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2016 Medicare Health Outcomes Survey-Modified Report

Medicare Health Outcomes Survey

Centers for Medicare & Medicaid Services

Health Services Advisory Group

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

CENTER FOR MEDICARE

May 2017

PACE organizations,

The Centers for Medicare & Medicaid Services (CMS) is pleased to provide you with your Organization's results from the 2016 Medicare Health Outcomes Survey-Modified (HOS-M). The HOS-M, which is an abbreviated version of the Medicare Health Outcomes Survey (HOS), assesses the physical and mental health functioning of enrollees in Program of All-Inclusive Care for the Elderly (PACE) organizations to generate information for payment adjustment.

The HOS-M Report focuses on specialized plans serving frail and elderly beneficiaries, summarizes demographic information, physical and mental health status, and selected health status measures. Additionally, in each respective plan report, the health status indicators of the plan's beneficiaries are compared to the combined Medicare HOS-M sample averages (HOS-M Total).

CMS encourages participating PACE organizations to examine their results for use in quality improvement activities. You may submit inquiries to hos@HCQIS.org, or contact Health Services Advisory Group through the HOS Information and Technical Support telephone line at (888) 880-0077, and you may visit the CMS HOS website at https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HOS/index.html for more program information.

Sincerely,

Elizabeth Goldstein, PhD
Director
Division of Consumer Assessment & Plan Performance

Medicare Health Outcomes Survey-Modified
Sample Plan Report

The following is a sample version of the 2016 Health Outcomes Survey-Modified (HOS-M) Report made available to all PACE Organizations participating in the 2016 Medicare HOS-Modified Survey.

The figures, tables, and text in this document contain example plan-level data; however, all references to the *HOS-M Total* reflect actual aggregate-level data for all PACE Organizations.

The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), as well as the HOS email address (*hos@HCQIS.org*), are available to provide assistance with report questions and interpretation. A full description of the HOS program may be found at *http://www.HOSonline.org*.

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Executive Summary

Originally entitled the PACE Health Survey, the Medicare Health Outcomes Survey-Modified (HOS-M) is administered to frail and elderly Medicare beneficiaries who are at greatest risk for poor health outcomes.[1] These beneficiaries are enrolled in Program of All-Inclusive Care for the Elderly (PACE) organizations.[2,3]

A study comparing beneficiaries in the PACE program and Special Needs Plans (SNPs) with beneficiaries in other Medicare Advantage (MA) health plans found significant differences in health status.[4] The study used the Medicare Health Outcomes Survey (HOS) *2010 Cohort 13 Baseline* data on SNPs and other traditional MA plans, and the 2010 HOS-M data on PACE. This report indicated that specialized PACE and SNP plans report lower levels of physical and mental health than other MA plans and the findings were consistent with those from previous years.[5] Mean physical and mental health scores for specified, at-risk beneficiaries reporting urinary incontinence, depressed mood, obesity, and proxy response were lowest for PACE plans, followed by SNPs, and were highest for other MA plans.

The main goal of the HOS-M is to assess the frailty of this population so that the Centers for Medicare & Medicaid Services (CMS) can appropriately adjust Medicare payments to the PACE organizations.

2016 HOS-M Sample

For the 2016 HOS-M, all eligible beneficiaries in plans with fewer than 1,200 eligible beneficiaries were surveyed. For larger plans having 1,200 or more eligible beneficiaries, a random sample of 1,200 was selected. The combined total sample for the 2016 HOS-M included 27,289 beneficiaries from 106 PACE organizations. This marked an increase from the 24,665 beneficiaries included in the 2015 HOS-M. Initial sample eligibility is based on community-residing beneficiaries who do not have end-stage renal disease (ESRD) and are age 55 or older. After excluding an additional 2,611 ineligible beneficiaries, the *2016 HOS-M eligible sample* was 24,678. For details on sampling eligibility, see Appendix 1. Of the 24,678 beneficiaries in the eligible sample, 14,891 completed the survey, which is a response rate of 60.3%. These 14,891 beneficiaries comprise the *2016 HOS-M analytic sample.* The mean age of the respondents in the analytic sample was 77.6 years; 70.9% were female; 62.3% were White; and proxy respondents filled out 53.9% of the surveys.

Trends in Health Status Measures for PACE HXXXA

The primary health status measures for the HOS-M are the physical component summary (PCS) and mental component summary (MCS) scores. Algorithms based on norms established in 1990 are used to score PCS and MCS. These algorithms yield favorably scored (i.e., higher is better) measures with a mean of 50 and a standard deviation of 10 in the general U.S. population. In general, functional health status as measured by the PCS score, is expected to decline in older age groups, while mental health status, as measured by the MCS score, declines at a slower rate.[6]

Table 1 shows the trends in mean unadjusted PCS and MCS scores and the corresponding standard deviations (SD) over the current and previous two years, where available for your PACE organization. The direction of these trends reflects the overall physical and mental health status of your plan beneficiaries across time. Though the demographics of your beneficiaries may change over time, negative trends are associated with poorer health status as indicated by responses across those questions comprising the PCS and MCS scores. Additional information about the summary scores is available in the 2016 HOS-M Results section and Appendix 1.

Table 1: Trends in Mean Unadjusted PCS and MCS Scores over Three Years for PACE HXXXA

Years	Unadjusted PCS Score Mean (SD)	Unadjusted MCS Score Mean (SD)
2016 HOS-M	27.4 (10.2)	43.3 (13.3)
2015 HOS-M	28.2 (10.0)	43.9 (13.7)
2014 HOS-M	29.5 (10.5)	43.2 (14.1)

NA in a row indicates that the plan did not have results for the HOS-M year.

Trends in Activity of Daily Living (ADL) Results for PACE HXXXA

The table below shows the distribution of beneficiaries with ADL impairments over the current and previous two years, where available for your PACE organization. The direction of these trends reflects the overall physical functioning of your plan's respondents across time. Additional information about the ADL results is available in the 2016 HOS-M Results section.

Table 2: Trends in ADL Impairments* Over Three Years for PACE HXXXA

Years	Bathing N (%)	Dressing N (%)	Eating N (%)	Chair Transfer N (%)	Walking N (%)	Toilet Use N (%)
2016 HOS-M	442 (66.3%)	366 (55.0%)	137 (20.6%)	413 (62.1%)	516 (77.2%)	292 (43.7%)
2015 HOS-M	348 (65.4%)	279 (52.4%)	106 (19.9%)	330 (61.7%)	420 (79.8%)	230 (42.8%)
2014 HOS-M	329 (56.1%)	260 (43.8%)	118 (20.1%)	333 (56.3%)	448 (76.5%)	226 (38.3%)

* Beneficiaries responding "*Yes, I have difficulty*" or "*I am unable to do this activity*" are considered to have ADL Impairment.
NA in a row indicates that the plan did not have results for the HOS-M year.

Program Highlights

The Program Highlights section summarizes the Medicare Health Outcomes Survey-Modified (HOS-M) program and provides resources to help Program of All-Inclusive Care for the Elderly (PACE) organizations use their HOS-M reports and data. The section also provides information about new website content, webinars, and program updates. For further assistance, please refer to the Technical Assistance information below.

Technical Assistance

The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), and email address hos@HCQIS.org, are available to provide assistance with report questions and interpretation. Additionally, the CMS HOS website provides general information on the program (http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HOS/index.html). A full description of the program is available at http://www.HOSonline.org, and the Medicare HOS glossary consisting of definitions relevant to the HOS and HOS-M may be accessed from the links at the bottom of site webpages.

Medicare Health Outcomes Survey-Modified

The Medicare HOS-M was fielded for the first time in 2002 as the PACE Health Survey, and was renamed in 2005 as the HOS-M. It is a modified version of the Medicare Health Outcomes Survey (HOS). The HOS-M is administered annually by the Centers for Medicare & Medicaid Services (CMS) to frail elderly and predominantly dual-eligible beneficiaries (i.e., recipients of both Medicare and Medicaid) in PACE organizations, for the purpose of adjusting plan payments based on the frailty of their beneficiaries. Together, the HOS and the HOS-M are the first patient-reported outcomes measures in Medicare managed care, and therefore are a critical part of assessing health plan quality.

Similar to the HOS, the HOS-M design uses a sample of beneficiaries from each participating PACE organization. Unlike the HOS, the HOS-M is a cross-sectional survey that measures the physical and mental health functioning of the sample at a single point in time without a follow-up.

The HOS-M instrument contains Activity of Daily Living (ADL) items as the core items used to calculate the frailty adjustment factor.[7] The HOS-M instrument also contains the Veterans RAND 12-Item Health Survey (VR-12)[A] to further assess the physical and mental health functioning of the beneficiaries in PACE organizations.[8,9] A copy of the 2016 HOS-M questionnaire may be downloaded from the "Survey" page and the sample report may be downloaded from the "HOS-Modified" page of the HOS website at http://www.HOSonline.org. Additional information about the HOS program, sampling methodology, and HOS-M instrument is available in Appendix 1.

[A] Please note, the VR-12 questions are also included in the HOS and are used to calculate the CMS Medicare Star Ratings. HOS-M survey results are not used to calculate Medicare Star Ratings.

Semi-annual HOS Newsletters

The HOS Newsletters contain information about HOS products, services, and timelines; program updates; self-paced training programs; and other relevant topics, such as sharing of best practices. HOS Newsletters are circulated semi-annually, in winter and summer, to plan contacts and users of the HOS technical support via email, and are posted on the HOS website. If you would like to receive the HOS Newsletters, contact the HOS Information and Technical Support team at hos@HCQIS.org.

CMS Approved Survey Vendors

The "Survey Vendors" section on the "Program" page of the HOS website provides a list of CMS approved survey vendors. A single survey vendor administers the HOS-M, while several survey vendors administer the HOS.

Frequently Asked Questions (FAQs)

The "FAQs" link at the bottom of site webpages (http://www.HOSonline.org) provides answers to frequently asked questions about the Medicare HOS and HOS-M. Examples are questions about where to find the current survey administration documents and HOS questionnaires, how MAOs may obtain their reports and data, and where to find quality improvement ideas. Information is also provided about the types of files available for researchers and how to obtain those files.

Self-Paced Training Webinars

A series of self-paced training webinars are available on the HOS website. The webinars are approximately 30 minutes in length and may be accessed at any time at the convenience of the user. To access the webinars, go to the "Trainings" section under the "Resources" page on the HOS website.

- **Introduction to the Medicare Health Outcomes Survey (HOS):** a basic training session appropriate for MAOs that are new to the HOS and HOS-M or those wanting to obtain an overview of the HOS. In addition, the introductory training program provides some practical guidance about how to obtain HOS reports and data.
- **Getting the Most from Your Medicare Health Outcomes Survey (HOS) Baseline Report:** an intermediate training session that builds on the information from the basic tutorial described above. The session discusses maximizing use of the HOS report to provide information on the health of beneficiaries and incorporating chronic care improvement programs (CCIPs). Many of the concepts covered are applicable to HOS-M reports as well.

Resources for Best Practices

A resource guide entitled "Opportunities for Improving Medicare HOS Results through Practices in Quality Preventive Health Care for the Elderly" is available from the HOS website at http://www.hosonline.org/globalassets/hos-online/faqs/opportunities_for_improving_medicare_hos_results_2012.pdf.[10] This guide helps Medicare Advantage Organizations (MAOs) and PACE organizations develop and apply strategies that address items in the HOS and HOS-M questionnaires. It discusses the prevalence of conditions measured by the HOS items and summarizes national HOS results to highlight opportunities for improvement and intervention strategies. The guide also provides examples of interventions that some MAOs have used to promote patient/physician communication, screening services, or maintenance of functional status among their beneficiaries.

A companion literature review entitled "Functional Status in Older Adults: Intervention Strategies for Impacting Patient Outcomes" is also available on the HOS website at http://www.hosonline.org/globalassets/hos-online/publications/functional_status_in_older_adults_2011.pdf.[11] This literature review synthesizes selected articles about functional status outcomes in older adults and supplements the resource guide. The articles include outcomes that target assessments of physical and psychological health using well-established questionnaires. In addition, outcome measures include ADLs that capture functional limitations of MA beneficiaries. The articles were selected because they describe interventions that could impact functional status outcomes in elderly populations.

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

Information about the VR-36, VR-12, and VR-6D instruments is available on the Boston University School of Public Health website. The website offers details on the development, applications, and references for the VR-12, which is the core health outcomes measure in the Medicare HOS and HOS-M. For information about the instruments and to request permission to use the documentation and scoring algorithms, go to**:** http://www.bu.edu/sph/research/research-landing-page/vr-36-vr-12-and-vr-6d/.

HOS-M Reports and Data Distribution

Distribution of HOS-M reports occurs electronically to participating PACE organizations through the CMS Health Plan Management System (HPMS). Plans are alerted of report and data availability through HPMS. Please contact CMS via email at hpms_access@cms.hhs.gov for assistance with HPMS access. Once data is available, a plan may contact the Medicare HOS Information and Technical Support email at hos@HCQIS.org to request their data and data users guide. The "HOS-Modified" page on the HOS website has timelines and other useful information about report and data distribution.

2016 HOS-M Results

This report presents the 2016 Medicare HOS-M results for PACE HXXXA and the HOS-M Total, which represents the aggregated results for all participating PACE organizations. Percentages in tables and graphs may not add to 100% due to rounding. *Please be advised that the information in this report is not suitable for contract level comparisons. Therefore, these data should not be used for public release or marketing purposes.*

Response Rates and Distribution of the Sample

The 2016 HOS-M included a sample of 27,289 beneficiaries, including both aged and disabled beneficiaries, from 106 specialized PACE organizations. Of the 27,289 sampled, 2,611 were determined to be ineligible during the survey administration. Ineligible beneficiaries met one of the following criteria: deceased; not enrolled in the health plan; had an incorrect address and phone number; had a language barrier; or were removed from the sample due to death, institutionalization, or disenrollment after the sample was drawn. Removing the ineligible beneficiaries from the total sample yielded the *2016 HOS-M eligible sample* of 24,678.

Of the 24,678 beneficiaries in the eligible sample, 14,891 completed the survey, which is a response rate of 60.3%. These 14,891 beneficiaries comprise the *2016 HOS-M analytic sample.* For the purposes of this report, a completed survey was defined as one that could be used to calculate a PCS or MCS score.

Note that the definition of a completed survey, and hence the response rates, are calculated differently for frailty adjusted payments. For frailty adjustment purposes, a survey is defined as complete if all six ADL items are answered. Response rates and ADL distributions considered for payment purposes are reported separately in the CMS Health Plan Management System (HPMS).

For the analytic sample in 106 PACE organizations, the average number of respondents per organization was 140, with a minimum of 32 and a maximum of 688 respondents. The middle fifty percent of the organizations had between 69 and 154 respondents. Ten percent of the organizations had 295 or more respondents and ten percent had 45 or fewer respondents. Organizations with a small number of respondents should exercise **caution** when drawing conclusions from the results as the sample size may be insufficient to allow meaningful interpretation.

Table 3 on the following page illustrates the distribution of the sample and the response rates for the HOS-M Total and your PACE organization. All analyses in this report use the HOS-M Total analytic sample. The denominator for percentages reported in the tables and figures is the number of non-missing responses for each measure. Note that due to missing data for the measured item (or question), a denominator may be less than the 14,891 respondents in the analytic sample. For more information on the HOS-M sampling, refer to Appendix 1.

Table 3: 2016 HOS-M Response Rates for PACE HXXXA and HOS-M Total

Sample	Sample Size[a] N	Ineligible[b] N	Eligible Sample N	Non-respondents N	Analytic Sample[c] N	Response Rate[d] %
HOS-M Total	27,289	2,611	24,678	9,787	14,891	60.3%
HXXXA	1,255	168	1,087	406	681	62.6%

[a] Beneficiaries are sampled for the HOS-M if they are enrolled in participating PACE plans, reside in the community, do not have End Stage Renal Disease (ESRD), and are age 55 or older.
[b] Ineligible includes deceased, not enrolled in health plan, incorrect address and phone number, language barrier, or removed from sample due to death, institutionalization, or disenrollment after the sample is drawn.
[c] Analytic sample includes respondents for whom PCS or MCS scores can be calculated. This definition is different from that used in frailty adjustment calculations in which a survey is defined as complete if all six ADL items are answered.
[d] Response Rate = [(Analytic Sample/Eligible Sample) x 100%].

Demographic Characteristics of the Sample

Table 4 presents the distribution of survey respondents by demographic characteristics for your PACE organization and the Medicare HOS-M Total. The largest percentages of the HOS-M Total respondents within each demographic category were: age 85 or older; female; and White.

Table 4: 2016 HOS-M Demographics for PACE HXXXA and HOS-M Total

Demographic	Plan HXXXA N (%)	HOS-M Total N (%)
Age	(N=681)	(N=14,891)
55-64	62 (9.1%)	1,466 (9.8%)
65-69	106 (15.6%)	2,276 (15.3%)
70-74	79 (11.6%)	2,248 (15.1%)
75-79	102 (15.0%)	2,293 (15.4%)
80-84	85 (12.5%)	2,391 (16.1%)
85+	247 (36.3%)	4,217 (28.3%)
Gender	(N=681)	(N=14,891)
Male	130 (19.1%)	4,330 (29.1%)
Female	551 (80.9%)	10,561 (70.9%)
Race	(N=681)	(N=14,891)
White	281 (41.3%)	9,282 (62.3%)
Black	370 (54.3%)	3,294 (22.1%)
Asian	6 (0.9%)	754 (5.1%)
Hispanic	20 (2.9%)	1,142 (7.7%)
Other/unknown	4 (0.6%)	419 (2.8%)

Physical (PCS) and Mental (MCS) Component Summary Scores

Definition of Measures

- The core outcome measures for the HOS-M are the PCS and MCS scores. These scores are calculated from the VR-12 (Questions 1 and 6-11 of the 2016 HOS-M), which asks respondents about their usual activities and how they would rate their health. PCS and MCS scores are scaled from 0 to 100, and higher scores reflect better health status.

The PCS score is a reliable and valid measure of physical health. For the PCS, very high scores indicate no physical limitations, disabilities, or decline in well-being; a high energy level; and a rating of health as "excellent."

The MCS score is a reliable and valid measure of mental health. For the MCS, very high scores indicate frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems. The MCS may also be used as a screening tool for depression risk. Previous research suggested that individuals from a sample of the 1998 U.S. general population who had an MCS score of 42 or below were at increased risk for depression.[6] However, more recent results suggest an MCS score of 48 or below is a reasonably predictive cut-off for depression risk in the elderly Medicare population.[12]

Figure 1 below presents the mean PCS and MCS scores for your PACE organization and the HOS-M Total.

Figure 1: 2016 HOS-M Mean PCS and MCS Scores for PACE HXXXA and HOS-M Total

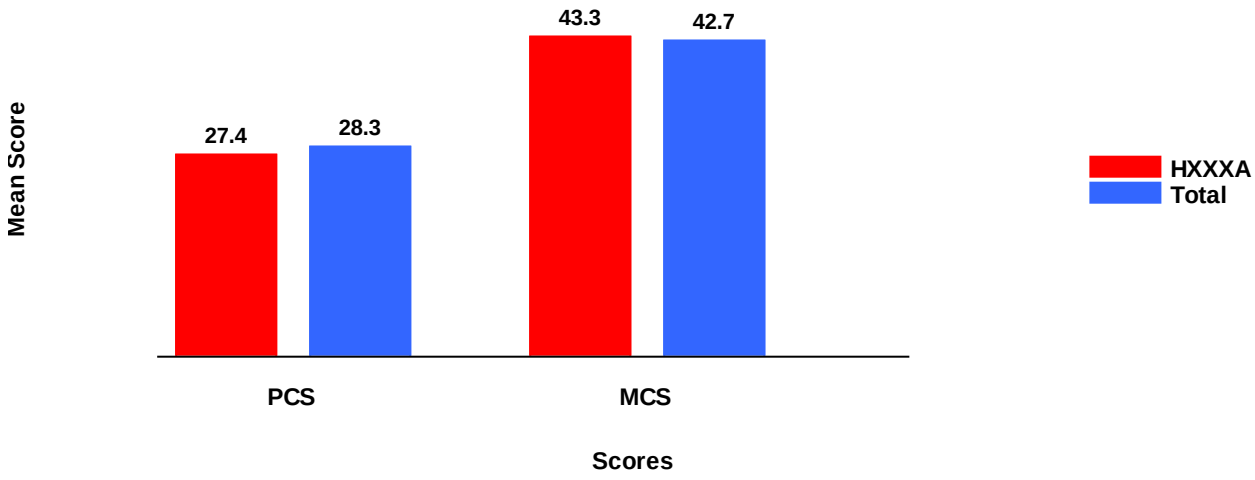


Table 5 on the following page depicts the mean PCS and MCS scores by demographic characteristics. Please note that NA in the table indicates there is no information in the category and NC indicates that a SD could not be calculated.

Table 5: 2016 HOS-M Mean PCS and MCS Scores by Demographic Characteristics for PACE HXXXA and HOS-M Total

Demographic	Plan HXXXA		HOS-M Total	
	PCS Mean (SD)	MCS Mean (SD)	PCS Mean (SD)	MCS Mean (SD)
Age				
55-64	27.0 (10.1)	40.4 (15.5)	28.3 (11.0)	41.4 (14.0)
65-69	30.6 (11.4)	44.3 (13.2)	29.1 (10.7)	42.3 (13.5)
70-74	28.8 (10.3)	45.8 (13.0)	29.2 (10.5)	43.3 (13.4)
75-79	28.6 (10.3)	44.8 (12.2)	29.0 (10.8)	43.2 (13.5)
80-84	27.6 (10.0)	43.9 (12.9)	28.5 (10.7)	42.8 (13.4)
85+	25.2 (9.1)	42.1 (13.2)	26.8 (9.9)	42.7 (13.8)
Gender				
Male	31.3 (11.5)	43.7 (13.5)	30.2 (11.2)	43.2 (13.5)
Female	26.5 (9.6)	43.3 (13.2)	27.5 (10.1)	42.5 (13.6)
Race				
White	25.6 (9.5)	42.1 (13.5)	28.1 (10.6)	42.9 (13.7)
Black	28.8 (10.7)	44.8 (13.0)	28.5 (10.8)	44.0 (13.3)
Asian	30.0 (5.9)	44.2 (8.1)	28.9 (10.1)	41.6 (13.1)
Hispanic	26.1 (7.5)	35.9 (10.9)	28.8 (10.1)	39.3 (13.2)
Other/unknown	25.1 (4.4)	29.7 (11.2)	28.3 (10.5)	40.1 (13.2)

General Health and Comparative Health

Definition of Measures

- General self-rated health status is a measure of people's perception of their health using ratings of "Excellent," "Very good," "Good," "Fair," or "Poor."[13] General self-rated health status is a valid and reliable method for assessing health across different populations.[14] This measure is found in Question 1 of the HOS-M.

- Two measures of physical and mental health compared to one year ago use ratings of "Much better," "Slightly better," "About the same," "Slightly worse," or "Much worse." These measures are found in Questions 12 and 13.

Figures 2, 3, and 4 depict the distribution of responses with respect to three self-reported health items: the respondents' general health status; physical health compared to one year ago; and mental health compared to one year ago. Individuals who indicate that their general health was "Fair" or "Poor," or that their physical or mental health compared to one year ago was "Slightly worse" or "Much worse" are known to be at increased risk for near future hospitalization, use of mental health services, and/or mortality.[15,16]

Figure 2 on the next page displays the respondents' self-reported general health status for your PACE organization and the HOS-M Total. Note that a majority of the HOS-M Total respondents reported their general health was "Fair" or "Poor." This result reflects similar findings in a research study that compared health status and quality of care received by Medicare beneficiaries enrolled in specialized managed care plans, including PACE plans, to MA beneficiaries enrolled

in traditional models of care.[5] The 2008 and 2009 HOS-M, and the HOS *2008 Cohort 11 Baseline* and *2009 Cohort 12 Baseline* data were used for the analyses. Nearly two-thirds of HOS-M respondents in PACE plans reported self-rated general health of "Fair" or "Poor" when compared to less than one-third of MA beneficiaries in traditional models of care that reported in these categories. The study also highlights other areas where PACE respondents did more poorly compared to the other MA beneficiaries, such as having lower PCS and MCS scores, and having greater difficulty performing all ADLs.[5]

Figure 2: 2016 HOS-M General Health Status for PACE HXXXA and HOS-M Total

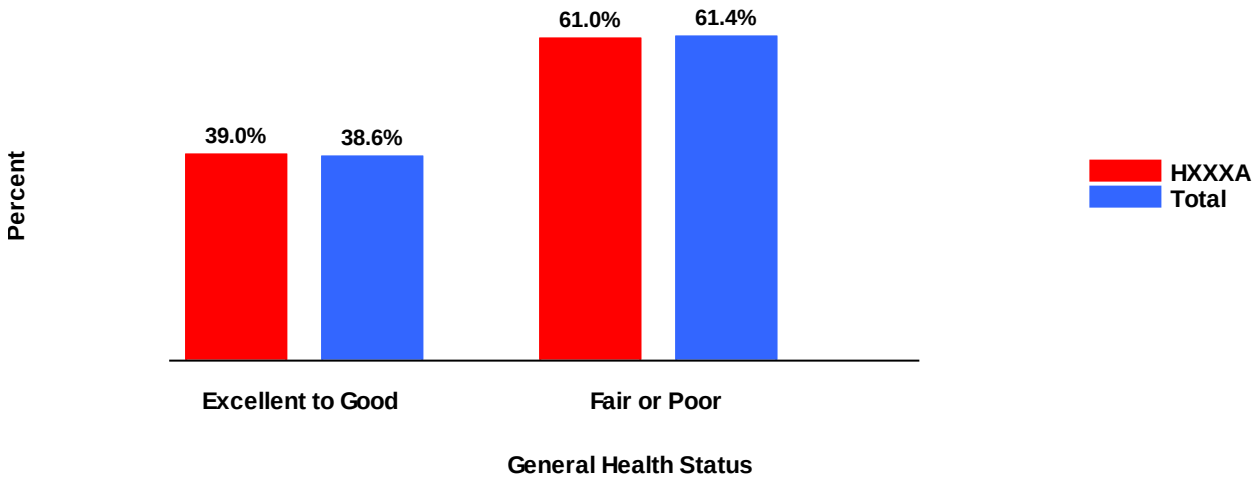


Figure 3 displays the respondents' self-reported physical health status as compared to one year ago for your PACE organization and the HOS-M Total.

Figure 3: 2016 HOS-M Physical Health Compared to One Year Ago for PACE HXXXA and HOS-M Total

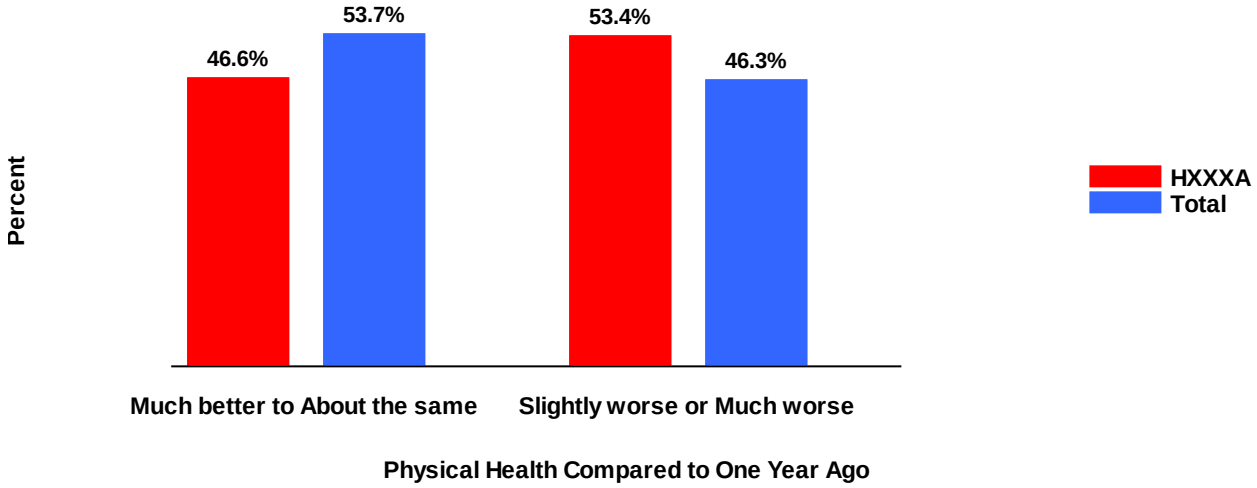


Figure 4 displays the respondents' self-reported mental health status as compared to one year ago for your PACE organization and the HOS-M Total. The results in Figure 3 and Figure 4 indicate that physical health deteriorates much faster than mental health for PACE beneficiaries.

Figure 4: 2016 HOS-M Mental Health Compared to One Year Ago for PACE HXXXA and HOS-M Total

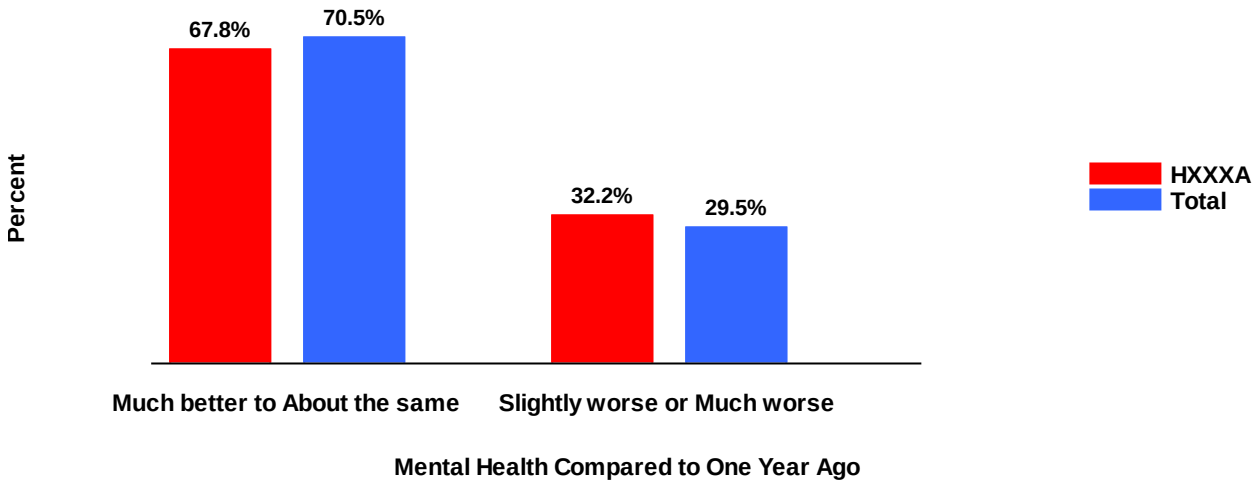


Figure 5 provides the mean PCS scores for your PACE organization and the HOS-M Total by respondents' self-reported general health status.

Figure 5: 2016 HOS-M Mean PCS Scores by General Health Status for PACE HXXXA and HOS-M Total

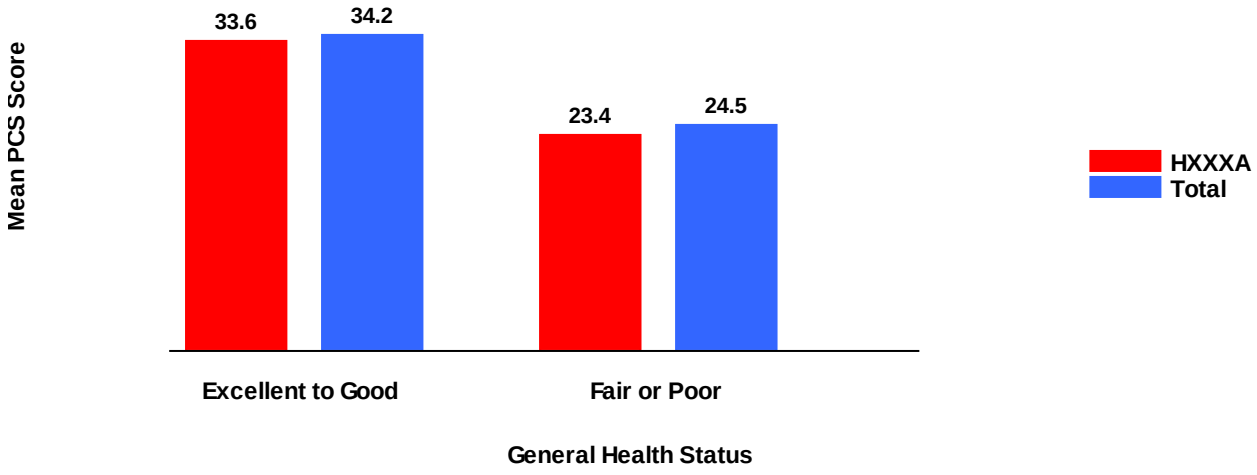
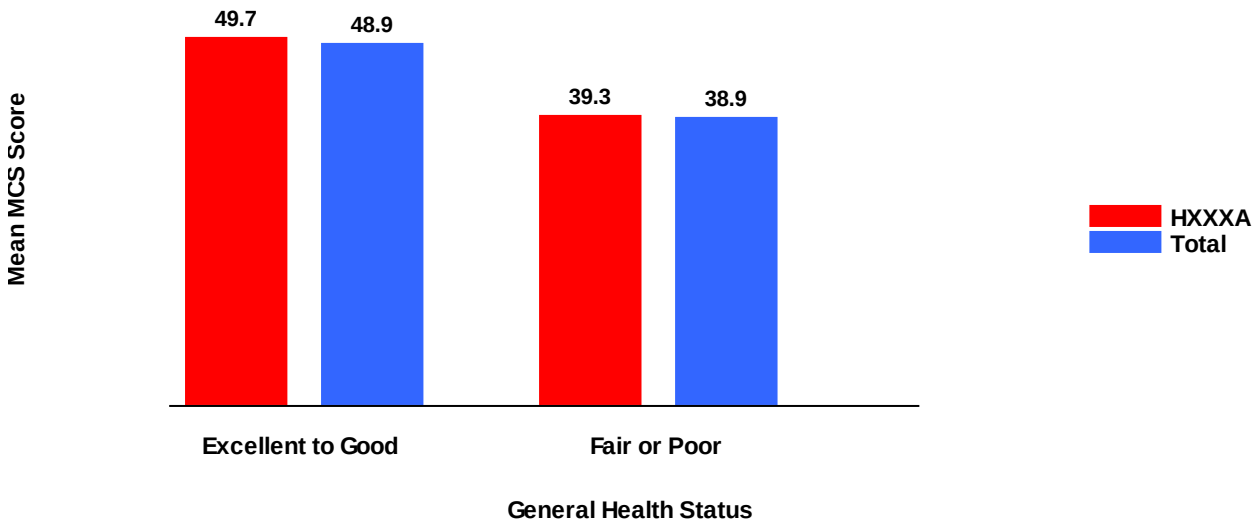


Figure 6 shows the mean MCS scores for your PACE organization and the HOS-M Total by respondents' general health status.

Figure 6: 2016 HOS-M Mean MCS Scores by General Health Status for PACE HXXXA and HOS-M Total



Activities of Daily Living

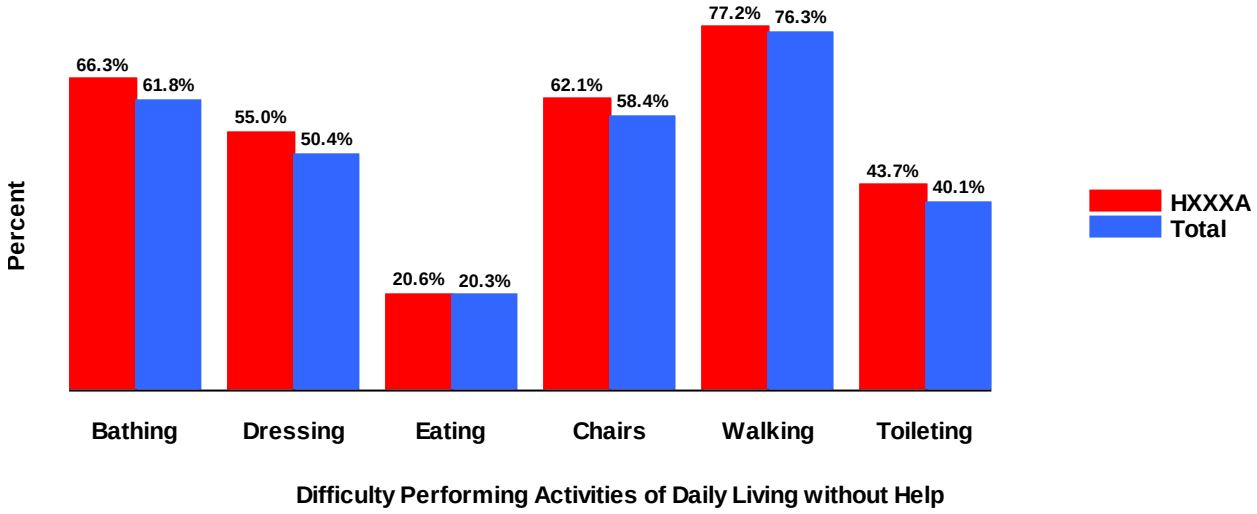
Definition of Measures

- ADLs refer to a set of common daily tasks that are necessary for personal self-care and independent living.[17] Six ADLs are included in the HOS-M to examine reported difficulty with personal care. The ADLs include bathing, dressing, eating, getting in or out of chairs, walking, and using the toilet. These measures are found in Question 4 in the HOS-M. For the HOS-M Report, ADL impairment is defined as beneficiaries reporting either difficulty or inability to perform an ADL.

The ability to perform these tasks is predictive of current disease status and mortality risk.[18,19] Therefore, regular assessment of functional status is recommended when measuring the effectiveness of care for older adults, and those living with dementia.[17]

Figure 7 on the following page shows the percentages of respondents who reported difficulty performing each of the ADLs without special equipment or help from another person. As previously described, these results include respondents for whom PCS or MCS scores could be calculated. The results in Figure 7 may differ from the frailty adjustment results reported on HPMS because of differences in the selection criteria for each analytic sample. The frailty results reported on HPMS include only respondents for whom all six ADL questions were answered.

Figure 7: 2016 HOS-M Difficulty Performing Activities of Daily Living without Help for PACE HXXXA and HOS-M Total



The HOS-M also asked whether respondents received help from another person in performing any of the six ADLs. Figure 8 shows the percentages of respondents who reported receiving help with each of the ADLs.

Figure 8: 2016 HOS-M Receiving Help from another Person to Perform Activities of Daily Living for PACE HXXXA and HOS-M Total

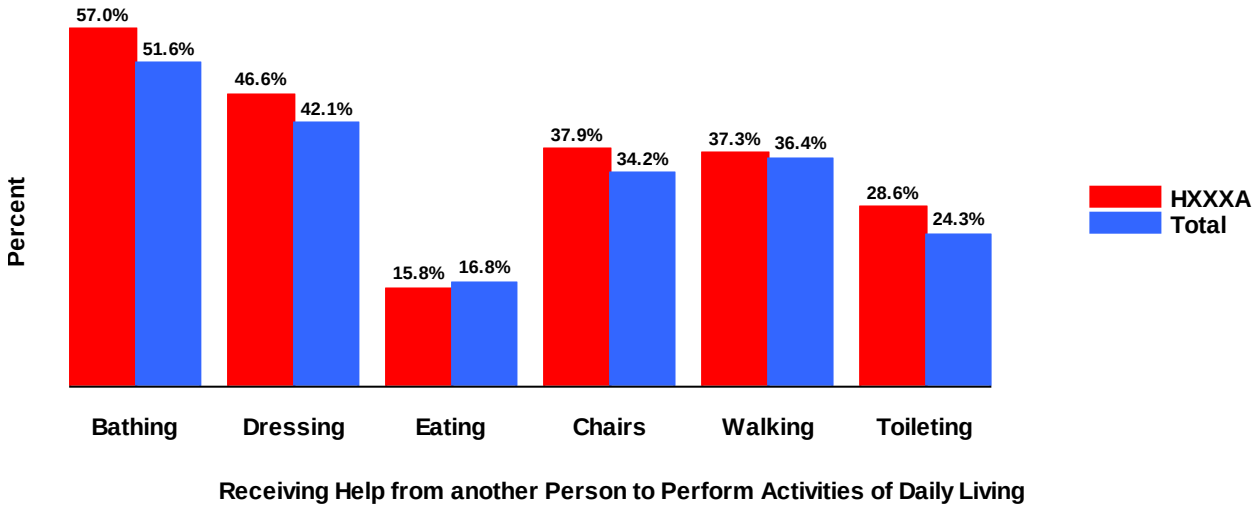


Figure 9 below shows the distribution of respondents with respect to the number of ADL impairments reported. For the HOS-M Total, the vast majority of beneficiaries reported impairment with one or more of their daily activities.

Figure 9: 2016 HOS-M Number of ADL Impairments for PACE HXXXA and HOS-M Total

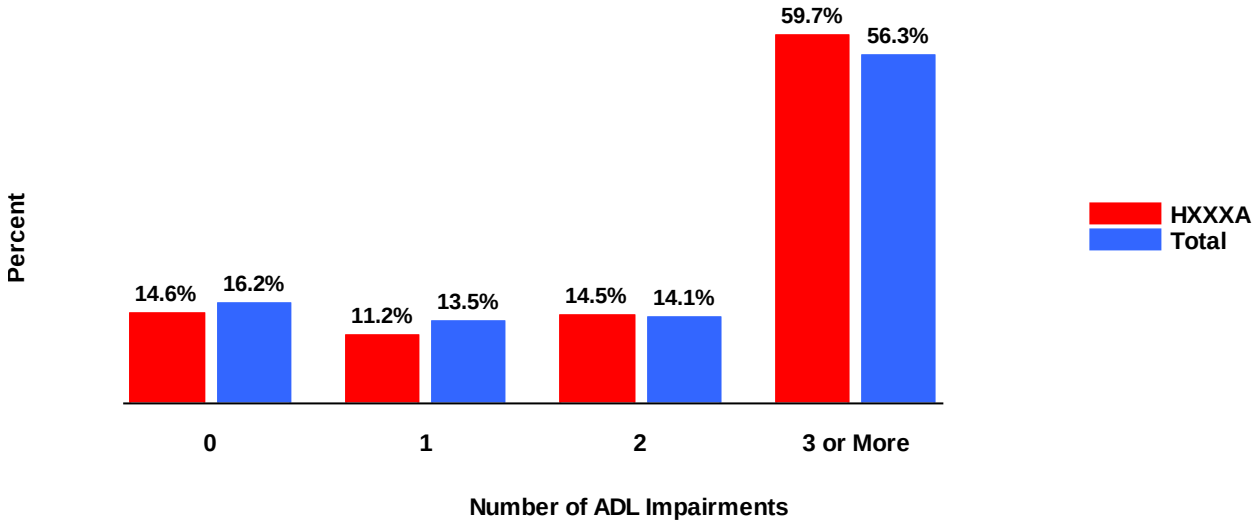


Figure 10 indicates that beneficiaries who have a greater number of ADL impairments tend to have lower PCS scores. There is an inverse linear relationship indicating that mean PCS decreases with increasing numbers of ADL limitations.

Figure 10: 2016 HOS-M Mean PCS Scores by Number of ADL Impairments for PACE HXXXA and HOS-M Total

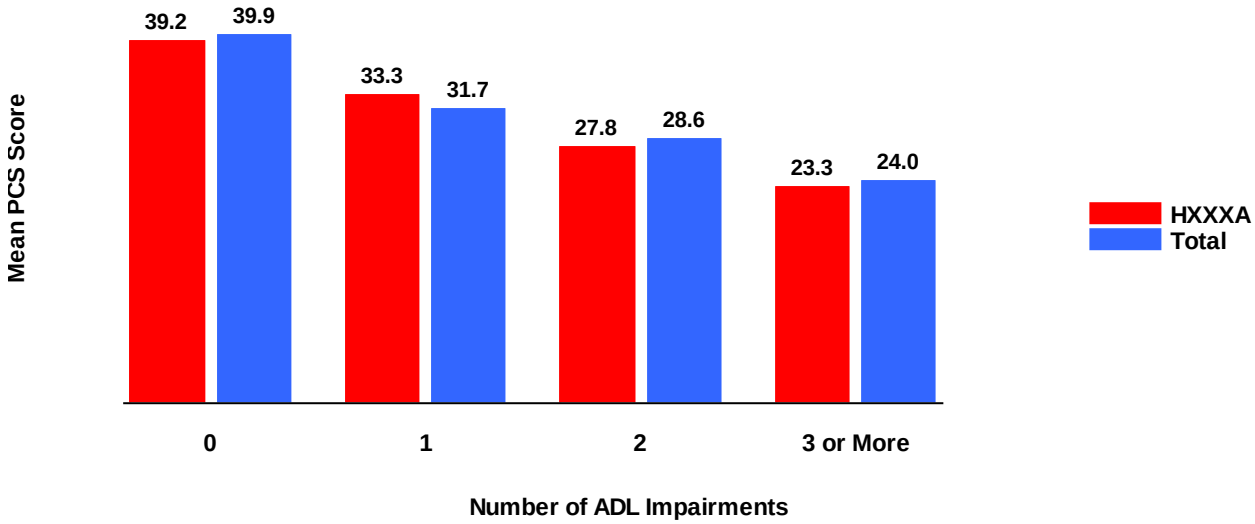
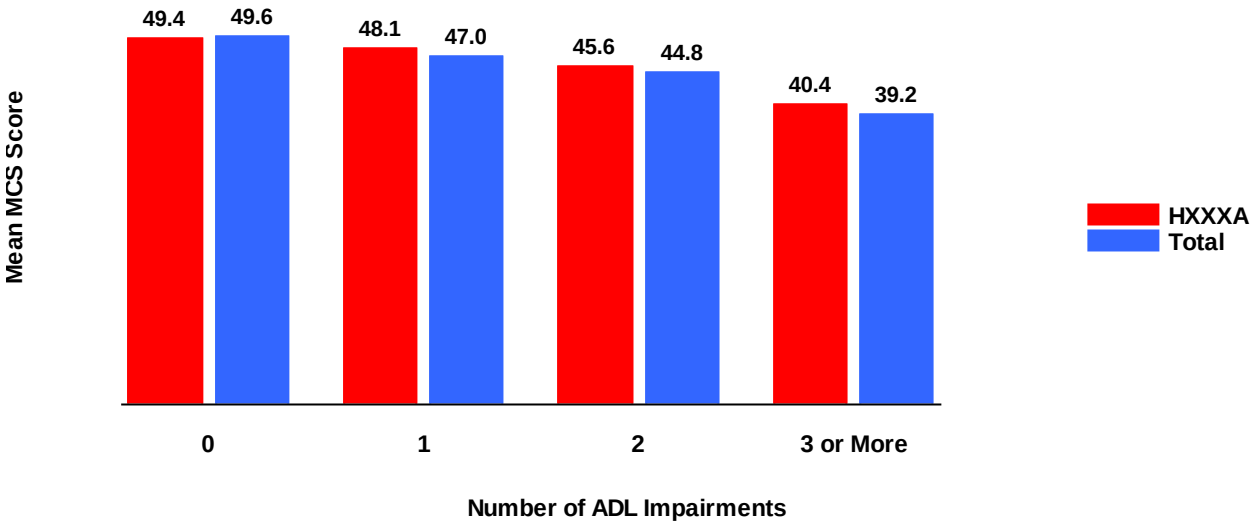


Figure 11 below indicates that MCS scores are also lower for those with a greater number of ADL impairments. The relationship is somewhat similar to that for PCS in that mean MCS generally decreases with increasing numbers of ADL limitations.

Figure 11: 2016 HOS-M Mean MCS Scores by Number of ADL Impairments for PACE HXXXA and HOS-M Total



Other Clinical Measures

Definition of Measures

- Pain that interferes with normal work over the past four weeks is measured with five categories of "Not at all" to "Extremely." The measure is from Question 9 of the HOS-M.
- Memory loss that interferes with daily activities is measured with a "Yes"/"No" response. The measure is from Question 14.
- Difficulty controlling urination (bladder accidents) is measured with five categories from "Never" to "Catheter." The measure is from Question 15.
- Responses to the question "Who completed this survey form?" include "Medicare participant," "Family member, relative, or friend of Medicare participant," and "Nurse or other health professional." The measure is from Question 16.
- Reasons why a proxy filled out the survey for the beneficiary include the following responses: "Physical problems," "Memory loss or mental problems," "Unable to speak or read English," "Person not available," and "Other." The measure is from Question 17.

Pain is one of the most common chronic medical conditions among seniors and can negatively impact both physical and mental health by contributing to depression, anxiety, social isolation, cognitive impairment, immobility, and sleep disturbances.[20] Figure 12 on the following page shows the relationship between mean PCS scores and categories of pain responses for your PACE organization and the HOS-M Total. Beneficiaries who responded "Quite a bit" or "Extremely" had the lowest PCS scores.

Figure 12: 2016 HOS-M Mean PCS Scores by the Extent Pain Interfered with Normal Work during the Past Four Weeks for PACE HXXXA and HOS-M Total

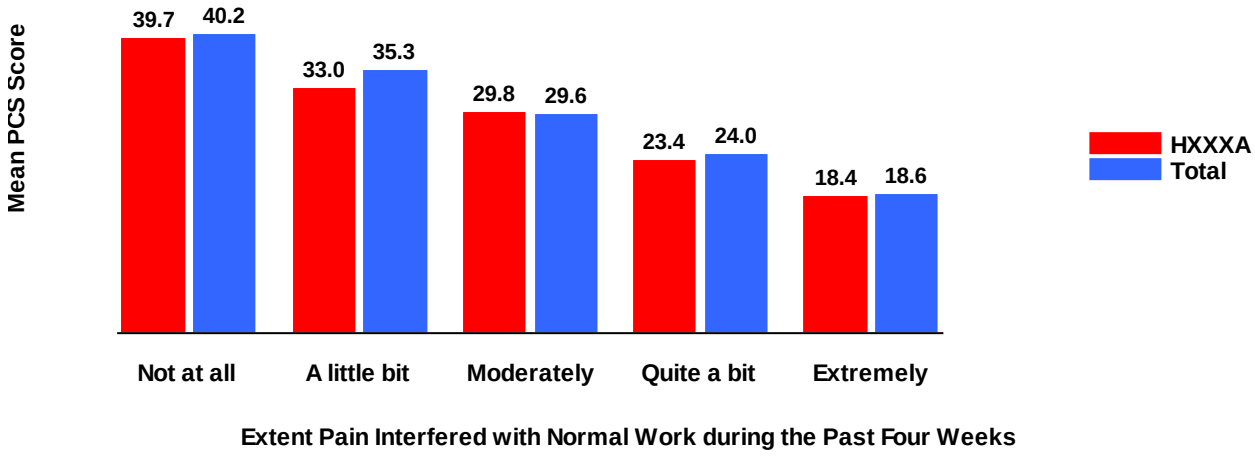


Table 6 provides the number and percentage of respondents who experienced pain in the past four weeks, had memory loss, or difficulty controlling urination, and includes the proxy status of the respondents.

Table 6: 2016 HOS-M Health Limitations for PACE HXXXA and HOS-M Total

HOS-M Item	Plan HXXXA N (%)	HOS-M Total N (%)
Pain During the Past 4 Weeks	(N=643)	(N=14,006)
Not at all	84 (13.1%)	2,009 (14.3%)
A little bit	124 (19.3%)	2,396 (17.1%)
Moderately	113 (17.6%)	2,839 (20.3%)
Quite a bit	180 (28.0%)	4,000 (28.6%)
Extremely	142 (22.1%)	2,762 (19.7%)
Memory Loss	(N=654)	(N=14,312)
Yes	358 (54.7%)	7,467 (52.2%)
No	296 (45.3%)	6,845 (47.8%)
Difficulty Controlling Urination	(N=653)	(N=14,328)
Never	159 (24.3%)	3,850 (26.9%)
Less than once a week	110 (16.8%)	2,329 (16.3%)
Once a week or more often	136 (20.8%)	2,622 (18.3%)
Daily	236 (36.1%)	5,311 (37.1%)
Catheter	12 (1.8%)	216 (1.5%)
Proxy Status	(N=586)	(N=13,058)
Medicare participant	248 (42.3%)	6,021 (46.1%)
Family member or friend	306 (52.2%)	5,684 (43.5%)
Health professional	32 (5.5%)	1,353 (10.4%)

If a beneficiary had assistance in filling out the survey, the proxy respondent was asked to provide the reasons for the assistance. Table 7 provides the results of the reasons why a proxy filled out the survey for beneficiaries in your PACE organization and the HOS-M Total.

Table 7: 2016 HOS-M Reasons for a Proxy* for PACE HXXXA and HOS-M Total

HOS-M Item	Plan HXXXA N (%)	HOS-M Total N (%)
Reasons for Proxy	(N=370)	(N=7,542)
Physical problems	177 (47.8%)	3,356 (44.5%)
Memory loss or mental problems	230 (62.2%)	3,926 (52.1%)
Unable to speak or read English	38 (10.3%)	1,215 (16.1%)
Person not available	41 (11.1%)	921 (12.2%)
Other	100 (27.0%)	2,477 (32.8%)

* Note that percentages may add to more than 100% since respondents could provide more than one reason.

Appendix 1

Introduction to HOS-M

CMS is committed to monitoring the quality of health care provided by its programs. The particular focus of the Medicare HOS is to gather valid and reliable health status data that assesses an MAO's ability to maintain or improve the physical and mental health of its Medicare beneficiaries over time. Baseline data are collected from a new cohort annually. Section 722 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 mandates collecting, analyzing, and reporting health outcomes information. This legislation also specifies that data collected on quality, outcomes, and beneficiary satisfaction to facilitate consumer choice and program administration must use the same types of data that were collected prior to November 1, 2003. Collected since 1998, the HOS remains an important component of the CMS performance assessment system for the Medicare Advantage program.

The HOS-M is a variation of the HOS, which is specifically designed to collect functional status information from PACE enrollees. CMS uses the data collected to adjust the Medicare capitation rates paid to these plans.[7] PACE plans are capitated plans authorized by the Balanced Budget Act of 1997. The PACE program is modeled on the On Lok Senior Health Services in San Francisco.[21] The program delivers all needed medical and supportive services to provide the entire continuum of care and services to seniors with chronic care needs, while maintaining their independence in their homes for as long as possible.

An interdisciplinary team of medical and other staff delivers coordinated services through adult day health centers, in home, and inpatient facilities, such as nursing home and hospice, as well as provides referrals for other needed services.[22] Comprehensive care includes medical services; nursing; physical, occupational and recreational therapies; meals; nutritional counseling; social work; personal care and transportation. To receive PACE services, individuals must be 55 years of age or older, live in the PACE service area, be certified to receive nursing home care, and be able to live safely in the community with help from PACE.

2016 Plan Participation

All PACE plans with Medicare contracts in effect on or before January 1, 2015, and with a minimum of 30 enrollees as of October 31, 2015, were required by CMS to administer the HOS-M in 2016. The HOS-M was administered with the support of the following organizations:

- The National Committee for Quality Assurance (NCQA) assisted CMS with quality oversight for the survey administration and data collection of the HOS-M.
- RTI International (RTI) generated the samples for each PACE organization, provided additional survey support in the administration of the HOS-M, calculated ADL distributions for payment adjustments, and developed frailty reports that are posted on the HPMS Risk Adjustment module under the Survey Results for Frailty Adjustment.
- DataStat, Inc. is the survey vendor that fielded the HOS-M.

- Health Services Advisory Group (HSAG) provided data cleaning, data analysis, and prepared the 2016 HOS-M Reports that are posted on the HPMS Quality and Performance/HOS module under the HOS-M Feedback Reports.

2016 Methodology and Design

HOS-M Sampling

Beneficiaries were defined as eligible for the HOS-M if they were enrolled in a participating PACE plan, resided in the community, did not have ESRD, and were age 55 or older.

- For eligible plans with Medicare populations of 1,200 or more beneficiaries, a simple random cross-sectional sample of 1,200 beneficiaries was selected for the survey (i.e., the survey is not a cohort study).
- For eligible plans with populations of less than 1,200 beneficiaries, all eligible beneficiaries were included in the HOS-M sample.
- Ineligible beneficiaries included those deceased, beneficiaries not enrolled in the health plan, beneficiaries with incorrect address and phone number, beneficiaries having a language barrier, or beneficiaries removed from the sample by RTI due to death, institutionalization, or disenrollment after the sample was drawn.

Survey Administration

The HOS-M protocol differs from that of HOS in several ways: the HOS-M survey instrument is shorter (19 questions for HOS-M vs. more than 60 for the HOS), and the PACE plans provide detailed contact information of their enrollees and family members or caregivers in case a proxy is needed for survey completion. In addition, twice as many telephone attempts (12 for HOS-M vs. 6 for HOS) are conducted for non-respondents to the mail component of survey administration. These differences are designed to achieve a higher response rate for the HOS-M despite the frailty of the target population.[7]

Participating PACE organizations contracted with the survey vendor to administer the survey following the HOS-M protocol specified in the Healthcare Effectiveness Data and Information Set (HEDIS®) 2016, Volume 6, Specifications for the Medicare Health Outcomes Survey Manual, which 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).[23, 24] The manual is available online for download from the "Survey Administration" section under the "Program" page on the HOS website (http://www.hosonline.org).The manual provides details for the mail and telephone follow up methods of data collection.

- The mail component of the survey used a prenotification letter, survey letter, standardized questionnaire, and reminder/thank you postcards. Respondents completed the survey in English, Spanish, or Chinese language versions.
- The survey vendor attempted telephone follow-up, with at least 12 attempts in those instances when beneficiaries failed to respond after the second mail survey or returned an incomplete mail survey, to obtain responses for missing items. A standardized version of

an Electronic Telephone Interviewing System script was used to collect telephone interview data in English, Spanish, or Chinese.
- To ensure a high response rate to support accurate frailty adjustments for payment, the protocol encouraged a family member, close friend, or caregiver to serve as a proxy respondent when needed. PACE plan staff may serve as a proxy only at the request of the beneficiary, a family member, or other caregiver.

RTI provided survey support by working with smaller plans to develop a detailed contact information file with the name and other contact information for up to two potential proxies where available.

Data Cleaning

Data consistency checks are performed to validate integrity of the data and to identify the following:

- Out of range dates and response values
- Duplicate Health Insurance Claim (HIC) numbers
- Duplicate Social Security Numbers (SSN)
- Data shifts in value assignment
- Inconsistent assignment of survey variables (such as survey disposition, round number, and survey language)
- Response consistency checks between related items

2016 Survey Instrument and Summary Scores

Survey Instrument

The core component of the HOS-M is the VR-12 health survey. The VR-12 was developed from the Veterans RAND 36-Item Health Survey (VR-36).[8, 25] The VR-12 is a generic, multipurpose health survey, which consists of selected items from the eight domains of health in the earlier 36-item survey. These domains include: 1) physical functioning; 2) role-physical; 3) bodily pain; 4) general health; 5) vitality; 6) social functioning; 7) role-emotional; and 8) mental health. The role-physical questions assess whether respondents' physical health limits them in the kind of work or other usual activities they perform, while the role-emotional questions assess whether emotional problems have caused respondents to accomplish less in their work or usual activities.

The 14 items of the VR-12 have been tested extensively and shown to be reliable and valid in ambulatory care patient populations.[9] Twelve of the 14 items (Questions 1 and 6-11 of the HOS-M) are used to construct the eight domains that aggregate one or two items each and calculate the PCS and MCS scores, as illustrated in the VR-12 mapping model in Figure 13. Two additional items (Questions 12 and 13) are used to assess change in health status, one focusing on physical health and one on emotional problems (not shown in the model).

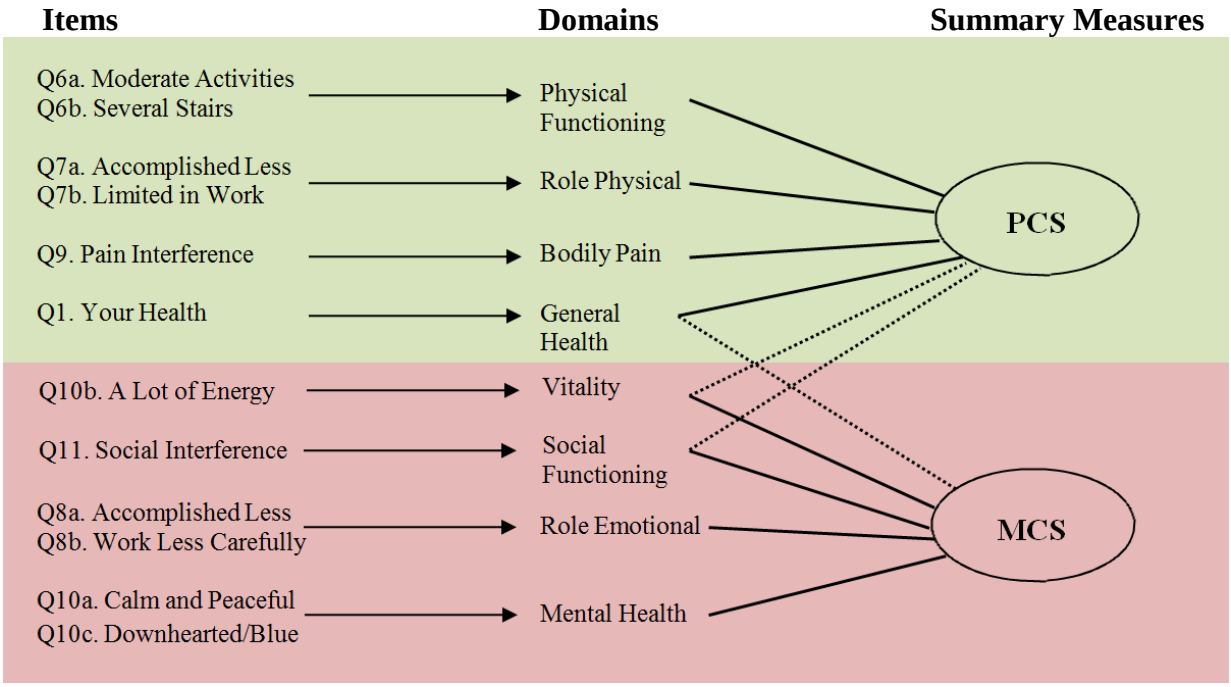
In addition, the HOS-M includes questions about having difficulty with the following:

- Lifting or carrying objects as heavy as 10 pounds (Question 2)
- Walking a quarter-mile (Question 3)
- Performing ADLs and receiving help with ADLs (Questions 4 and 5)
- Experiencing memory loss and urinary incontinence (Questions 14 and 15)

Finally, the HOS-M includes questions that ask:

- Whether the survey is self-completed or completed by a proxy (Question 16)
- The reason for a proxy and how the proxy helped (Questions 17 and 18)
- Professional caregivers to describe their position (Question 19)

Figure 13: Mapping of HOS-M VR-12 to 8 Health Domains and 2 Summary Measures



Note: Domains contributing the most to each summary measure are indicated by a solid line. Domains contributing to a lesser degree are indicated by a broken line. However, all domains contribute to some extent to the scoring of both summary measures (PCS and MCS).

Physical and Mental Component Summary Scores

- The PCS and MCS scores were calculated from the VR-12 using the Modified Regression Estimate (MRE) for scoring and imputation of missing data.[8] For those beneficiaries with complete responses across the VR-12, the following steps were taken[26] to calculate PCS and MCS:
  - Step One: New variables were created for each response level choice with one level omitted. Using the 59 total response categories across the VR-12 questions, 47 indicator variables were created.

    - Step Two: Aggregate PCS and MCS scores were created separately from a regression equation that weights each of the 47 indicator variables. The weights were derived from the Veterans SF-36 PCS and MCS Scales using the 1999 Large Health Survey of Veteran Enrollees.[27]
    - Step Three: A constant was added to each of the estimates obtained from Step Two. The scores were then standardized using normative values from a 1990 U.S. general population. Therefore, a mean score of 50 represents the national average, a 10-point difference above and below the mean score is one standard deviation, and, with few exceptions, the scores have a range of 0 through 100 (higher being better).
- When a beneficiary had missing data across the VR-12 items, PCS and MCS scores were imputed using the MRE. With the use of the MRE algorithm, PCS and MCS scores can be calculated in as many as 90% of the cases in which one or more VR-12 responses are missing.[28] Depending on the pattern of missing item responses for a beneficiary, a different set of regression weights was required to compute that individual's PCS and/or MCS scores.[26] For each combination of missing data, the beneficiaries' data were merged with the stored regression weights and the PCS or MCS scores were computed and then standardized using the normative values from Step Three.
- Beneficiary PCS and MCS results were mode adjusted for the impact of telephone administration compared to the reference mode of mail administration. Comparisons across the VR-12 of matched HOS and Veterans Administration surveys for the same respondents showed that PCS and MCS scores were, on average, 1.9 and 4.5 points greater respectively for telephone compared to mail administered surveys.[29] Therefore, for telephone surveys, 1.9 points were subtracted from the PCS score and 4.5 points were subtracted from the MCS score.
- For the physical health summary measure, very high scores indicate no physical limitations, disabilities, or decline in well-being; high energy level; and a rating of health as "excellent."
- For the mental health summary measure, very high scores indicate frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems.

For the HOS-M Report, the PCS and MCS scores were *not* adjusted for case mix variables, i.e., demographic characteristics.

Appendix 2

2016 HOS-M Frequencies of Selected Survey Fields for PACE HXXXA

Table A1: 2016 HOS-M Selected Health Status Measures for PACE HXXXA and HOS-M Total

Health Item	Plan HXXXA N (%)	HOS-M Total N (%)
Difficulty Lifting or Carrying 10 Pounds	(N=668)	(N=14,585)
No difficulty	50 (7.5%)	1,194 (8.2%)
A little difficulty	59 (8.8%)	1,575 (10.8%)
Some difficulty	134 (20.1%)	3,095 (21.2%)
A lot of difficulty	129 (19.3%)	3,385 (23.2%)
Not able to do it	296 (44.3%)	5,336 (36.6%)
Difficulty Walking a Quarter-Mile	(N=669)	(N=14,610)
No difficulty	41 (6.1%)	1,039 (7.1%)
A little difficulty	45 (6.7%)	1,321 (9.0%)
Some difficulty	103 (15.4%)	2,441 (16.7%)
A lot of difficulty	153 (22.9%)	3,337 (22.8%)
Not able to do it	327 (48.9%)	6,472 (44.3%)
Health Limits Moderate Activities	(N=652)	(N=14,331)
Yes, limited a lot	451 (69.2%)	9,498 (66.3%)
Yes, limited a little	131 (20.1%)	3,235 (22.6%)
No, not limited at all	70 (10.7%)	1,598 (11.2%)
Health Limits Climbing Several Flights of Stairs	(N=642)	(N=14,241)
Yes, limited a lot	472 (73.5%)	10,229 (71.8%)
Yes, limited a little	117 (18.2%)	2,710 (19.0%)
No, not limited at all	53 (8.3%)	1,302 (9.1%)

2016 HOS-M Frequencies of Selected Survey Fields (continued)

Table A1 (Cont.): 2016 HOS-M Selected Health Status Measures for PACE HXXXA and HOS-M Total

Health Item	Plan HXXXA N (%)	HOS-M Total N (%)
Physical Health in the Past 4 Weeks: Accomplished Less	(N=659)	(N=14,222)
No, none of the time	72 (10.9%)	1,843 (13.0%)
Yes, a little of the time	75 (11.4%)	1,558 (11.0%)
Yes, some of the time	117 (17.8%)	2,742 (19.3%)
Yes, most of the time	135 (20.5%)	2,820 (19.8%)
Yes, all of the time	260 (39.5%)	5,259 (37.0%)
Physical Health in the Past 4 Weeks: Limited in Kind of Work or Activities	(N=651)	(N=14,209)
No, none of the time	81 (12.4%)	1,821 (12.8%)
Yes, a little of the time	54 (8.3%)	1,342 (9.4%)
Yes, some of the time	98 (15.1%)	2,510 (17.7%)
Yes, most of the time	144 (22.1%)	2,878 (20.3%)
Yes, all of the time	274 (42.1%)	5,658 (39.8%)
Mental Health in the Past 4 Weeks: Accomplished Less	(N=655)	(N=14,257)
No, none of the time	174 (26.6%)	3,919 (27.5%)
Yes, a little of the time	100 (15.3%)	1,833 (12.9%)
Yes, some of the time	109 (16.6%)	2,774 (19.5%)
Yes, most of the time	95 (14.5%)	2,042 (14.3%)
Yes, all of the time	177 (27.0%)	3,689 (25.9%)
Mental Health in the Past 4 Weeks: Didn't Do Work or Activities As Usual	(N=645)	(N=14,030)
No, none of the time	203 (31.5%)	4,422 (31.5%)
Yes, a little of the time	80 (12.4%)	1,765 (12.6%)
Yes, some of the time	96 (14.9%)	2,441 (17.4%)
Yes, most of the time	89 (13.8%)	1,737 (12.4%)
Yes, all of the time	177 (27.4%)	3,665 (26.1%)

2016 HOS-M Frequencies of Selected Survey Fields (continued)

Table A1 (Cont.): 2016 HOS-M Selected Health Status Measures for PACE HXXXA and HOS-M Total

Health Item	Plan HXXXA N (%)	HOS-M Total N (%)
Felt Calm and Peaceful During the Past 4 Weeks	(N=658)	(N=14,338)
All of the time	76 (11.6%)	1,593 (11.1%)
Most of the time	180 (27.4%)	3,883 (27.1%)
A good bit of the time	104 (15.8%)	2,134 (14.9%)
Some of the time	187 (28.4%)	3,967 (27.7%)
A little of the time	78 (11.9%)	2,035 (14.2%)
None of the time	33 (5.0%)	726 (5.1%)
Had a Lot of Energy During the Past 4 Weeks	(N=659)	(N=14,362)
All of the time	19 (2.9%)	562 (3.9%)
Most of the time	63 (9.6%)	1,539 (10.7%)
A good bit of the time	57 (8.6%)	1,234 (8.6%)
Some of the time	171 (25.9%)	3,683 (25.6%)
A little of the time	200 (30.3%)	4,025 (28.0%)
None of the time	149 (22.6%)	3,319 (23.1%)
Felt Downhearted and Blue During the Past 4 Weeks	(N=653)	(N=14,290)
All of the time	28 (4.3%)	727 (5.1%)
Most of the time	42 (6.4%)	1,297 (9.1%)
A good bit of the time	48 (7.4%)	1,260 (8.8%)
Some of the time	185 (28.3%)	4,207 (29.4%)
A little of the time	171 (26.2%)	3,418 (23.9%)
None of the time	179 (27.4%)	3,381 (23.7%)
Physical or Emotional Health Interfered With Social Activities During the Past 4 Weeks	(N=660)	(N=14,353)
All of the time	102 (15.5%)	2,282 (15.9%)
Most of the time	133 (20.2%)	2,706 (18.9%)
Some of the time	177 (26.8%)	3,973 (27.7%)
A little of the time	102 (15.5%)	2,312 (16.1%)
None of the time	146 (22.1%)	3,080 (21.5%)

2016 HOS-M Frequencies of Selected Survey Fields (continued)

Table A2: 2016 HOS-M Difficulty with Activities of Daily Living for PACE HXXXA and HOS-M Total

Health Item	Plan HXXXA N (%)	HOS-M Total N (%)
Difficulty Bathing	(N=667)	(N=14,596)
No difficulty	225 (33.7%)	5,575 (38.2%)
Have difficulty/unable to do	442 (66.3%)	9,021 (61.8%)
Difficulty Dressing	(N=665)	(N=14,570)
No difficulty	299 (45.0%)	7,229 (49.6%)
Have difficulty/unable to do	366 (55.0%)	7,341 (50.4%)
Difficulty Eating	(N=665)	(N=14,552)
No difficulty	528 (79.4%)	11,591 (79.7%)
Have difficulty/unable to do	137 (20.6%)	2,961 (20.3%)
Difficulty Getting In/Out of Chairs	(N=665)	(N=14,586)
No difficulty	252 (37.9%)	6,067 (41.6%)
Have difficulty/unable to do	413 (62.1%)	8,519 (58.4%)
Difficulty Walking	(N=668)	(N=14,552)
No difficulty	152 (22.8%)	3,451 (23.7%)
Have difficulty/unable to do	516 (77.2%)	11,101 (76.3%)
Difficulty Using the Toilet	(N=668)	(N=14,586)
No difficulty	376 (56.3%)	8,740 (59.9%)
Have difficulty/unable to do	292 (43.7%)	5,846 (40.1%)

2016 HOS-M Frequencies of Selected Survey Fields (continued)

Table A3: 2016 HOS-M Receiving Help with Activities of Daily Living for PACE HXXXA and HOS-M Total

Health Item	Plan HXXXA N (%)	HOS-M Total N (%)
Receive Help Bathing	(N=668)	(N=14,587)
No help	276 (41.3%)	6,864 (47.1%)
Receive help	381 (57.0%)	7,531 (51.6%)
Do not do this activity	11 (1.6%)	192 (1.3%)
Receive Help Dressing	(N=665)	(N=14,506)
No help	347 (52.2%)	8,250 (56.9%)
Receive help	310 (46.6%)	6,104 (42.1%)
Do not do this activity	8 (1.2%)	152 (1.0%)
Receive Help Eating	(N=666)	(N=14,411)
No help	552 (82.9%)	11,823 (82.0%)
Receive help	105 (15.8%)	2,417 (16.8%)
Do not do this activity	9 (1.4%)	171 (1.2%)
Receive Help Getting In/Out of Chairs	(N=659)	(N=14,416)
No help	393 (59.6%)	9,189 (63.7%)
Receive help	250 (37.9%)	4,924 (34.2%)
Do not do this activity	16 (2.4%)	303 (2.1%)
Receive Help Walking	(N=655)	(N=14,394)
No help	339 (51.8%)	7,750 (53.8%)
Receive help	244 (37.3%)	5,244 (36.4%)
Do not do this activity	72 (11.0%)	1,400 (9.7%)
Receive Help Using the Toilet	(N=664)	(N=14,463)
No help	457 (68.8%)	10,550 (72.9%)
Receive help	190 (28.6%)	3,519 (24.3%)
Do not do this activity	17 (2.6%)	394 (2.7%)

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