GROUP	NON
H3107	OXFORD HEALTH PLANS (NJ), INC.	OXFORD MEDICARE ADVANTAGE	NJ	CMP	IPA	PRO
H3152	AETNA HEALTH, INC.	AETNA U.S. HEALTHCARE GOLDEN MEDICARE PLAN	NJ	HMO	IPA	PRO
H3154	HORIZON HEALTHCARE OF NEW JERSEY, INC.	MEDICARE BLUE	NJ	CMP	IPA	PRO
H3156	AMERIHEALTH HMO, INC.	AMERIHEALTH 65	NJ	HMO	IPA	PRO
H3164	AMERICHOICE OF NEW JERSEY, INC.	AMERICHOICE PERSONAL CARE PLUS	NJ	CMP	GROUP	PRO
H3204	PRESBYTERIAN HEALTH PLAN	PRESBYTERIAN SENIOR CARE	NM	HMO	IPA	PRO
H3251	LOVELACE HEALTH PLAN, INC.	LOVELACE SENIOR PLAN	NM	HMO	GROUP	PRO
H2931	HEALTH PLAN OF NEVADA, INC.	SENIOR DIMENSIONS	NV	HMO	GROUP	PRO
H2949	PACIFICARE OF NEVADA, INC.	SECURE HORIZONS	NV	HMO	IPA	PRO

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H2960	HOMETOWN HEALTH PLAN	SENIOR CARE PLUS HEALTH PLAN	NV	HMO	IPA	NON
H2961	HEALTH PLAN OF NEVADA	SENIOR DIMENSIONS	NV	OTH	GROUP	N/A
H3305	ROCHESTER AREA HMO/ DBA PREFERRED CARE	PREFERRED CARE GOLD	NY	HMO	IPA	NON
H3307	OXFORD HEALTH PLANS (NY), INC.	OXFORD MEDICARE ADVANTAGE	NY	CMP	IPA	PRO
H3312	AETNA HEALTH, INC.	AETNA U.S.HEALTHCARE GOLDEN MEDICARE PLAN	NY	HMO	IPA	PRO
H3330	HIP OF GREATER NEW YORK	HIP VIP MEDICARE PLAN	NY	CMP	GROUP	NON
H3351	EXCELLUS HEALTH PLAN, INC.	SENIORCHOICE	NY	HMO	STAFF	NON
H3356	EXCELLUS HEALTH PLAN, INC.	BLUE CHOICE SENIOR/SENIORCARE	NY	CMP	IPA	NON
H3359	MANAGED HEALTH, INC.	MANAGED HEALTH 65 PLUS	NY	CMP	GROUP	NON
H3361	WELLCARE OF NEW YORK, INC.	SENIOR HEALTH PLAN	NY	CMP	IPA	PRO
H3362	INDEPENDENT HEALTH ASSOC.	INDEPENDENT HEALTH'S ENCOMPASS 65	NY	CMP	IPA	NON
H3366	HEALTH NET OF NY	HEALTH NET SMARTCHOICE	NY	HMO	IPA	PRO
H3370	EMPIRE HEALTHCHOICE HMO, INC.	BLUECHOICE SENIOR PLAN	NY	CMP	IPA	NON
H3379	UNITED HEALTHCARE OF NEW YORK, INC.	MEDICARE COMPLETE	NY	CMP	GROUP	PRO
H3384	HEALTHNOW\BLUE CROSS BLUE SHIELD OF WESTERN NY	SENIOR BLUE	NY	CMP	IPA	NON
H3387	AMERICHOICE OF NEW YORK, INC.	AMERICHOICE PERSONAL CARE PLUS	NY	CMP	STAFF	PRO
H3388	CAPITAL DISTRICT PHYSICIANS' HP, INC.	MEDICARE CHOICE	NY	CMP	GROUP	NON
H9101	ELDERPLAN, INC. - SHMO	ELDERPLAN	NY	OTH	GROUP	NON
H3653	PARAMOUNT CARE, INC.	PARAMOUNT ELITE	OH	CMP	IPA	PRO
H3655	COMMUNITY INSURANCE COMPANY	ANTHEM SENIOR ADVANTAGE	OH	CMP	GROUP	NON
H3657	QUALCHOICE HEALTH PLAN	QUALCHOICE MEDICARE PRIME	OH	CMP	IPA	PRO
H3659	UNITED HEALTHCARE OF OHIO, INC.	MEDICARE COMPLETE	OH	CMP	IPA	PRO
H3660	SUMMACARE, INC.	SUMMACARE SECURE	OH	CMP	GROUP	PRO
H3664	PRIMETIME MEDICAL INSURANCE COMPANY	PRIMETIME HEALTH PLAN	OH	CMP	GROUP	PRO
H3668	MT. CARMEL HEALTH PLAN, INC.	MEDIGOLD	OH	OTH	OTHER	NON
H3672	HOMETOWN HEALTH PLAN	HOMETOWN SECURECARE	OH	CMP	IPA	NON
H3673	HEALTHAMERICA PA, DBA HEALTHASSURANCE	ADVANTRA	OH	CMP	GROUP	PRO
H6360	KAISER FOUNDATION HP OF OHIO	MEDICARE PLUS	OH	HMO	GROUP	NON
H3749	PACIFICARE OF OKLAHOMA, INC.	SECURE HORIZONS	OK	HMO	GROUP	PRO
H3755	COMMUNITY CARE HMO, INC.	COMMUNITY CARE HMO SENIOR HEALTH PLAN	OK	HMO	IPA	PRO
H3805	PACIFICARE OF OREGON, INC.	SECURE HORIZONS	OR	HMO	IPA	PRO

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H3851	REGENCE BLUE CROSS BLUE SHIELD OF OREGON	PREFERRED CHOICE 65	OR	HMO	IPA	NON
H3856	REGENCE BLUE CROSS BLUE SHIELD OF OREGON	FIRST CHOICE 65	OR	HMO	IPA	NON
H3864	CENTRAL OREGON INDEPENDENT HEALTH SERVICES, INC.	CLEAR CHOICE HEALTH PLANS	OR	CMP	GROUP	PRO
H9003	KAISER FOUNDATION HP OF THE N W	KAISER-NW	OR	HMO	GROUP	NON
H9047	PROVIDENCE HEALTH PLAN	PROVIDENCE MEDICARE EXTRA	OR	HMO	IPA	NON
H9049	REGENCE BLUE CROSS BLUE SHIELD OF OREGON	FIRST CHOICE 65	OR	HMO	IPA	PRO
H9103	KAISER FOUNDATION HP OF THE N W	KAISER MEDICARE - PLUS II	OR	HMO	GROUP	NON
H3909	INDEPENDENCE BLUE CROSS	PERSONAL CHOICE 65	PA	OTH	OTHER	NON
H3931	AETNA HEALTH, INC.	US HEALTHCARE	PA	HMO	IPA	PRO
H3949	ELDER HEALTH OF PA, INC.	HEALTH NET SMARTCHOICE	PA	HMO	GROUP	PRO
H3952	KEYSTONE HEALTH PLAN EAST, INC.	KEYSTONE 65	PA	HMO	IPA	PRO
H3954	GEISINGER HEALTH PLAN	GEISINGER GOLD	PA	HMO	GROUP	NON
H3957	KEYSTONE HEALTH PLAN WEST, INC.	SECURITY BLUE	PA	HMO	IPA	PRO
H3959	HEALTHAMERICA PENNSYLVANIA, INC.	ADVANTRA	PA	HMO	GROUP	PRO
H3962	KEYSTONE HEALTH PLAN CENTRAL, INC.	SENIOR BLUE	PA	CMP	IPA	PRO
H3964	HEALTH PARTNERS OF PHILADELPHIA, INC.	NOT AVAILABLE	PA	OTH	OTHER	NON
H3972	AMERICHOICE OF PENNSYLVANIA, INC.	AMERICHOICE PERSONAL CARE PLUS	PA	CMP	GROUP	PRO
H4102	UNITED HEALTH PLANS OF NEW ENGLAND, INC.	MEDICARE COMPLETE	RI	CMP	IPA	PRO
H4152	COORDINATED HEALTH PARTNERS	BLUE CHIP FOR MEDICARE	RI	CMP	GROUP	PRO
H4454	HEALTHSPRING, INC.	HEALTH NET 65	TN	CMP	IPA	PRO
H4456	JOHN DEERE HEALTH PLAN, INC.	SECURE PLUS	TN	CMP	IPA	PRO
H4461	CARITEN HEALTH PLAN, INC.	CARITEN SENIOR HEALTH	TN	CMP	IPA	PRO
H4510	HUMANA HEALTH PLAN OF TEXAS, INC.	HUMANA GOLD PLUS PLAN	TX	HMO	IPA	PRO
H4564	SCOTT AND WHITE HEALTH PLAN	SENIORCARE	TX	CMP	GROUP	NON
H4590	PACIFICARE OF TEXAS, INC.	SECURE HORIZONS	TX	HMO	IPA	PRO
H5005	PACIFICARE OF WASHINGTON, INC.	SECURE HORIZONS	WA	CMP	IPA	PRO
H5050	GROUP HEALTH COOPERATIVE	GROUP HEALTH MEDICARE	WA	CMP	STAFF	NON
H5253	UNITED HEALTHCARE OF WISCONSIN, INC.	UNITEDHEALTHCARE OF WISCONSIN	WI	CMP	IPA	PRO
H5254	NETWORK HEALTH PLAN	NETWORK SENIOR PLUS	WI	CMP	GROUP	PRO
H5256	MEDICAL ASSOCIATES CLINIC HEALTH PLAN	MEDICARE ADVANTAGE	WI	CMP	GROUP	NON

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H5262	GUNDERSEN LUTHERAN HEALTH PLAN	GUNDERSEN LUTHERAN SENIOR PREFERRED	WI	CMP	STAFF	NON
H5264	DEAN HEALTH PLAN, INC./DEANCARE HMO	DEANCARE GOLD	WI	CMP	GROUP	PRO
H5102	HEALTH PLAN OF THE UPPER OHIO VALLEY	HP UPPER OH VALLEY	WV	HMO	IPA	NON
H5149	CARELINK HEALTH PLANS, INC.	ADVANTRA	WV	CMP	GROUP	PRO
H5151	HEALTH PLAN OF THE UPPER OHIO VALLEY	HEALTH PLAN MEDICARE CHOICE	WV	HMO	IPA	NON

KEY TO THE PARTICIPATING PLANS TABLE:

CATEGORY	ABBREVIATION	DEFINITION
Plan Type	CMP	**Competitive Medical Plan** A Competitive Medical Plan is a prepaid health plan, which may be a separate legal entity, or a line of business of another organization, currently serving a commercial market and found eligible under Section 1876 to negotiate a contract with CMS to serve Medicare enrollees.
	HMO	**Health Maintenance Organization** A Health Maintenance Organization is a prepaid health plan, as defined by Title XIII of the Public Health Service Act and its amendments, which is a separate legal entity and provides comprehensive health maintenance and treatment services on a prepaid basis.
	OTH	**Other** The "Other" plan type describes a Health Care Prepayment Plan (part B services) or a demonstration organization.
	N/A	**Not Available**
Model Type	GROUP	**Group Practice Model** 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.
	STAFF	**Staff Model** The Staff Model is an organizational form whereby the HMO employs the necessary medical providers to provide its medical services.
	IPA	**Individual Practice Association** 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.
	OTHER	**Other** The "Other" model is a mixed model type.
	N/A	**Not Available**
Tax Status	PRO	**For Profit**
	NON	**Not For Profit**
	N/A	**Not Available**

Definitions of Key Terms

ACTIVITIES OF DAILY LIVING (ADLS)	Activities of daily living are the everyday activities involved in personal care such as feeding, dressing, bathing, getting in or out of chairs, toileting, and walking. Physical or mental disabilities can restrict a person's ability to perform personal ADLs.
ANALYTIC SAMPLE	The analytic sample for the Medicare HOS Performance Measurement Report is limited to those seniors, age 65 or older at baseline, who had baseline PCS and MCS scores, and a valid reporting unit (managed care plan) at follow up. For the *Cohort IV* Performance Measurement there are 95,565 beneficiaries in the analytic sample.
BASELINE INVALID SURVEY	An invalid member at *baseline* meets one of the following criteria: deceased, no longer enrolled in the M+CO, has an incorrect address and phone number, or has a language barrier.
BENEFICIARY	An individual receiving benefits from the Medicare program
BODILY PAIN (BP) SCALE	The Bodily Pain scale is derived from the SF-36® survey. It assesses respondents' frequency of pain and the extent to which it interferes with their normal activities.
CASE MIX ADJUSTMENT	This is a method that adjusts the resulting data for patient characteristics that are known to be related to systematic biases in the way people respond to survey questions. This is accomplished using logistic regression models, and assumes that the control variables (covariates) have been measured accurately and that the models are correctly specified and applicable to all cases. The Medicare HOS Performance Measurement case mix adjustment methodology was originally created by Health Assessment Lab (HAL).
CATI	Computer Assisted Telephone Interviewing
CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS)	The Centers for Medicare & Medicaid Services is responsible for administering Medicare, Medicaid, and State Child Health Insurance Programs.

COHORT	A cohort is a group of people who share a common designation (e.g., "Medicare beneficiaries"), experience, or condition. In terms of the HOS, *Cohort IV* refers to the group of Medicare beneficiaries first surveyed in 2001.
CPM	NCQA's Committee on Performance Measurement that oversees the development of the HEDIS® measurement set
DATA CLEANING	This is the process by which discrepancies within the data are identified and resolved, including issues related to file structure, record numbers, range, and consistency. Data cleaning for all HOS cohorts is conducted by Health Services Advisory Group, Inc. (HSAG).
DEPRESSION SCREEN	A participant in the Medicare HOS is considered to have a positive depression screen when he or she answers "yes" to *any* of the three depression questions (numbers 39, 40, or 41). Individuals with a positive depression screen may be at risk for depressive disorders. These individuals may experience poor outcomes.
DISENROLLMENT	Beneficiaries no longer in their original M+CO at the time of follow up are considered disenrolled. There are two types of disenrollment: *Involuntary*: The beneficiary's plan is no longer a part of the HOS as of remeasurement in 2003. *Voluntary*: The beneficiary's plan continues in the HOS; however, the beneficiary is no longer enrolled in the health plan as of remeasurement in 2003.
ELIGIBLE SAMPLE	The *Cohort IV Follow Up eligible sample* is limited to those seniors (age 65 or older at baseline) who were alive at the time of follow up, had baseline PCS and MCS scores, and were still enrolled in their original plan in the HOS. There are 63,978 beneficiaries in the *Cohort IV Follow Up eligible sample*.
ESRD	End Stage Renal Disease
FOLLOW UP INVALID SURVEY	An invalid member at *follow up* meets one of the following criteria: no longer enrolled in the M+CO, has an incorrect address and phone number, or has a language barrier.

GENERAL HEALTH (GH) SCALE	The General Health scale is derived from the SF-36® survey. It assesses respondents' current health status overall, susceptibility to illness, and their expectations for health in the future.
HAL	Health Assessment Lab 235 Wyman Street, Suite 130 Waltham, MA 02451
HEDIS®	The Health Plan Employer Data and Information Set is the most widely used set of performance measures in the managed care industry, and is developed and maintained by NCQA.
HIC NUMBER (HIC #)	Health Insurance Claim Number (usually the Medicare number)
HOS MEASURE	See Medicare Health Outcomes Survey (HOS).
HOT	Health Outcomes Technologies Program Health Services Department Boston University School of Public Health 715 Albany Street (T-3W) Boston, MA 02118
HPMS	The Health Plan Management System is CMS' data collection and maintenance system that houses MCO and plan related information.
HSAG	Health Services Advisory Group, Inc. 1600 East Northern Avenue, Suite 100 Phoenix, AZ 85020
LIKERT SCALE	An ordinal scale of responses to a question in an ordered sequence, such as from "strongly disagree (1)" through "no opinion (2)" to "strongly agree (3)." Rensis Likert, a social psychologist, developed an empirical method for assigning numerical scores to such a scale.

M+CO	Established in section 4001 of the Balanced Budget Act of 1997 (under Part C of the Medicare Program), a Medicare + Choice Organization is a public or private entity organized and licensed under State law as a risk-bearing entity that is certified by CMS as meeting the Medicare + Choice contract requirements, which includes: processing the enrollment and disenrollment of beneficiaries within a plan; transmitting information such as enrollment information and encounter data to CMS; submitting marketing materials; providing all Medicare-covered benefits and other benefits covered under the contract in a manner consistent with specified access standards; performing quality assurance; creating and carrying out plan procedures for grievances, organization determinations, and appeals; maintaining necessary records; providing advance directives; establishing procedures related to provider participation; setting medical policies; notifying beneficiaries of any "Conscience Protection" exceptions; disclosing physician incentive plans; receiving payment; reporting financial information; paying user fees; making prompt payments to providers; receiving any sanctions invoked by CMS on any of the organization's plans; and fulfilling other contract requirements as specified in regulation.
MEDICARE HEALTH OUTCOMES SURVEY (HOS)	The Medicare Health Outcomes Survey is the first health outcomes measure for the Medicare population in managed care settings. It was developed in 1997 as the Health of Seniors survey in response to the growing number of Medicare beneficiaries receiving their health care through M+COs. The Medicare HOS assesses an M+CO's ability to maintain or improve the physical and mental health functioning of its Medicare members over time. The survey is administered to a random sample of members from each M+CO at the beginning and end of a two-year period. The HOS results are used to monitor the health of the general population, to evaluate treatment outcomes and procedures, and to provide external performance measurement.
MEDICARE HOS BASELINE REPORT	The Medicare Health Outcomes Survey baseline report is produced and made available to all participating M+COs and QIOs after each baseline cohort data collection is completed. It is part of a larger effort by CMS to improve the health care industry's capacity to sustain and improve health status and functioning within the Medicare population.

MEDICARE HOS PERFORMANCE MEASUREMENT REPORT	The Medicare Health Outcomes Survey Performance Measurement report is produced and made available to all participating M+COs and QIOs after the collection of follow up data on each cohort. Performance Measurement results reflect a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two-year period of time. It is part of a larger effort by CMS to improve the health care industry's capacity to sustain and improve health status and functioning within the Medicare population.
MENTAL COMPONENT SUMMARY (MCS) SCORE	The Mental Component Summary score is derived from the SF-36® survey, and is a reliable and valid measure of mental health. The measure is highly correlated with the Mental Health (MH), Role-Emotional (RE), and Social Functioning (SF) SF-36® scales.
MENTAL HEALTH (MH) SCALE	The Mental Health scale is derived from the SF-36® survey. It assesses how frequently respondents experience feelings representing four major mental health dimensions: anxiety, depression, loss of behavioral/emotional control, and psychological well being.
NCQA	National Committee for Quality Assurance 2000 L St, NW, Suite 500 Washington, DC 20036
OUTCOME	The Medicare HOS defines outcome as a change in health over time, which is characterized in terms of the direction and magnitude for a given respondent. The three major Medicare HOS outcomes are death, change in physical health, and change in mental health. The PCS and MCS performance measures describe the changes in physical and mental health.
OUTLIERS	Plans displaying characteristics which are significantly different from the norm
PERFORMANCE MEASUREMENT RESULTS	The adjusted differences between the HOS baseline and two-year follow up scores, which are presented as better, the same, or worse than expected for PCS and MCS

PHYSICAL COMPONENT SUMMARY (PCS) SCORE	The Physical Component Summary score is derived from the SF-36® survey, and is a reliable and valid measure of physical health. The measure is highly correlated with the Physical Functioning (PF), Role-Physical (RP), and Bodily Pain (BP) SF-36® scales.
PHYSICAL FUNCTIONING (PF) SCALE	The Physical Functioning scale is derived from the SF-36® survey and assesses the extent to which health limits respondents' performance of physical activities.
PROXY	An individual who completed a survey on behalf of the beneficiary
QIO	Quality Improvement Organization, formerly referred to as Peer Review Organization (PRO)
QM	QualityMetric, Incorporated 640 George Washington Highway Lincoln, RI 02865
QISMC	Quality Improvement System for Managed Care
RESPONDENT SAMPLE	The *Cohort IV Follow Up respondent sample* for the Medicare HOS is limited to those seniors eligible for remeasurement who have follow up PCS and MCS scores. There are 50,636 beneficiaries in the *Cohort IV Follow Up respondent sample*.
RESPONSE RATE	The Medicare HOS response rate is the number of eligible beneficiaries who have PCS and MCS scores, divided by the number of eligible beneficiaries sampled (excluding invalids).
RISK ADJUSTMENT	This is a method that adjusts for multiple factors, which may impact the outcome of interest. This is accomplished using regression models, and assumes that the control variables (covariates) have been measured accurately and that the models are correctly specified and applicable to all cases.
ROLE-EMOTIONAL (RE) SCALE	The Role-Emotional scale is derived from the SF-36® survey. It assesses whether emotional problems have caused respondents to accomplish less in their work or other usual activities, both in terms of time and performance.

ROLE-PHYSICAL (RP) SCALE	The Role-Physical scale is derived from the SF-36® survey. It assesses whether respondents' physical health limits them in the kind of work or other usual activities they perform, both in terms of time and performance.
RTI	Research Triangle Institute International 3040 Cornwallis Road PO Box 12194 Research Triangle Park, NC 27709
SAS®	A software package used for data processing and statistical analysis
SF-36®	SF-36® Health Survey
SOCIAL FUNCTIONING (SF) SCALE	The Social Functioning scale is derived from the SF-36® survey and assesses limitations in social function due specifically to health.
TECHNICAL EXPERT PANEL (TEP)	The Medicare HOS Technical Expert Panel (convened by NCQA) provides input for the continued development of the Medicare HOS measure, and is comprised of individuals with specific expertise in the health care industry and outcomes measurement.
VENDOR	Independent survey organization that is trained and certified by NCQA to administer the HOS Survey
VITALITY (VT) SCALE	The Vitality scale is derived from the SF-36® survey. It assesses well being by asking respondents to indicate how frequently they experience energy and fatigue.

HOS Partners

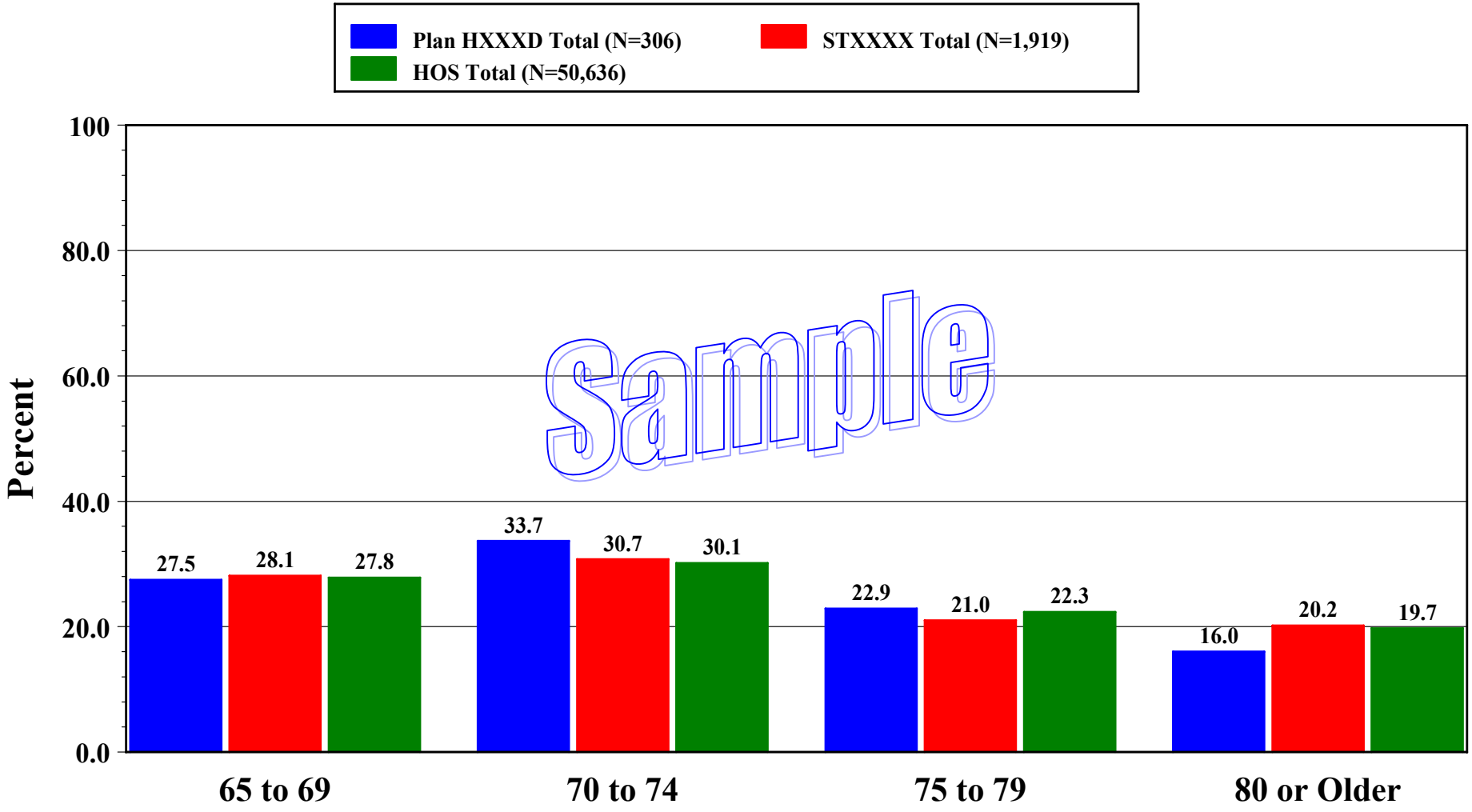
There are numerous individuals who have contributed to the development and success of the Medicare Health Outcomes Survey. It has been their sustained and committed efforts over time that have steadily moved the project forward from its initial inception in 1997 to the present.

Please refer to the HOS Partners section of the CMS HOS Website for further details. The HOS Partners information is updated on a regular basis.

Supplemental Figures

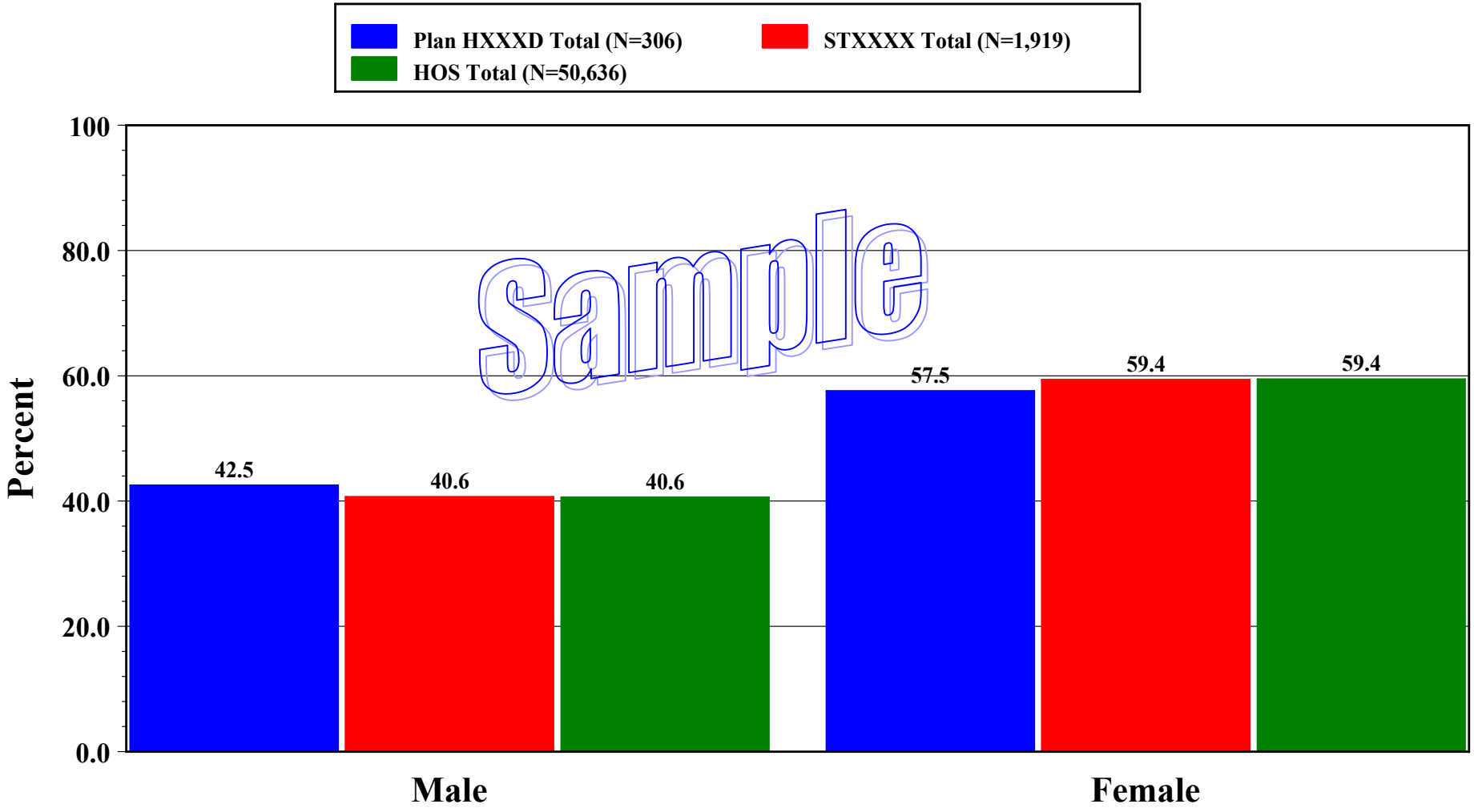
This section contains supplementary graphical depictions of plan, state, and HOS results. These graphs compare trends from baseline to follow up for the *Cohort IV Follow Up respondent sample* with an emphasis on demographics and health status indicators.

Figure 1: Percent Distribution of Age Group for Plan HXXXD, STXXXX Total, and HOS Total



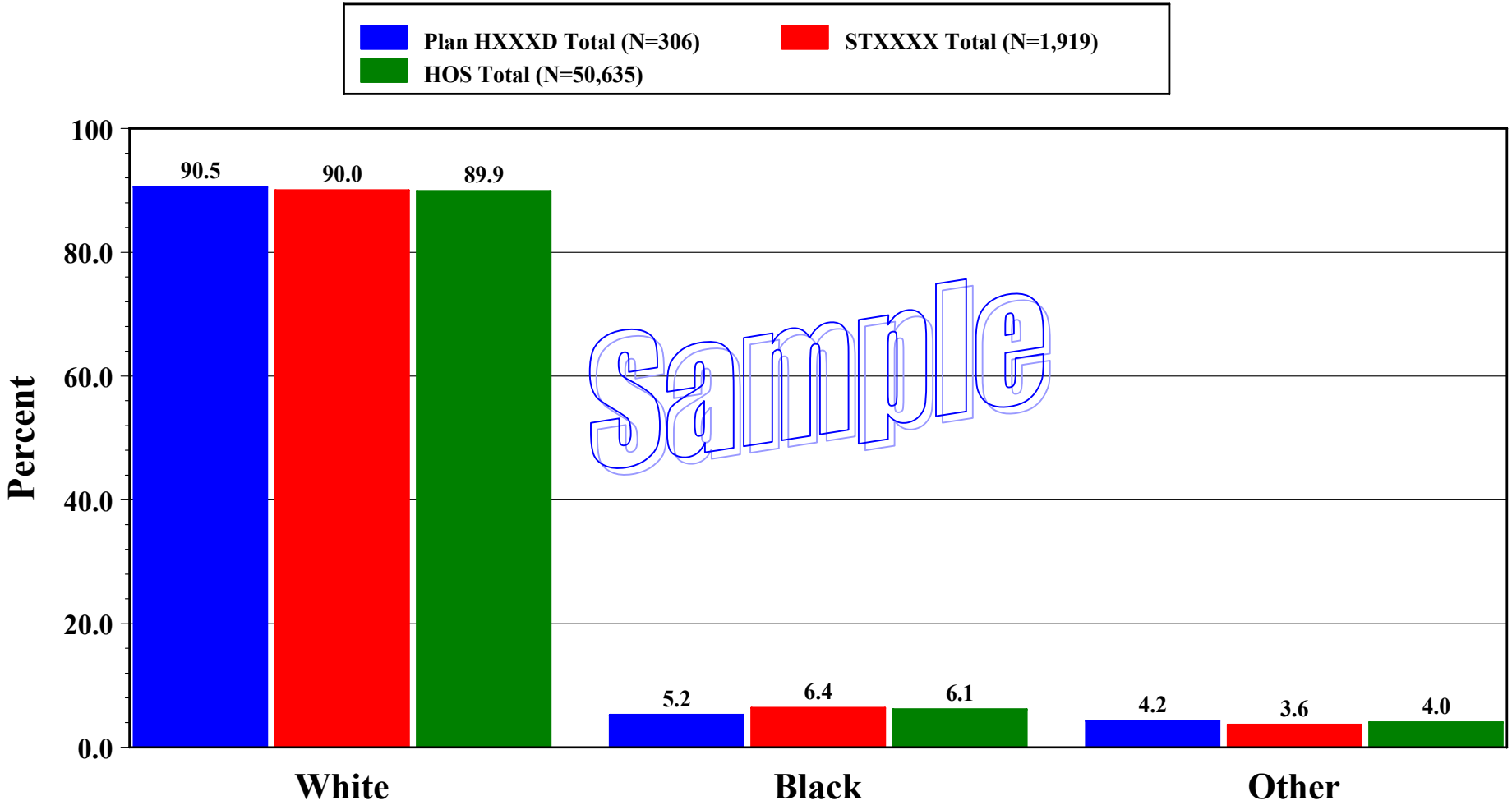
Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 2: Percent Distribution of Gender for Plan HXXXD, STXXXX Total, and HOS Total



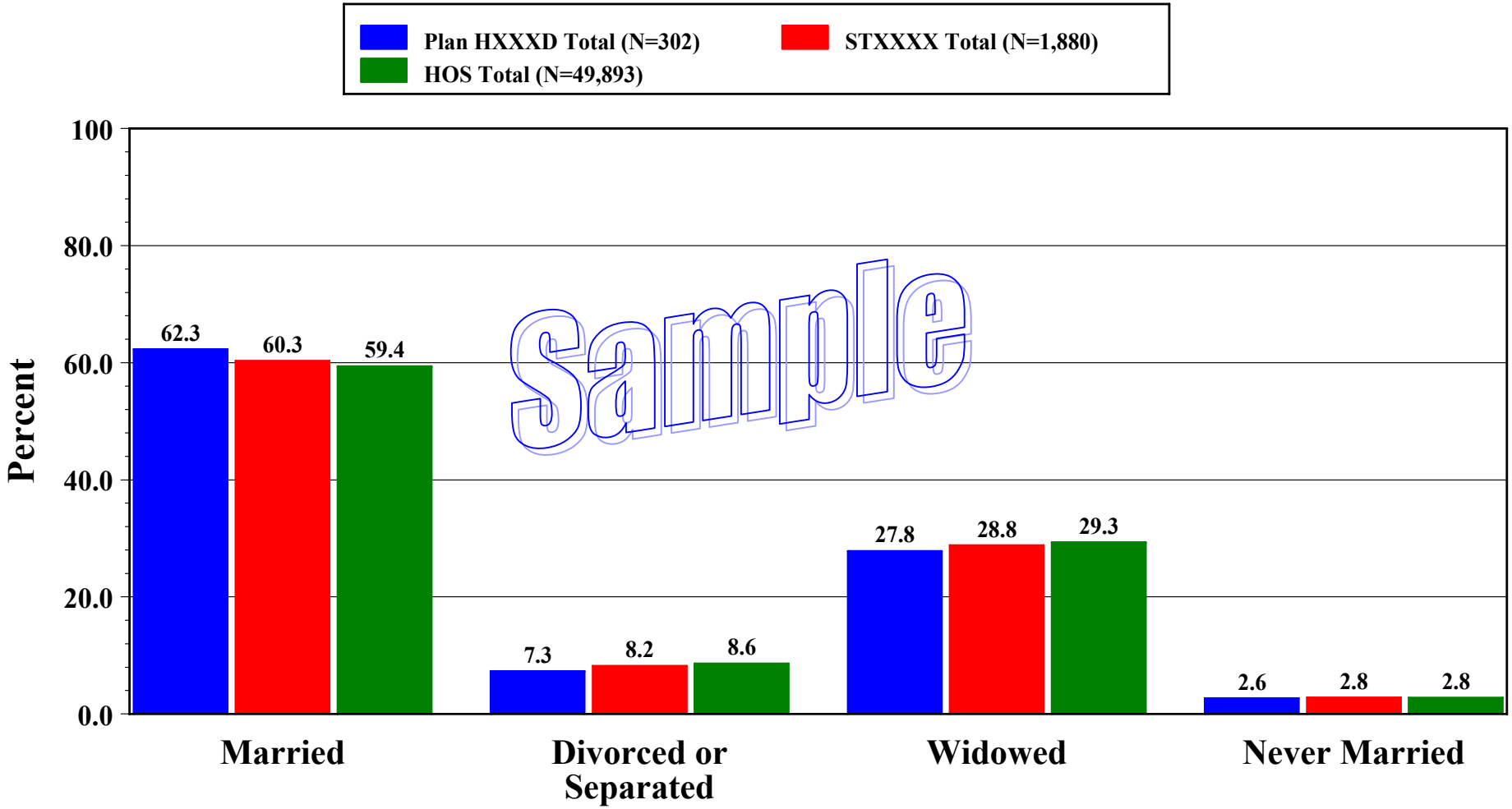
Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 3: Percent Distribution of Race for Plan HXXXD, STXXXX Total, and HOS Total



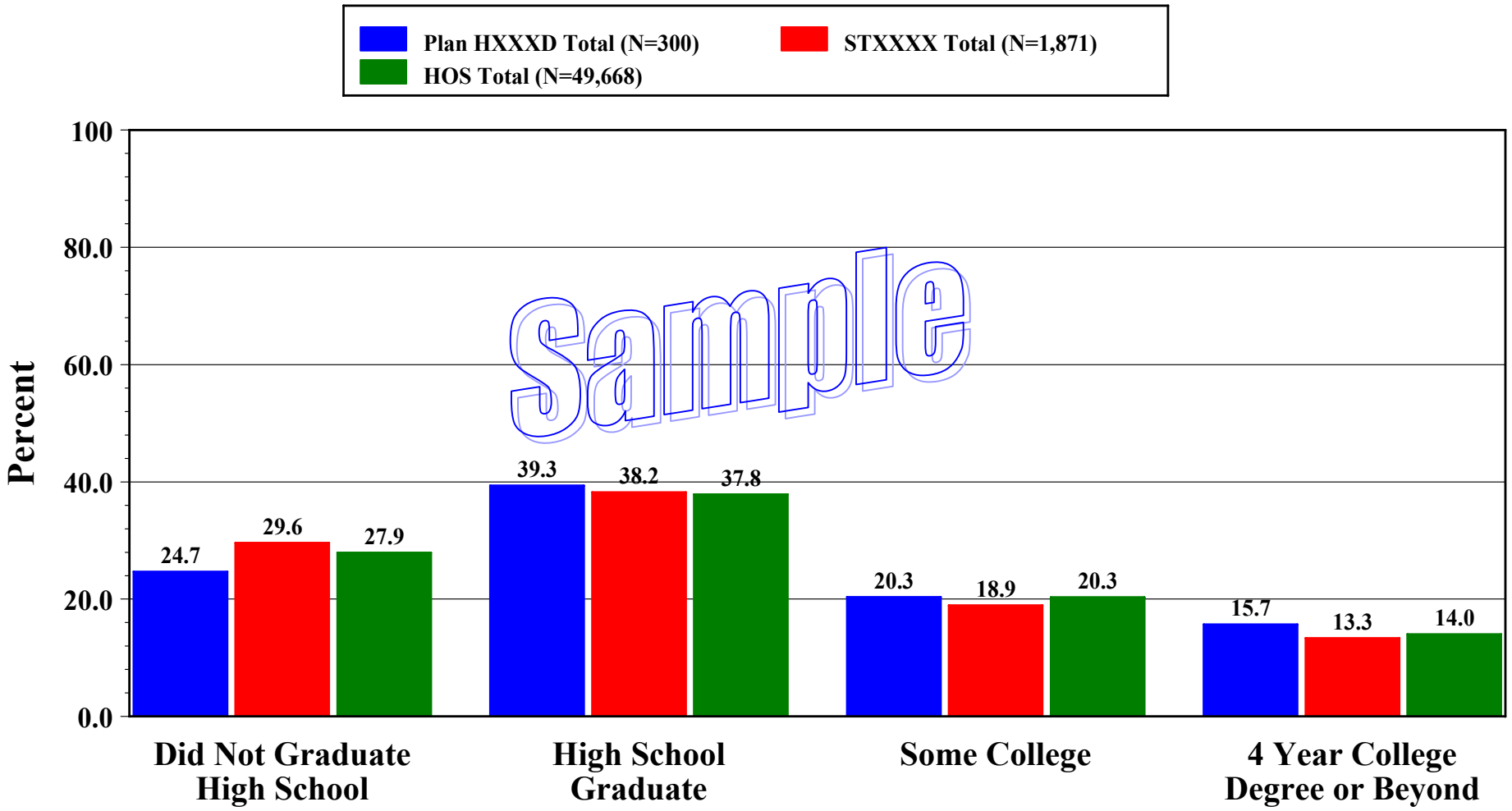
Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
A very small percentage of the "Other" category can be attributed to beneficiaries being coded as "Unknown."
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores
at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 4: Percent Distribution of Marital Status for Plan HXXXD, STXXXX Total, and HOS Total



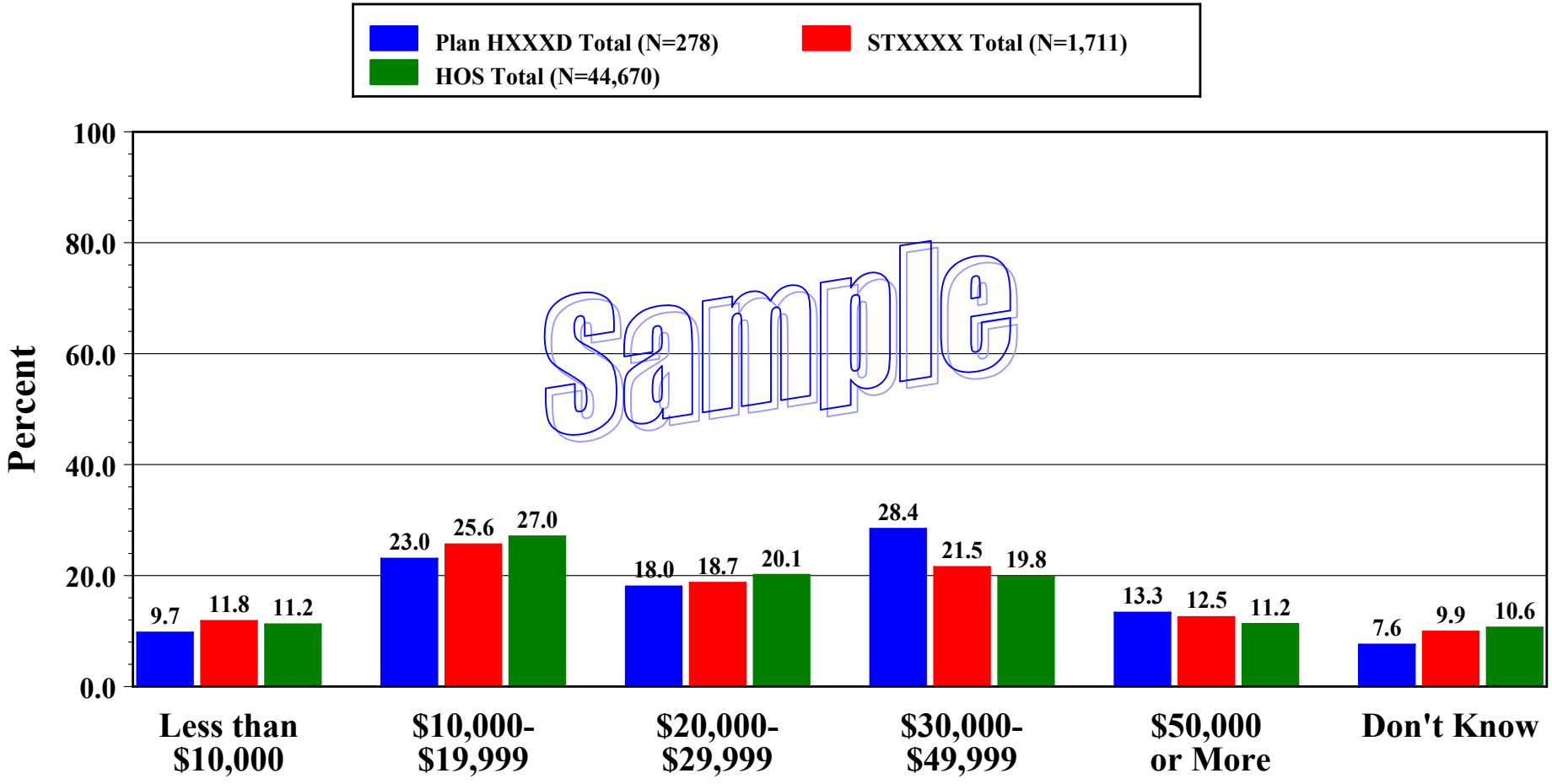
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #52: "What is your current marital status?"
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 5: Percent Distribution of Education for Plan HXXXD, STXXXX Total, and HOS Total



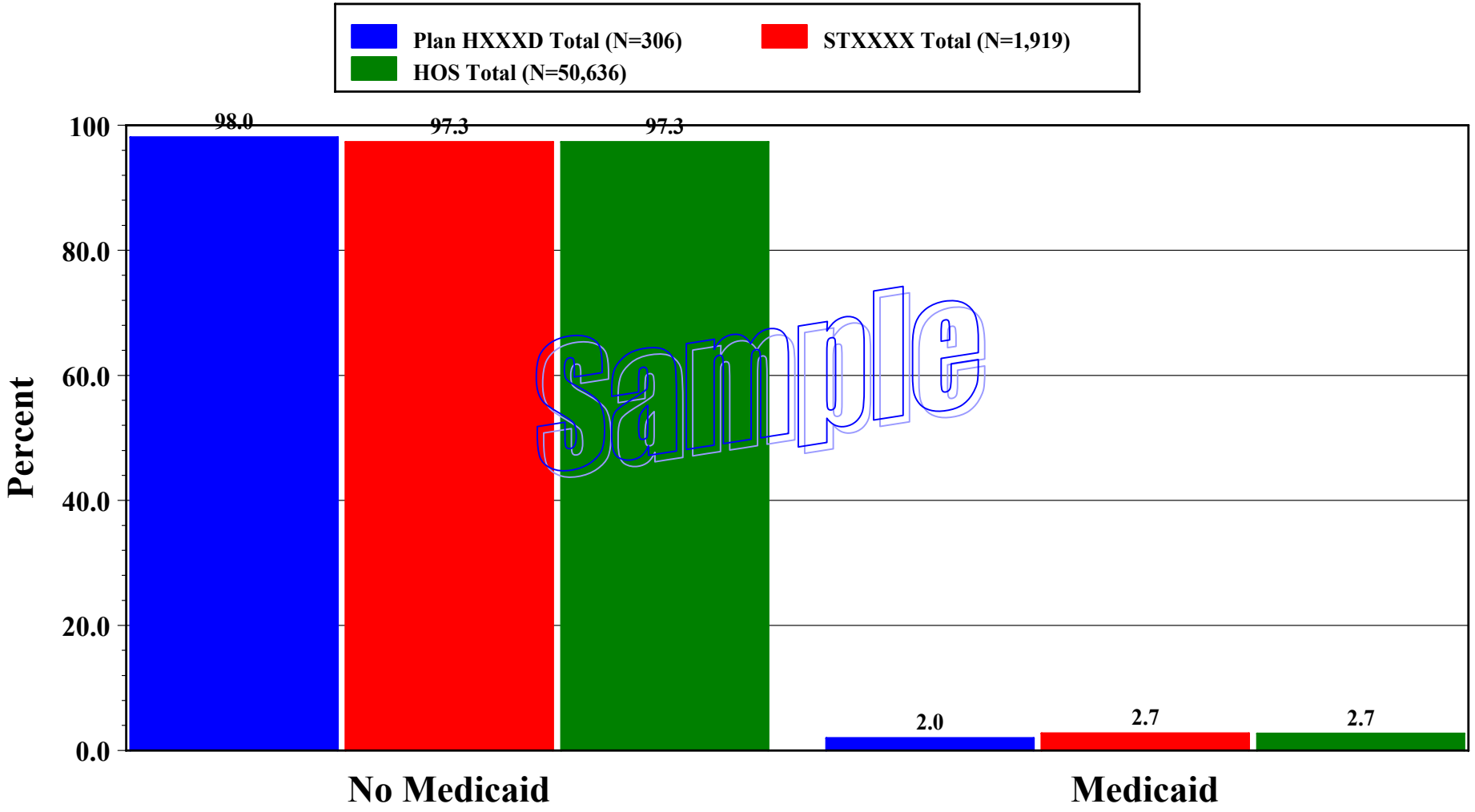
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #53: "What is the highest grade or level of school that you have completed?"
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores
at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 6: Percent Distribution of Annual Household Income for Plan HXXXD, STXXXX Total, and HOS Total



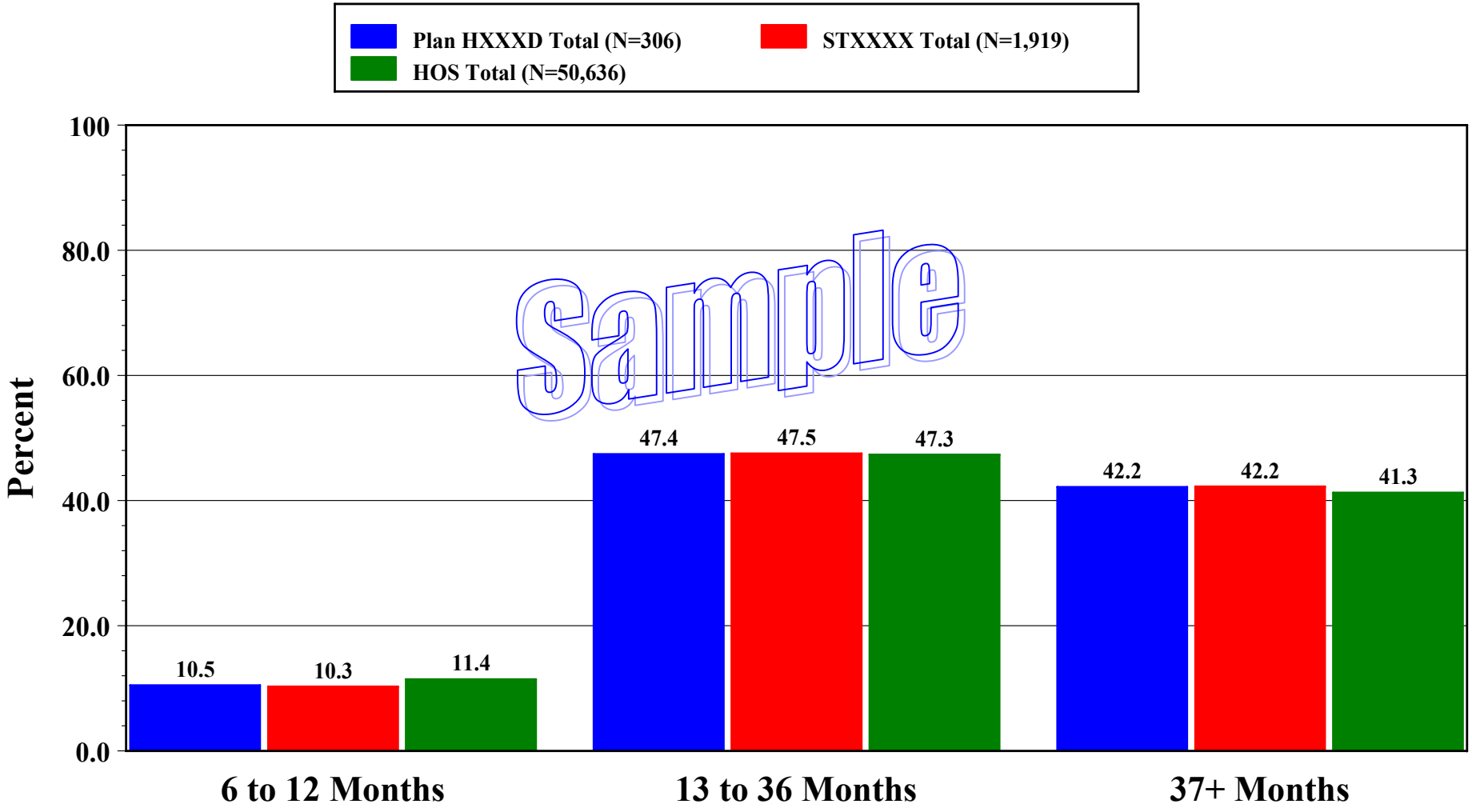
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #57: "Which of the following categories best represents the combined income for all family members in your household for the past 12 months?"
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 7: Percent Distribution of Medicaid Status for Plan HXXXD, STXXXX Total, and HOS Total



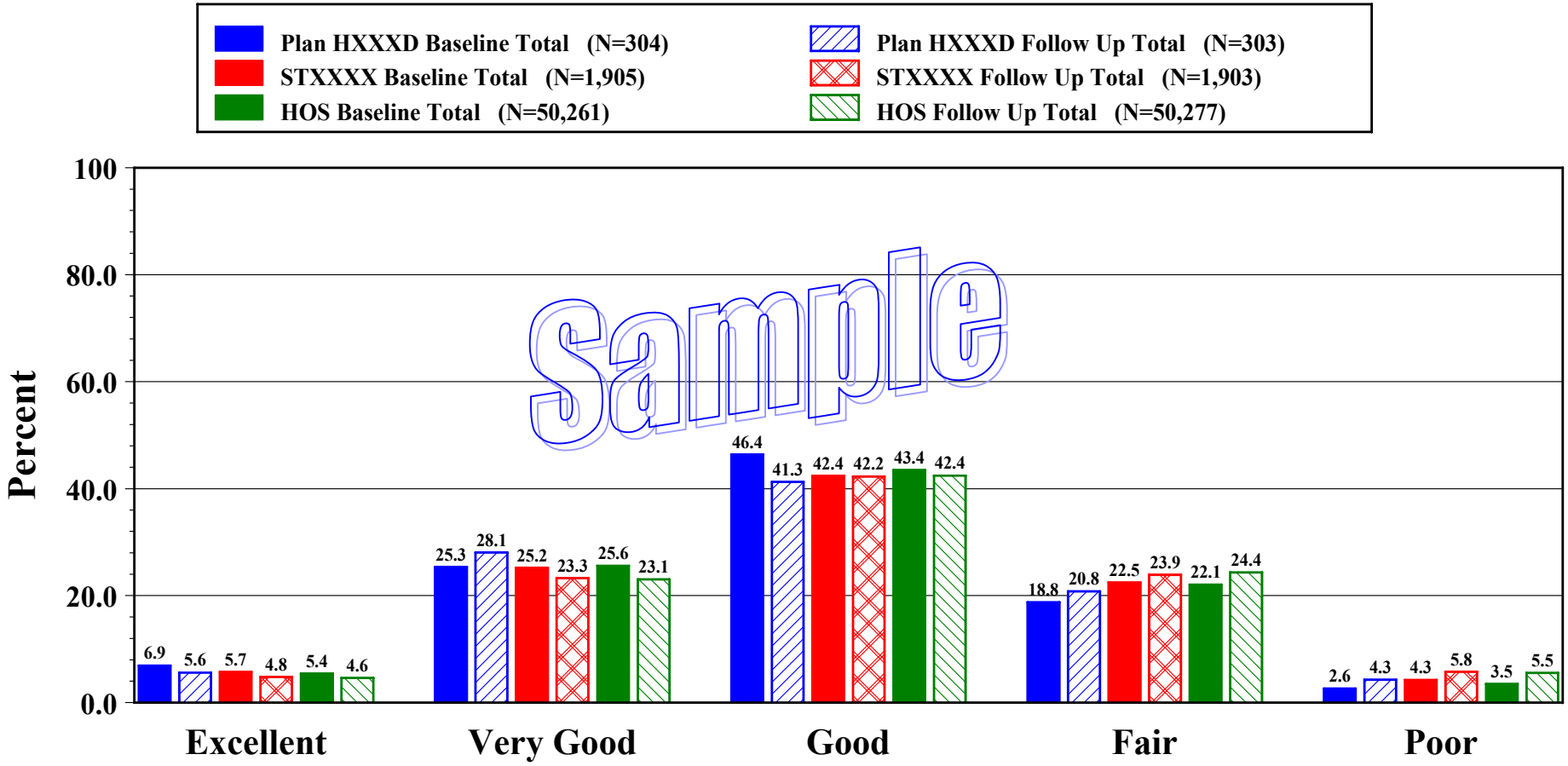
Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 8: Percent Distribution of Enrollment Duration for Plan HXXXD, STXXXX Total, and HOS Total



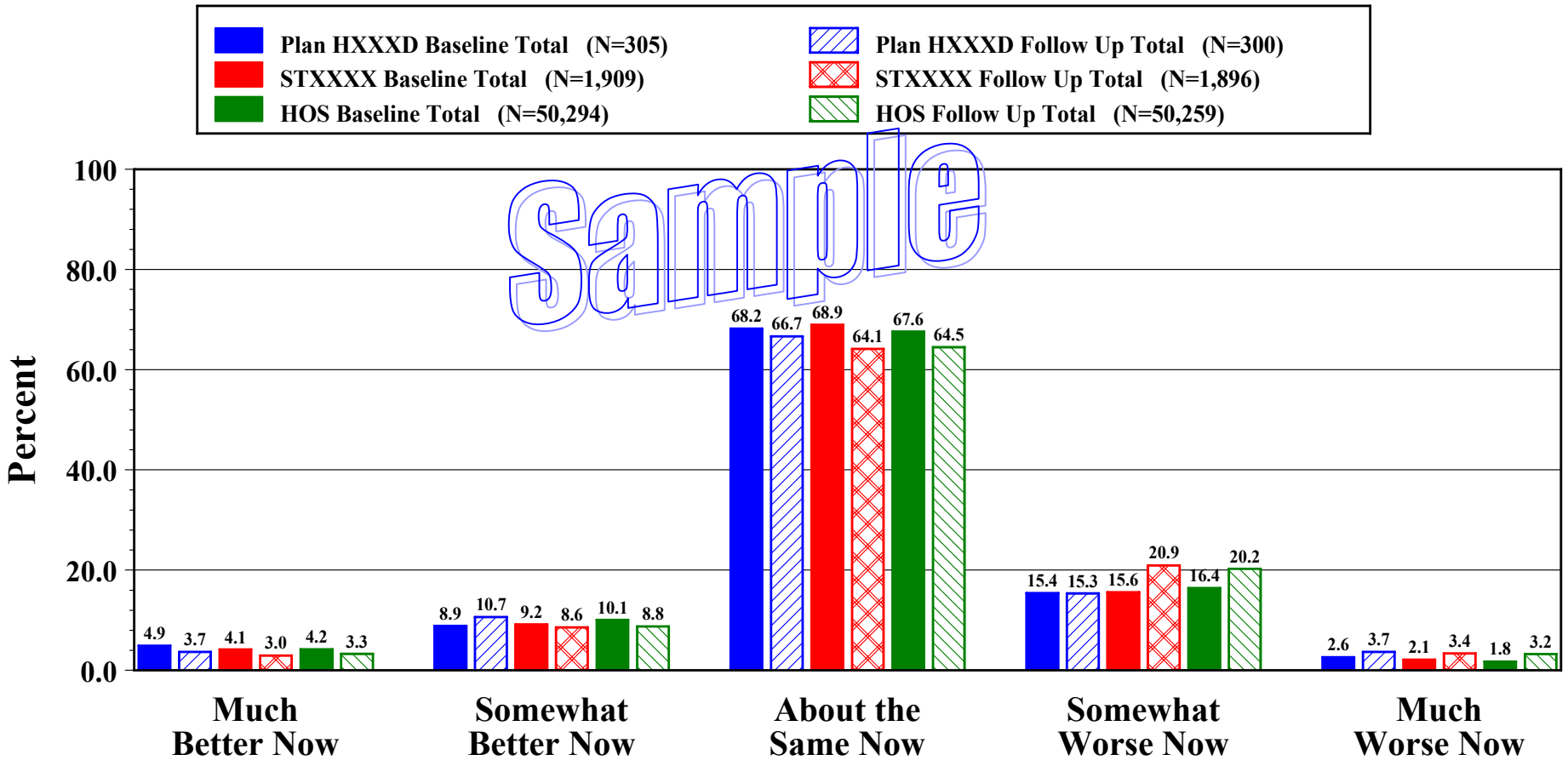
Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Demographics were taken from Cohort IV Baseline Data.
Percentages may not total 100% due to rounding.

Figure 9: General Health Question for Plan HXXXD, STXXXX Total, and HOS Total



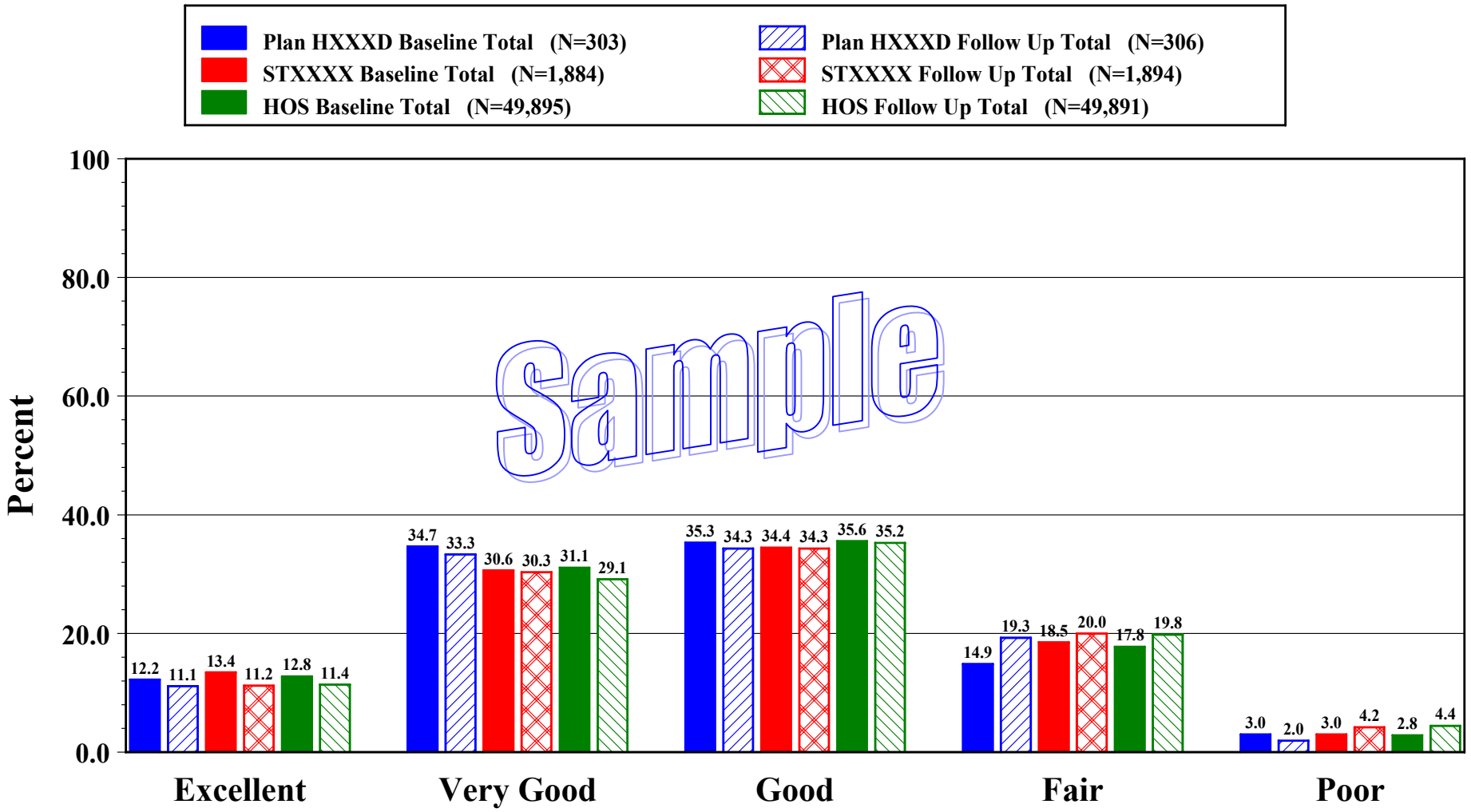
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #1: "In general, would you say your health is:"
Individuals responding "Fair" or "Poor" are known to be at increased risk for near future hospitilization (i.e., within 6 months), use of mental health services, and/or mortality in five years. (Ware JE, Kosinski M, Keller SD. SF-36 Physical and Mental Health Summary Scores: A User's Manual. Boston, MA: The Health Institute, 1994.)
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Percentages may not total 100% due to rounding.

Figure 10: Health Transition Question for Plan HXXXD, STXXXX Total, and HOS Total



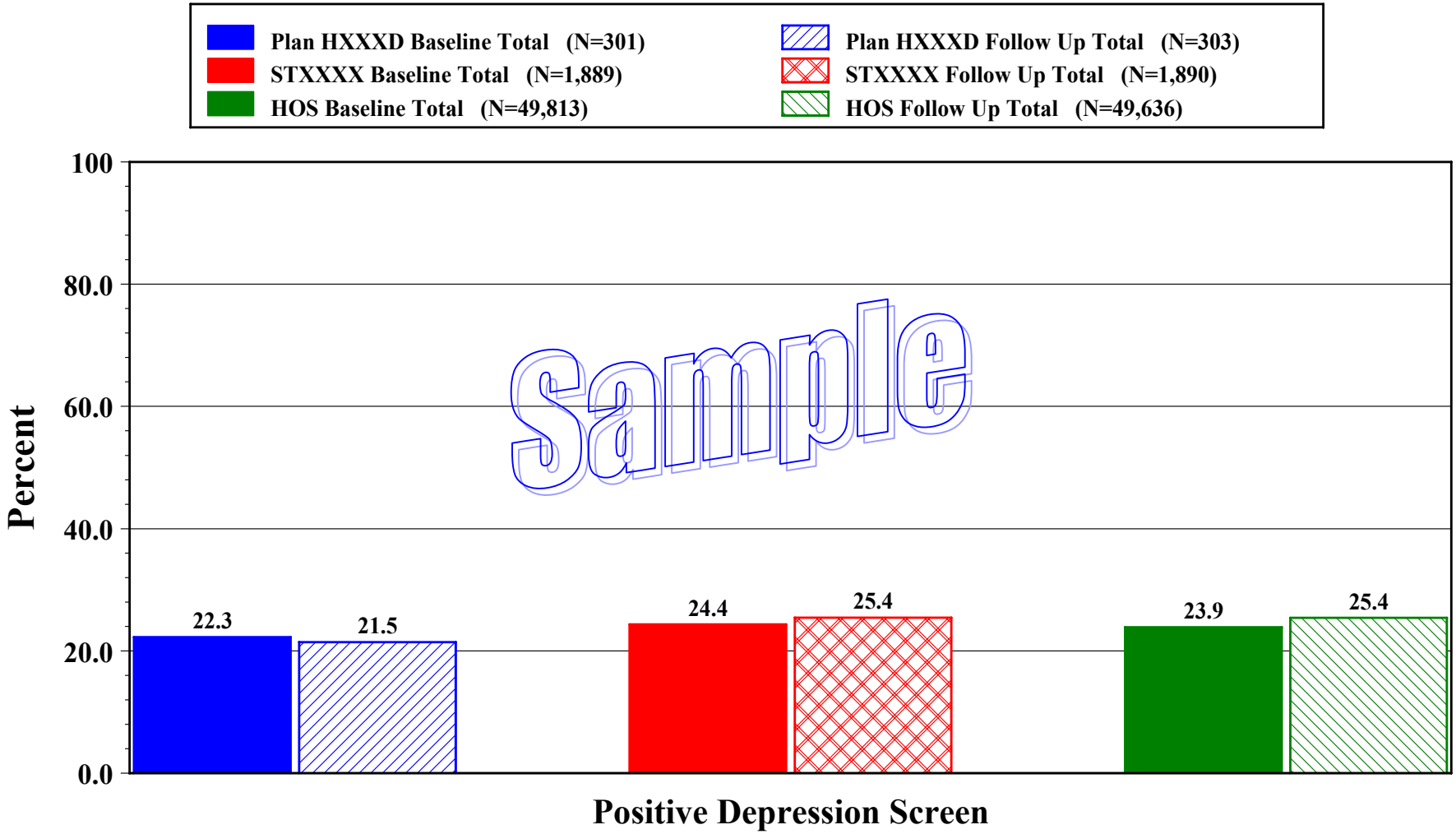
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #2: "Compared to one year ago, how would you rate your health in general now?"
Individuals responding "Somewhat Worse Now" or "Much Worse Now" are known to be at increased risk for near future hospitalization (i.e., within 6 months), use of mental health services, and/or mortality in five years. (Ware JE, Kosinski M, Keller SD. SF-36 Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: The Health Institute, 1994.)
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Percentages may not total 100% due to rounding.

Figure 11: Comparative Health Question for Plan HXXXD, STXXXX Total, and HOS Total



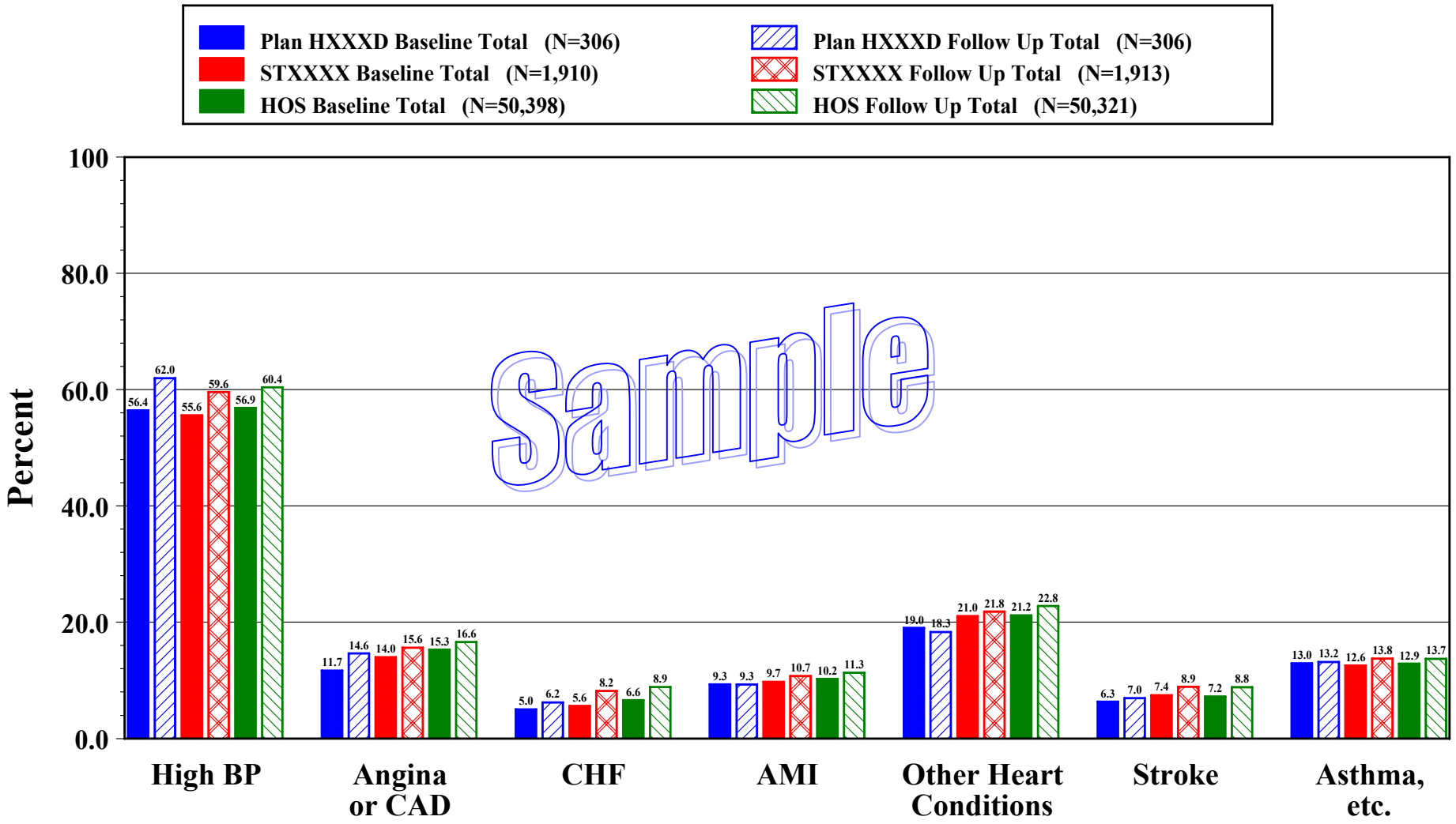
Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #42: "In general, compared to other people your age, would you say your health is:"
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores
at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Percentages may not total 100% due to rounding.

Figure 12: Percent with Positive Depression Screen for Plan HXXXD, STXXXX Total, and HOS Total



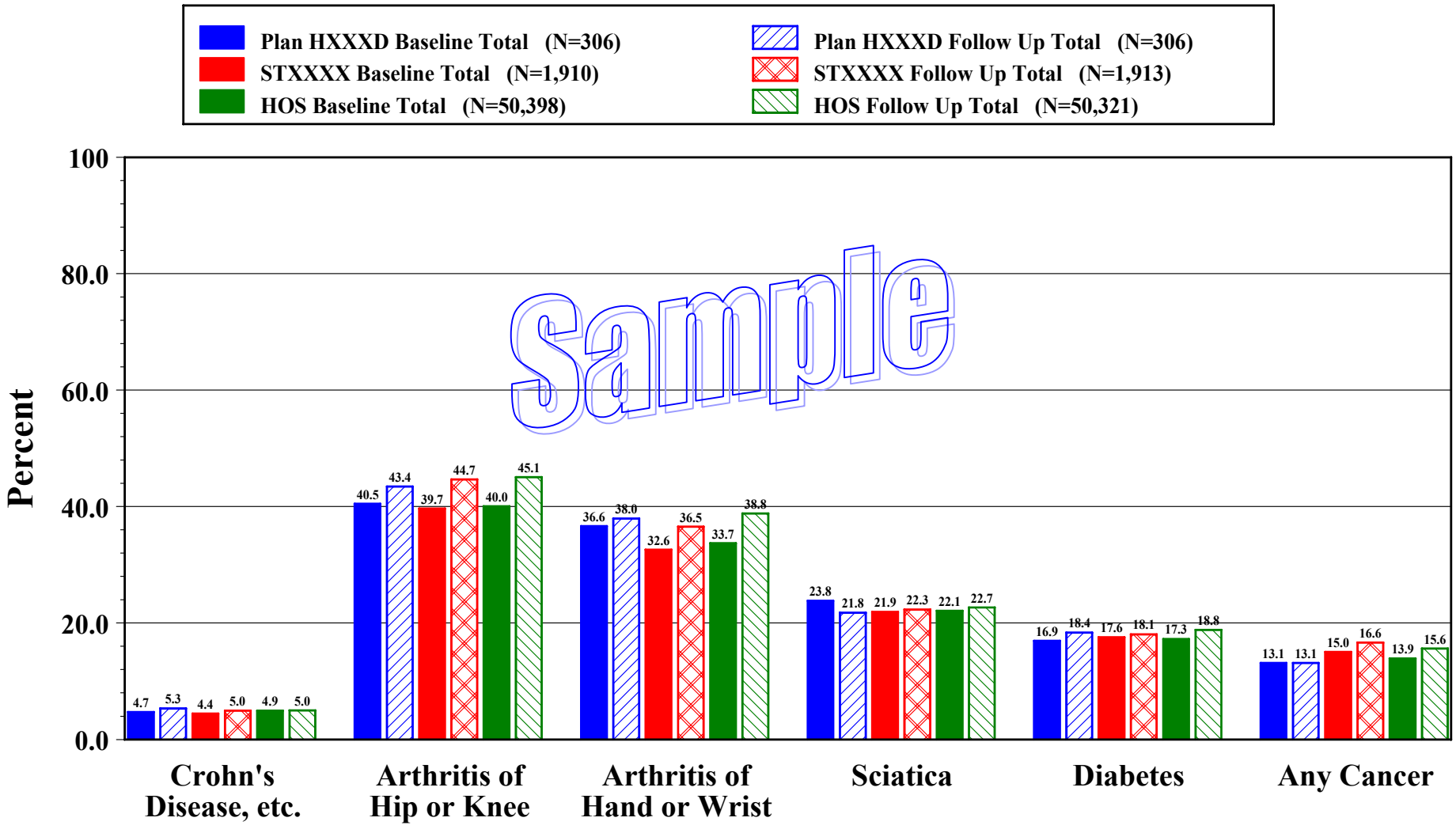
Data Source: Medicare Health Outcomes Survey Respondents
A beneficiary of the Medicare Health Outcomes Survey is considered to have a positive depression screen when he or she answers "Yes" to ANY of the three depression questions (numbers 39, 40, and 41).
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.

Figure 13: Percent Distribution of Chronic Medical Conditions for Plan HXXXD, STXXXX Total, and HOS Total



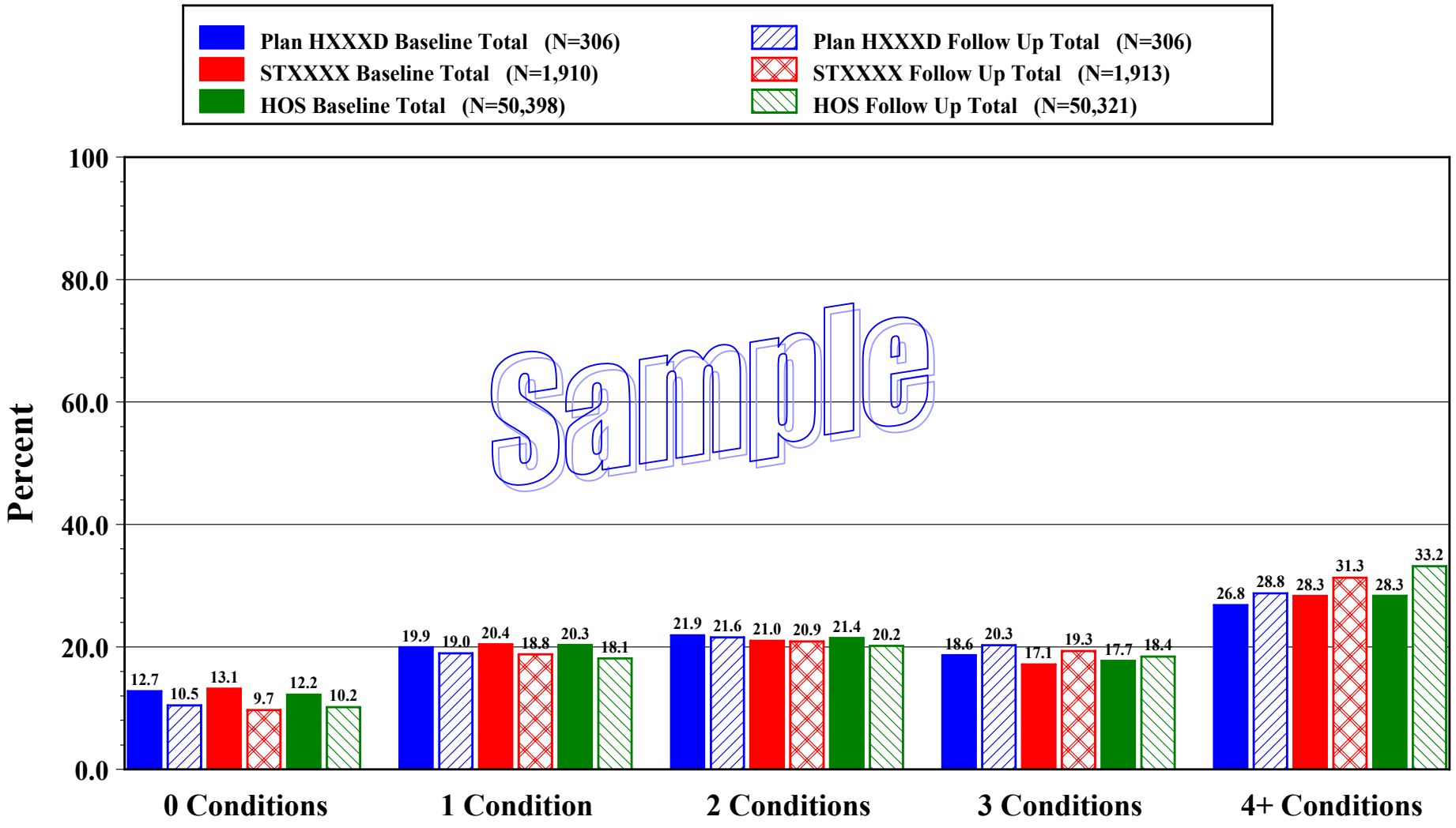
Data Source: Medicare Health Outcomes Survey Respondents
Asthma, etc. includes: asthma, emphysema, and COPD (Chronic Obstructive Pulmonary Disease).
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.

Figure 14: Percent Distribution of Chronic Medical Conditions (Continued) for Plan HXXXD, STXXXX Total, and HOS Total



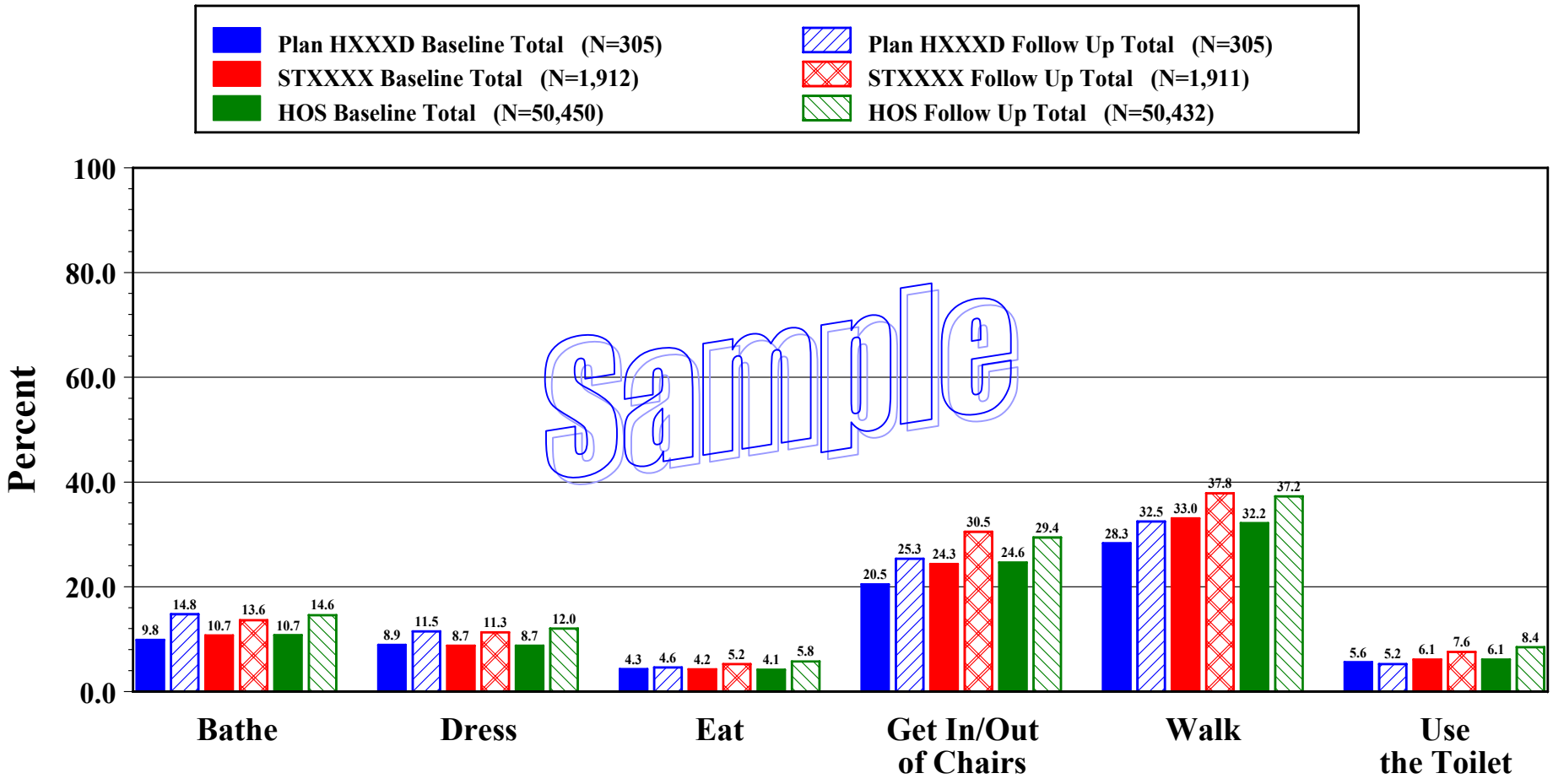
Data Source: Medicare Health Outcomes Survey Respondents
Crohn's Disease, etc. includes: Crohn's Disease, ulcerative colitis, and inflammatory bowel disease.
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.

Figure 15: Frequency of Chronic Medical Conditions for Plan HXXXD, STXXXX Total, and HOS Total



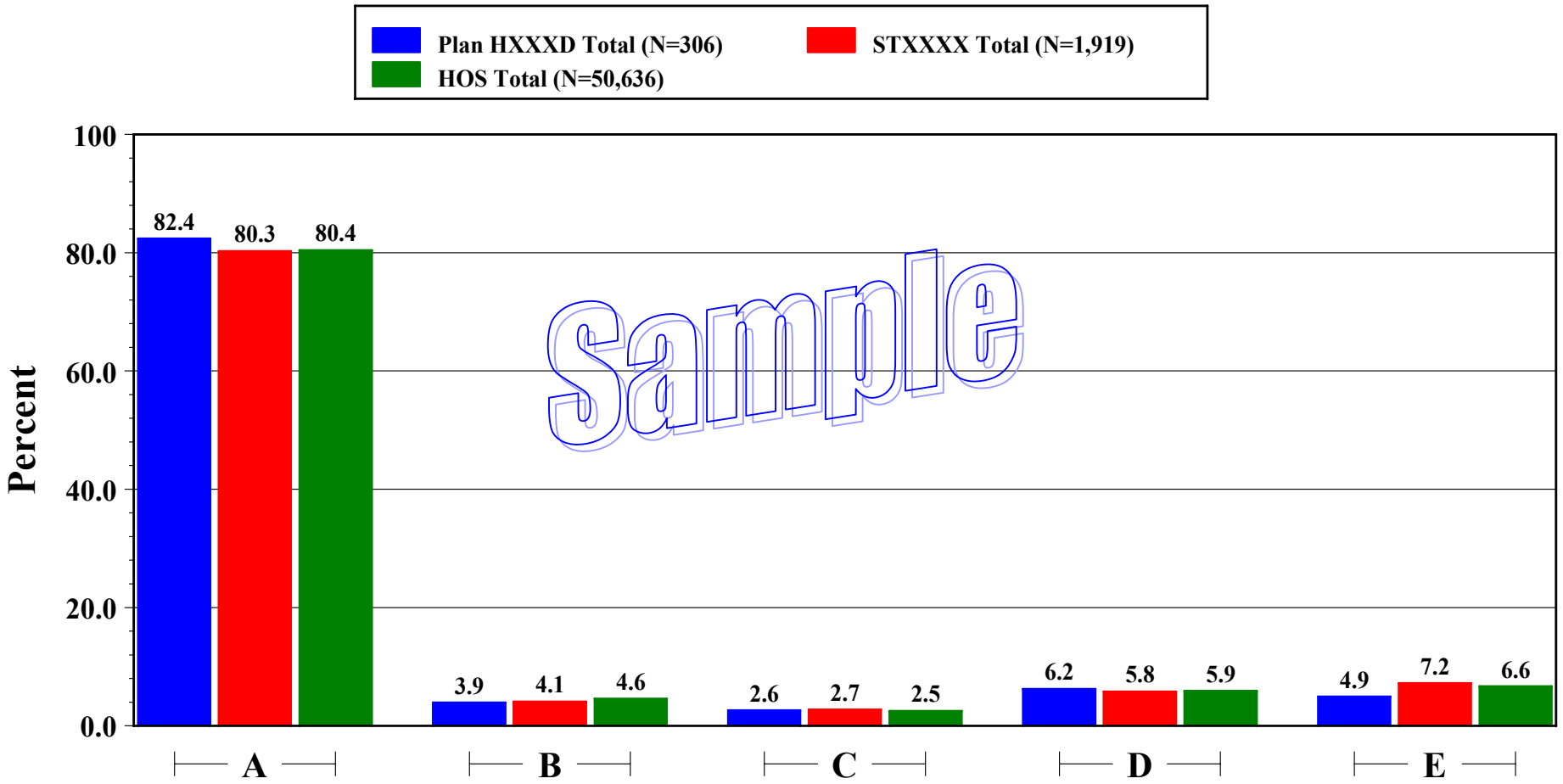
Data Source: Medicare Health Outcomes Survey Respondents
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.
Percentages may not total 100% due to rounding.

Figure 16: Percent Distribution of Impairment in Activities of Daily Living* for Plan HXXXD, STXXXX Total, and HOS Total



Data Source: Medicare Health Outcomes Survey Respondents
Responses to question #12: "Because of a health or physical problem, do you have any difficulty doing the following activities?"
Responses reporting difficulty or inability to do the activity were categorized as "Impaired."
*Adapted from: Adler GS. A Profile of the Medicare Current Beneficiary Survey.
Health Care Financing Review, Vol. 15, No. 4 (Summer 1994): 153-163.
Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores
at Baseline and at Follow Up, and were enrolled in a participating managed care plan.

Figure 17: Person Responding to Survey for Plan HXXXD, STXXXX Total, and HOS Total



Data Source: Medicare Health Outcomes Survey Respondents

A=Beneficiary completed survey at Baseline and Follow Up, B=Beneficiary completed survey at Baseline and Proxy completed survey at Follow Up, C=Proxy completed survey at Baseline and Beneficiary completed survey at Follow Up, D=Proxy completed survey at Baseline and Follow Up, E=Unable to determine who completed survey at Baseline and/or Follow Up

Sample is limited to eligible beneficiaries who are 65 or older, had PCS and MCS scores at Baseline and at Follow Up, and were enrolled in a participating managed care plan.

Percentages may not total 100% due to rounding.