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Medicare Health Outcomes Survey (HOS) Glossary

Activities of Daily Living (ADLs)

ADLs are the everyday activities involved in personal care such as eating, 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. The HOS collects information on limitations in ADLs.

Affordable Care Act (ACA)

The Patient Protection and Affordable Care Act (PPACA), commonly called the Affordable Care Act (ACA), is a U.S. federal statute signed into law on March 23, 2010. The law, along with the Health Care and Education Reconciliation Act of 2010, was the principal health care reform legislation of the 111th United States Congress. The ACA reformed certain aspects of the private health insurance industry and public health insurance programs, increased insurance coverage of pre-existing conditions, expanded access to insurance to over 30 million Americans, and increased projected national medical spending while lowering projected Medicare spending.

In 2011, the U.S. Department of Health and Human Services (HHS) published final standards for data collection on race, ethnicity, sex, primary language, and disability status, as required by Section 4302 of the ACA. The law requires that data collection standards for these measures be used, to the extent practicable, in all national population health surveys sponsored by HHS and applies to self-reported information only.

Analytic Sample

Analytic samples are defined below for the two annual Medicare HOS reports:

Baseline analytic sample is limited to seniors, age 65 or older at baseline, who had a physical component summary (PCS) score or a mental component summary (MCS) score and a valid reporting unit (Medicare Advantage Organization).

Performance Measurement analytic sample is limited to seniors, age 65 or older at baseline, who had a PCS or MCS score at baseline, and the same valid reporting unit (Medicare Advantage Organization) at baseline and follow up.

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a continuous, state-based, random telephone survey of community-dwelling U.S. adults aged 18 and older. The BRFSS is administered and supported by the Centers for Disease Control and Prevention (CDC).

Beneficiary

An individual receiving benefits from the Medicare program.

Beneficiary Link Key	A unique, unidentifiable link key assigned by the Centers for Medicare & Medicaid Services (CMS) that replaces the Health Insurance Claim Number (HIC #) when linking beneficiaries across CMS data files.
Body Mass Index (BMI)	BMI is a measure that correlates with the amount of body fat in men and women, and is calculated based on height and weight. The HOS collects information on self-reported height and weight to calculate BMI results. The formula for the calculation is: $BMI = [\text{weight in pounds}/(\text{height in inches})^2] \times 703$, which uses the height and weight to produce the standard measure of kg/m^2 units.
Boston University	<p>Boston University School of Public Health, Health Policy & Management Department, CAPP: Center for the Assessment of Pharmaceutical Practices (formerly Health Outcomes Technology Program [HOT]) works with the National Committee for Quality Assurance (NCQA) for the Medicare HOS Program to support the science of survey design and methodology. Analyses included psychometric comparisons of 36 item surveys used in the Medicare managed care and the Veteran’s Health Administration programs, comparisons of health outcomes between the Medicare Advantage and VA patient populations, and analysis of case mix methodology employed by the HOS.</p> <p>Center for the Assessment of Pharmaceutical Practices Health Policy & Management Department Boston University School of Public Health 715 Albany Street (T-3W) Boston, MA 02118 Website: http://www.bu.edu/sph/research/center-for-the-assessment-of-pharmaceutical-practices-capp/</p>
Case-Mix Adjustment	A method that adjusts data results for patient characteristics, which are known to be related to systematic biases in the way people respond to survey questions. The adjustment uses regression techniques, and assumes that the control variables (covariates) have been measured accurately, that the model is correctly specified, and is applicable to all cases.
Centers for Disease Control and Prevention (CDC)	The CDC is the nation’s public health agency, conducting critical science, tracking disease, and providing health information. More information about the CDC is available at: https://www.cdc.gov/ .

Centers for Medicare & Medicaid Services (CMS)

CMS is responsible for administering the Medicare, Medicaid, and Child Health Insurance Programs.

Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244
Website: <https://www.cms.gov/>

CMS Regions and Regional Offices

CMS has Regional Offices in ten major cities throughout the U.S., in addition to their Central Office in Baltimore. Each Regional Office enacts regulations, policies, and program guidance developed to achieve a high quality health care system, and covers a specific group of states, and for some regions, U.S. Territories and Commonwealths, which are listed below. Additional information is provided on the CMS Regional Offices page at <https://www.cms.gov/>.

Region	Regional Office	States
Region 1	Boston	CT, ME, MA, NH, RI, VT
Region 2	New York	NJ, NY, the Commonwealth of Puerto Rico (PR), and the Territory of the Virgin Islands (VI)
Region 3	Philadelphia	DE, MD, PA, VA, WV, the District of Columbia (DC)
Region 4	Atlanta	AL, FL, GA, KY, MS, NC, SC, TN
Region 5	Chicago	IL, IN, MI, MN, OH, WI
Region 6	Dallas	AR, LA, NM, OK, TX
Region 7	Kansas City	IA, KS, MO, NE
Region 8	Denver	CO, MT, ND, SD, UT, WY
Region 9	San Francisco	AZ, CA, HI, NV, the Pacific Territories of American Samoa (AS), and Guam (GU), and the Commonwealth of the Northern Mariana Islands (MP)
Region 10	Seattle	AK, ID, OR, WA

Cohort	A cohort is a group of people who share a common designation, experience, or condition (e.g., Medicare beneficiaries). For the HOS, a cohort refers to a random sample of Medicare beneficiaries that is drawn from each Medicare Advantage Organization (MAO) with a minimum of 500 enrollees and surveyed every spring (i.e., a baseline survey is administered to a new cohort each year). Two years later, the baseline respondents are surveyed again (i.e., follow up measurement). For data collection years 1998-2006, the MAO sample size was 1,000. Effective 2007, the MAO sample size was increased to 1,200.
Committee on Performance Measurement (CPM)	The National Committee for Quality Assurance (NCQA) CPM is a committee that oversees the development of the HEDIS [®] measurement set. The CPM includes representatives from employers, consumers, health plans, and other groups, and reviews all public comments before making final decisions on the content of the measurement set.
Data Evaluation	The process by which discrepancies within the data are identified and resolved, including issues related to file structure, record numbers, valid values, and data consistency.
Data Use Agreement (DUA)	A DUA is a formal request to obtain CMS data sets that contain protected health information (PHI) and/or personally identifiable information (PII). Once approved, the requestor must uphold the guidelines set forth in the agreement, which includes ensuring security requirements and confidentiality of the data. DUAs permit CMS to track and account for all disclosures of PII, a mandate of the Privacy Act of 1974.
Data Users Guide (DUG)	A DUG is distributed with each MAO's Medicare HOS Performance Measurement data set and with each PACE organization's Medicare HOS-M data set to provide detailed documentation regarding beneficiary-level file construction and contents. The DUGs are also available in the Data Users Guide section under the Data page at www.HOSonline.org .

Depression Screen (in the HOS)

Beginning with the 2013 HOS 2.5, two new questions about depression were added to the HOS. A Medicare beneficiary is considered to have a positive depression screen when scoring a sum of three or more points from the two depression questions:

- Little interest or pleasure in doing things over past two weeks
- Feeling down, depressed, or hopeless over past two weeks

For the years 2009-2012, four questions were used to determine a positive depression screen, and three of the four questions were used for the years 1998-2008 (see earlier HOS instruments on the Survey page at www.HOSonline.org). A participant in the Medicare 1998-2012 HOS was considered to have a positive depression screen when answering “yes” to *any* of the applicable depression questions.

Due to the change in depression screening methodology, estimates of the proportion with a positive depression screen from the 2013 HOS 2.5 and subsequent versions are not comparable to estimates produced using the HOS versions 1.0 (1998-2005) or 2.0 (2006-2012).

Disenrollment

Beneficiaries who respond at baseline and are no longer in their original MAO at follow up are considered disenrolled. There are two types of disenrollment:

Involuntary: The beneficiary’s MAO is no longer a part of the HOS as of the follow up remeasurement.

Voluntary: The beneficiary’s MAO continues in the HOS; however, the beneficiary is no longer enrolled in the MAO as of the follow up remeasurement.

Dual Eligible

“Dual eligible beneficiaries” is the general term that describes beneficiaries who are enrolled in both Medicare and Medicaid. The term includes beneficiaries who are enrolled in Medicare Part A and/or Part B and receive full Medicaid benefits and/or assistance with Medicare premiums or cost sharing through the Medicare Savings Program (MSP).

Electronic Telephone Interviewing System

A system that provides interviewers with a standardized version of the survey (including questions, scripts, and prompts), to collect telephone interview data from a sampled beneficiary or a proxy. Interviewers attempt telephone follow up in English or Spanish when beneficiaries fail to respond after a second mail survey or return an incomplete mail survey.

Eligible HOS Sample

Eligible samples are defined below for the two annual Medicare HOS reports:

Baseline eligible sample includes those beneficiaries who were randomly selected from their MAO, were seniors (age 65 or older) or disabled (less than age 65), and did not have an ineligible HOS survey. For data collection years 1998-2008, beneficiaries were required to be continuously enrolled in their MAO for a six month period to be eligible for sampling. Effective 2009, this requirement is waived. For data collection years 1998-2009, beneficiaries with End Stage Renal Disease (ESRD) were excluded from the samples. Effective 2010, those with ESRD are no longer excluded.

Performance Measurement eligible sample is limited to those seniors (age 65 or older at baseline) who had a baseline PCS or MCS score, were alive at follow up, and were still enrolled in their original MAO at follow up.

Eligible HOS-M Sample

Beginning in 2010, the eligible sample for the Medicare HOS-M report includes those beneficiaries in PACE organizations who were randomly selected from their HOS-M plan, were seniors and disabled beneficiaries (age 55 and older), and did not have an ineligible HOS-M survey. For the data collection years 2005-2009, seniors and disabled beneficiaries from Dual-Eligible Demonstration Projects in Massachusetts, Minnesota, and Wisconsin were also included.

Employer/Union Only Direct PFFS and PDP Contracts

An MAO under contract with an employer, labor organization, or the trustees of a fund established by one or more of these entities to furnish health benefits to current or former employees or members.

End Stage Renal Disease (ESRD)

ESRD is characterized by permanent kidney failure that is treated with dialysis or a transplant. Since 2010, those with ESRD are included in the HOS baseline sampling.

Fall Risk Management (FRM)	FRM is an NCQA HEDIS [®] measure that is comprised of four HOS questions that collect information on a beneficiary’s history of falls or problems with balance or walking, a discussion of falls with a medical provider, and a provider’s management of fall risk. Two rates are calculated: the Discussing Fall Risk rate and the Managing Fall Risk rate; the latter is used for the <i>Reducing the Risk of Falling</i> measure reported by CMS for the Medicare Star Ratings. Beginning in 2018, the Discussing Fall Risk denominator was expanded to include all members age 65 or older who were seen by a practitioner in the past 12 months. See Medicare Star Ratings for more details.
Fully Integrated Dual-Eligible Special Needs Plan (FIDE SNP)	A FIDE SNP is a plan benefit package within an MAO that integrates Medicare, Medicaid, and supplemental benefits into a single plan for eligible beneficiaries. A FIDE SNP must have a capitated contract with a State Medicaid Agency for primary, acute, and long-term care. Starting in 2011, prospective FIDE SNPs may elect to report the HOS to determine if they are eligible for frailty adjustment payment under the Patient Protection and Affordable Care Act of 2010, similar to payment provided to PACE programs. Since 2014, FIDE SNPs may choose either the HOS or HOS-M for their frailty assessment. See Special Needs Plan (SNP) and Plan Benefit Package (PBP).
Frequently Asked Questions (FAQs)	The HOS website has a FAQs selection at the bottom of each page that links to frequently asked questions and answers about the Medicare HOS (www.HOSonline.org).
Health Insurance Claim Number (HIC #)	The HIC #, usually the Medicare number, is the beneficiary level unit of analysis for the HOS reports.
Health Plan Management System (HPMS)	The HPMS is the CMS web-enabled information system that assists with ongoing operations of the MA, Part D, and Accountable Care Organization (ACO) programs by facilitating data collection and reporting activities, and providing support for plan enrollment and compliance business functions.
Health Services Advisory Group (HSAG)	CMS contracts with HSAG to provide HOS data evaluation and analysis; develop and disseminate data files and reports; educate data users and stakeholders on HOS findings and applications; and conduct applied research with HOS data to support CMS priorities.
	<p>Health Services Advisory Group 3133 East Camelback Road, Suite 100 Phoenix, AZ 85016 Website: https://www.hsag.com/</p>

Healthcare Effectiveness
Data and Information
Set (HEDIS[®])

HEDIS[®] is the most widely used set of performance measures in the managed care industry, and is developed and maintained by NCQA. The Medicare HOS is a HEDIS[®] Effectiveness of Care measure.

Health-Related Quality
of Life (HRQOL)

The concept of HRQOL refers to a person or group's perceived physical and mental health over time. HRQOL is used to measure the effects of chronic illness to better understand how an illness interferes with a person's day-to-day life, and to measure the effects of numerous disorders, disabilities, and diseases in different populations. Tracking HRQOL can identify subgroups with poor physical or mental health and guide policies or interventions to improve their health.

Healthy Days Measures

The HOS instrument incorporates three Healthy Days questions from the CDC's BRFSS. Two items ask beneficiaries about their physical and mental health during the previous thirty days, and one item asks how their poor physical or mental health limited them from doing their usual activities, such as self-care, work, or recreation. For additional information regarding the Healthy Days Measures and findings, please visit the CDC Health-Related Quality of Life (HRQOL) website at <https://www.cdc.gov/hrqol/>. Comparative national and state-level Healthy Days Measures data, including demographic breakdowns by age, sex, or race/ethnicity groups within each state, can be found at <https://www.cdc.gov/hrqol/surveillance.htm> (the CDC HRQOL Prevalence Data page).

HEDIS[®] Volume 6
Manual

Since 2015, the HEDIS[®] Volume 6: Specifications for the Medicare Health Outcomes Survey (HOS) manuals are available in the Survey Administration section on the Program page at www.HOSonline.org. The manuals contain information about the survey, measure descriptions, HEDIS[®] protocols, HOS and HOS-M questionnaires, and the text for the survey letters and postcards.

HOS Measure

The HOS measure assesses an MAO's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over time. See Medicare Health Outcomes Survey (HOS).

HOS Website and Technical Support

The CMS HOS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HOS/index.html> provides general information about the HOS program. A full description of the program may be found at www.HOSonline.org. The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), and Email Address (hos@hcqis.org) are available to provide technical assistance for questions about HOS reports and data.

Ineligible HOS Survey

Ineligible surveys are defined below for the Medicare HOS baseline and follow up cohorts:

Baseline ineligible survey meets one of the following criteria: the beneficiary is deceased, not enrolled in the MAO, has an incorrect address and phone number, has a language barrier, or is removed from the sample due to age less than 18 years.

Follow Up ineligible survey meets one of the following criteria: no longer enrolled in the MAO, has an incorrect address and phone number, or has a language barrier.

Ineligible HOS-M Survey

Ineligible surveys for the Medicare HOS-M meet one of the following criteria: the beneficiary is deceased; not enrolled in the health plan; has an incorrect address and phone number; has a language barrier; or is removed from the sample due to death, institutionalization, or disenrollment after the sample is drawn.

Instrumental Activities of Daily Living (IADLs)

IADLs are activities that are often performed during the course of a normal day by a person who is living independently in a community setting. Three of the activities are included in the HOS: managing money, preparing meals, and taking medications as prescribed. Activities can also include: shopping, telephone use, travel in the community, and housekeeping. IADLs measure a person's ability to live independently.

Likert Scale

A Likert Scale is an ordinal scale of responses to a question in an ordered sequence, such as from “(1) strongly disagree” through “(2) no opinion” to “(3) strongly agree.” Rensis Likert, a social psychologist, developed an empirical method for assigning numerical scores to this type of scale.

Limited Data Set (LDS) The HOS LDS files are comprised of the national sample for a cohort and contain responses to all survey items; however, specific direct person identifiers (i.e., name, address, and Medicare health insurance claim number) are not included. The MAO contract number is blinded in the LDS and certain fields describing MAOs have been modified (i.e., categorical enrollment) or excluded (i.e., plan name). The files are constructed to prevent the identification of any single beneficiary or plan.

The data sets are available for researchers to request through a CMS DUA. For more information, go to the Research Data Files section under the Data page at www.HOSonline.org. To request an LDS, go to the CMS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/LimitedDataSets/index.html>.

Management of Urinary Incontinence in Older Adults (MUI)

MUI is an NCQA HEDIS[®] measure that is comprised of four HOS questions to gather data on involuntary leakage of urine also called urinary incontinence (UI), UI interfering with daily activities or sleep, patient/provider discussion of UI, and patient/provider discussion of UI treatment options. Three rates are calculated: the Discussing Urinary Incontinence rate, the Treatment of Urinary Incontinence rate, and the Impact of Urinary Incontinence rate. The Treatment of Urinary Incontinence rate is used for the *Improving Bladder Control* measure reported by CMS for the Medicare Star Ratings. See Medicare Star Ratings for more details.

Medical Outcomes Study 36-Item Health Survey (MOS SF-36)

The MOS SF-36 is a generic, multi-purpose health survey with 36 questions. The 36-item survey is used to compute physical component summary (PCS) and mental component summary (MCS) scores. The MOS SF-36 was the core outcomes measure in the Medicare HOS Version 1.0 (HOS 1.0).

Medical Savings Account (MSA) Plan

An MSA plan combines a high-deductible health plan with a medical savings account. Enrollees of Medicare MSA plans can initially use their savings account to help pay for health care, and then will have coverage through a high-deductible insurance plan once they reach their deductible. Medicare MSA plans provide Medicare beneficiaries with more control over health care utilization, while still providing coverage against catastrophic health expenses.

Medicare

CMS administers Medicare, the nation's largest health insurance program, which covers 60 million Americans. Medicare is a health insurance program for people age 65 or older, people under 65 with certain disabilities, and people with ESRD. Coverage is provided through the Original Medicare Plan (sometimes referred to as “fee-for-service”) or through a private Medicare Advantage health plan. Visit <https://www.medicare.gov/> for additional information about the Medicare Program.

Medicare Advantage Organization (MAO)

MAOs are private organizations approved by Medicare to provide health care coverage offered at a uniform premium and uniform level of cost-sharing to Medicare beneficiaries residing in the service area. An MAO participates in Medicare Part C and may be a coordinated care plan, including plans offered by Health Maintenance Organizations (HMOs), Provider-Sponsored Organizations (PSOs), regional or local Preferred Provider Organizations (PPOs), Private Fee-For-Service (PFFS) contracts, Employer/Union Only contracts, Medical Savings Account (MSA) contracts and Medicare-Medicaid Plans. Most MAOs include Medicare prescription drug coverage (Medicare Part D).

A Special Needs Plan (SNP) includes any type of coordinated care plan that meets the CMS SNP requirements and either exclusively enrolls special needs individuals as defined in Section 422.2 of the Code of Federal Regulations (CFR), or enrolls a greater proportion of special needs individuals than occurs nationally in the Medicare population as defined by CMS (see Special Needs Plan).

A Medicare-Medicaid Plan (MMP) is a private health plan that has been competitively selected and approved to provide integrated care to eligible full-benefit Medicare-Medicaid enrollees under the CMS Financial Alignment Demonstration (see Medicare-Medicaid Plan).

Medicare Current Beneficiary Survey (MCBS)

The MCBS is a continuous, multipurpose survey of a representative national sample of the Medicare population, conducted by CMS. The central goals of MCBS are to determine expenditures and sources of payment for all services used by Medicare beneficiaries; to ascertain all types of health insurance coverage and relate coverage to sources of payment; and to trace processes over time and the impacts of program changes, satisfaction with care, and usual source of care.

Medicare
Fee-For-Service

The Original Medicare Plan is a “fee-for-service” plan. A Medicare beneficiary is usually charged a fee for each health care service or supply that is provided. Original Medicare has two parts: Part A (Hospital Insurance) and Part B (Supplementary Medical Insurance).

Medicare Health
Outcomes Survey (HOS)

Collected since 1998, the HOS is the first patient-reported national health outcomes measure for the Medicare population in managed care settings, and therefore remains a critical part of assessing MAO quality. The Medicare HOS assesses an MAO’s ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over time. The survey is administered to a random sample of beneficiaries from each MAO at the beginning and end of a two-year period. The goal of the Medicare HOS program is to gather valid and reliable clinically meaningful data that have many uses, such as for targeting quality improvement activities and resources; monitoring health plan performance and rewarding top-performing health plans; helping beneficiaries make informed health care choices; and advancing the science of functional health outcomes measurement. The survey instruments are available on the Survey page at www.HOSonline.org (see also Medicare HOS Versions 1.0, 2.0, 2.5, and 3.0).

Medicare Health
Outcomes Survey-
Modified (HOS-M)

The HOS-M is an abbreviated version of the Medicare HOS. The HOS-M focuses on frail and elderly beneficiaries, and provides a summary of their demographic information, physical and mental health status, and selected health symptoms. The instrument contains six Activity of Daily Living (ADL) items as the core items used to calculate a frailty adjustment factor for payment purposes. Among other questions, the survey also includes the physical and mental health status questions from the VR-12, one question about memory loss interfering with daily activities, one question about urinary incontinence, and three questions related to proxy respondents. The survey instruments are available on the Survey page at www.HOSonline.org.

Medicare HOS Baseline Report

The *Baseline* report contains information on baseline measures of physical and mental health, chronic medical conditions, functional status (i.e., ADLs), HEDIS[®] measures, clinical measures, and other health status indicators collected on a random sample of MAO beneficiaries in a single year. The *Baseline* report is made available through the Health Plan Management System (see HPMS) to all participating MAOs one year after each baseline cohort data collection is completed. Downloads of the report include summary level data in a Comma Separated Values (CSV) file that can be opened in Excel and contains contract-level survey responses, demographic data, and the HOS HEDIS[®] Effectiveness of Care process measures used in the Medicare Star Ratings (see Medicare HOS Summary Level Data).

Medicare HOS Performance Measurement Beneficiary Level Data

The Medicare HOS Performance Measurement Beneficiary Level Data are distributed each fall to MAOs that request their data (via email to hos@hcqis.org). The new cohort data are made available one year after collection of the follow up component of a cohort. The data are provided in a CSV file and contain beneficiary identifying information (e.g., SSN and HIC numbers), and beneficiary level data for the baseline and follow up survey responses, demographic information, and calculated fields (e.g., PCS and MCS scores, BMI, and a depression screen). Detailed documentation regarding file construction and contents are distributed with all data sets in the accompanying Data Users Guide (DUG).

Medicare HOS Performance Measurement Report

The *Performance Measurement* report results reflect an MAO's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two-year period of time. The *Performance Measurement* results provide measures of change in physical and mental health over time for a representative sample of beneficiaries in an MAO. Additionally, baseline and follow up information is provided for chronic medical conditions, functional status (i.e., ADLs), clinical measures, and other health status indicators. The *Performance Measurement* report is made available through the HPMS to all participating MAOs one year after the collection of follow up data on each cohort. Downloads of the report include summary level data in a CSV file that can be opened in Excel and contains contract-level survey responses, demographic data, and the HOS functional health measures used in the Medicare Star Ratings (See Medicare HOS Summary Level Data).

Medicare HOS
Summary Level Data

Beginning in 2013, each MAO's Medicare HOS Summary Level Data from their *Baseline* and *Performance Measurement* Reports are included with each PDF report in a ZIP file that can be downloaded from HPMS. The data summarize the responses to the survey questions, also found in Appendix 2 of the Reports, as well as demographic information, PCS and MCS scores, BMI, and a depression screen. Since 2014, the results of measures reported for the Medicare Star Ratings are added to the CSV files.

Medicare HOS Version
1.0 (HOS 1.0)

The HOS 1.0 consists of four components: physical and mental health status questions; HEDIS[®] Effectiveness of Care measures for management of urinary incontinence and physical activity; questions for case-mix and risk adjustment purposes; and additional health questions. The original HOS 1.0 was used for data collection years 1998-2005 and included the Medical Outcomes Study 36-Item Health Survey (MOS SF-36) as the core physical and mental health outcomes measures.

Medicare HOS Version
2.0 (HOS 2.0)

Implemented in 2006, the HOS 2.0 reduced the core physical and mental health outcomes measures from 36 items to 12 items, using the Veterans RAND 12-Item Health Survey (VR-12). Conversion formulas have been developed and validated for the 36-item measure and the 12-item measure that will allow comparison of HOS 1.0 and HOS 2.0 results. Additional changes to the original HOS measure include the removal of redundant or less useful items, the addition of HEDIS[®] Effectiveness of Care measures for osteoporosis testing and fall risk management, and height and weight questions for calculation of BMI.

Medicare HOS Version
2.5 (HOS 2.5)

Implemented in 2013, the HOS 2.5 uses the VR-12 as the core physical and mental health outcomes measures and includes the four HEDIS[®] Effectiveness of Care measures: the *Osteoporosis Testing in Older Women*, *Physical Activity in Older Adults*, *Management of Urinary Incontinence in Older Adults*, and *Fall Risk Management* measures. Changes in the HOS 2.5 compared to the HOS 2.0 include the following: as part of Section 4302 of the ACA (see Affordable Care Act), existing questions on race, ethnicity, sex and disability were revised; and new questions on disability and primary language were added. New questions also included IADLs (see Instrumental Activities of Daily Living) and a new rating of pain level. Two questions about vision and hearing and four questions previously used for a depression screen have been replaced with new questions. In 2014, minor modifications to the HOS 2.5 were made by revising eight questions and removing six questions.

Medicare HOS Version 3.0 (HOS 3.0)

Implemented in 2015, the HOS 3.0 contains the majority of questions from the HOS 2.5, and uses the VR-12 as the core physical and mental health outcomes measures. The HOS 3.0 includes the four HEDIS[®] Effectiveness of Care measures: the *Osteoporosis Testing in Older Women*, *Physical Activity in Older Adults*, *Management of Urinary Incontinence in Older Adults*, and *Fall Risk Management* measures. Unlike the previous versions of HOS, the new survey form uses a two column layout for each page. Other modifications in the HOS 3.0 as compared with the HOS 2.5 include the following: the HEDIS[®] questions about urinary incontinence and osteoporosis testing in older women were revised; new questions about the quality and duration of sleep in the past month were added; and one question that asked about how well the beneficiary spoke English has been revised to the primary language spoken at home.

Medicare HOS-M Beneficiary Level Data

Beneficiary level data from the HOS-M Report are distributed each summer to PACE organizations that request their data (by emailing HOS@area-M.hcqis.org). Data are made available one year after data collection. The data are provided in a CSV file and contain the survey responses and calculated fields (e.g., PCS and MCS scores). Detailed documentation regarding file construction and contents are distributed with all data sets in the accompanying Data Users Guide (DUG).

Medicare-Medicaid Coordination Office (MMCO)

Section 2602 of the ACA created the Federal Coordinated Health Care Office, also known as the Medicare-Medicaid Coordination Office (MMCO), to develop person-centered care delivery models integrating the full range of medical, behavioral health, and long-term services and supports for the dual eligible Medicare-Medicaid enrollees. The purpose of MMCO is to improve the coordination between the Federal Government and states to enhance access to needed care for the Medicare-Medicaid enrollees, while eliminating duplication of services (see Medicare-Medicaid Plan).

Medicare-Medicaid Plan (MMP)

An MMP is a demonstration plan that coordinates benefits between the Federal Government and states to provide quality health care services to beneficiaries who are enrolled in both the Medicare and Medicaid programs (Medicare-Medicaid enrollees, sometimes referred to as “dual eligible” beneficiaries). The demonstration is an integrated care model with the goal of providing the full range of medical, behavioral health, and long-term services and supports for the dual eligible beneficiaries, who often have complex and costly health care needs (see Medicare-Medicaid Coordination Office).

Medicare Star Ratings

The Medicare Star Ratings, formerly referred to as the Plan Ratings, were developed by CMS to rate the relative quality of service of MAOs based on a five-star rating scale and to reward high performing health plans. Quality measures, including five from the HOS, are collected for the Medicare Star Ratings, which are displayed in the Medicare Plan Finder (MPF) tool on <https://www.medicare.gov/find-a-plan/questions/home.aspx>.

Three HOS HEDIS[®] Effectiveness of Care rates, reported for MAOs in the HOS baseline reports and on HPMS, are used for the following Medicare Star Ratings measures:

- HEDIS[®] Treatment of Urinary Incontinence rate (*Improving Bladder Control* measure)
- HEDIS[®] Managing Fall Risk rate (*Reducing the Risk of Falling* measure)
- HEDIS[®] Advising Physical Activity rate (*Monitoring Physical Activity* measure)

Two HOS functional status measures that are reported in the HOS performance measurement reports and on HPMS are used for the following Medicare Star Ratings measures:

- Physical Health Percent Better or Same (*Improving or Maintaining Physical Health* measure)
- Mental Health Percent Better or Same (*Improving or Maintaining Mental Health* measure)

Note: Beginning with the 2019 Star Ratings, beneficiaries with a Hospice enrollment were excluded from all three HOS HEDIS measures. Information about the HOS measures and other measures used in the Medicare Star Ratings is available from the CMS website at <https://go.cms.gov/partcanddstarratings>.

Mental Component Summary (MCS) Score

The MCS score is derived from the VR-12, the core outcomes measure included in the HOS, and is a reliable and valid measure of mental health. The scores are calculated using the Modified Regression Estimate (MRE) algorithm. For the MCS, very high scores (scale 0–100) indicate frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems.

Mode of Administration

The standard HEDIS protocol for administering the HOS employs a combination of mail and telephone modes of administration. If a beneficiary fails to respond after two survey mailings, or returns a blank or incomplete mail survey, the survey vendor tries at least six telephone attempts to reach the beneficiary to obtain the survey responses (see Electronic Telephone Interviewing System).

Modified Regression Estimate (MRE)

The MRE is a method in which surveys with missing data can be scored through an imputation process. When a survey is missing data across the VR-12 items, PCS and MCS scores are 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. Depending on the pattern of missing item responses for a beneficiary, a different set of regression weights is required to compute that individual's PCS and/or MCS scores.

National Committee for Quality Assurance (NCQA)

CMS contracts with NCQA to implement the HEDIS[®] Medicare HOS, which includes managing the data collection and transmittal of the HOS, supporting the development and standardization of the HOS measure, annually training and evaluating HOS survey vendors, and conducting ongoing quality assurance of the survey process.

National Committee for Quality Assurance
1100 13th Street, NW, Third Floor
Washington, DC 20005
Website: <https://www.ncqa.org/>

Osteoporosis Testing in Older Women (OTO)

OTO is an NCQA HEDIS[®] measure collected from one HOS question that assesses the percentage of older women aged 65–85 who report ever having received a bone density test to check for osteoporosis. Osteoporosis is characterized by low bone mass and deterioration of bone strength, which lead to an increased risk of fractures. The *Osteoporosis Testing* measure was used by CMS as part of the Medicare Star Ratings from 2009–2011. Beginning with the 2012 Medicare Star Ratings, the *Osteoporosis Testing* measure is no longer a part of the Star Ratings and has been moved to the display measures at <https://go.cms.gov/partcanddstarratings>. Beginning in 2015, a change was made to limit the OTO assessment to older women age 65–85, instead of age 65 or older as in previous years. Beginning in 2017, beneficiaries with a Hospice enrollment were excluded from the *Osteoporosis Testing* display measure.

Outcome

The Medicare HOS defines outcome as a change in health status 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.

Outlier(s)	For the <i>Performance Measurement</i> analysis, MAOs with beneficiaries displaying physical or mental health characteristics that are significantly different from the HOS national average are identified as outliers. Based on the results, an MAO that is designated as “worse than expected” for a measure is a negative outlier and an MAO designated as “better than expected” is a positive outlier.
Patient Protection and Affordable Care Act (PPACA)	See Affordable Care Act (ACA)
Performance Measurement Results	Performance Measurement Results are the MAO level adjusted differences between the HOS baseline and two-year follow up scores, which are presented as better, same, or worse than expected for physical and mental health.
Personally Identifiable Information (PII)	Any information that may reveal an individual’s identity (i.e., name, Social Security Number) alone or in conjunction with other potentially identifying information that can be traced to a particular person (i.e., date of birth, place of birth). (https://www.gsa.gov/reference/gsa-privacy-program/rules-and-policies-protecting-pii-privacy-act)
Physical Activity in Older Adults (PAO)	PAO is an NCQA HEDIS [®] measure that is comprised of two HOS questions to gather data on a patient’s discussion and the management of physical activity with a doctor or other health provider. Regular leisure time physical activity includes light to moderate activity that causes only light sweating or slight or moderate increases in breathing or heart rate (i.e., activity at least 5 times per week for at least 30 minutes) or vigorous activity that causes heavy sweating or large increases in breathing or heart rate (i.e., activity at least 3 times per week for at least 20 minutes). Two rates are calculated: the Discussing Physical Activity rate and the Advising Physical Activity rate; the latter is used for the <i>Monitoring Physical Activity</i> measure reported by CMS for the Medicare Star Ratings. See Medicare Star Ratings for more details.
Physical Component Summary (PCS) Score	The PCS score is derived from the VR-12, the core outcomes measure included in the HOS, and is a reliable and valid measure of physical health. The scores are calculated using the Modified Regression Estimate (MRE) algorithm. For the PCS, very high scores (scale 0-100) indicate no physical limitations, disabilities or decline in well-being; high energy level; and a rating of health as “excellent.”

Plan Benefit Package (PBP)	A PBP is a unique benefit package within an MAO contract that provides a prescribed set of benefits to a beneficiary. PBPs may cover varying services including MA plans with Medicare Part D prescription drug coverage (MA-PD), MA plans without Part D prescription drug coverage (MA-Only), and MA plans with Part D prescription drug coverage only (PDP) which add supplementary drug coverage for beneficiaries who choose plans that lack a prescription drug benefit (such as Original Medicare, some Medicare Cost Plans, some Medicare PFFS Plans, and Medicare MSA Plans).
Plan Ratings	See Medicare Star Ratings.
Preferred Provider Organization (PPO)	<p>A PPO is a plan that (1) has a network of providers who have agreed to a contractually specified reimbursement for covered benefits; (2) provides reimbursement for all covered benefits regardless of whether the benefits are provided within the network of providers; and (3) is offered by an organization that is not licensed or organized under State law as an HMO.</p> <p>There are two types of PPOs. Local PPOs are plans that serve the counties the PPO chooses to include in its service area. Regional PPOs are plans that serve one of 26 regions established by Medicare that may include a single state or a multi-state area.</p>
Private Fee-For-Service (PFFS) Plan	A PFFS plan is offered by a state licensed risk-bearing entity that has a yearly contract with CMS to provide beneficiaries with all their Medicare benefits plus any additional benefits the company decides to provide. Beneficiaries who enroll in a PFFS MAO are not required to use a network of providers. Beneficiaries can see any provider who is eligible to receive payment from Medicare and agrees to accept payment from the PFFS MAO.
Program of All-Inclusive Care for the Elderly (PACE) Organization	A PACE organization 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. Social and medical services are delivered primarily in an adult day health center, supplemented by in-home and referral services as needed. The majority of beneficiaries are dual eligible; that is, they receive both Medicare and Medicaid coverage. PACE organizations participate in the HOS using the Medicare HOS-Modified.

Protected Health Information	Any information about health status, provision of health care, or payment for health care that is created or collected by a Covered Entity (such as a hospital or health plan), and can be linked to a specific individual. This includes any part of a patient's medical record or payment history. (https://www.hhs.gov/answers/hipaa/what-is-phi/index.html)
Proxy Respondent	An individual, such as a family member, friend, or caregiver, who completes a survey on behalf of the beneficiary.
Public Use File (PUF)	The HOS PUFs are comprised of the respondent sample for a cohort and contain responses to the majority of survey items (excluding beneficiary identifying information), as well as selected administrative variables. Two types of PUFs are available. The Baseline PUFs are available for a new cohort one year after the baseline data collection and the Analytic PUFs are available for the completed cohort one year after the follow up data collection. The files are constructed to prevent the identification of any single beneficiary or plan. HOS PUFs are available at no cost and can be downloaded from the Research Data Files section under the Data page at www.HOSonline.org .
Quality Assurance Guidelines and Technical Specifications (QAG)	Since 2016, the HOS QAGs are available in the Survey Administration section on the Program page at www.HOSonline.org . The publications detail the requirements, protocols, and procedures for the HOS administration that standardize the data collection process across the CMS-approved HOS survey vendors.
Research Data Files	Medicare HOS research data files, such as Public Use Files (PUFs), Limited Data Sets (LDSs), and Research Identifiable Files (RIFs) are available for researchers. Information about the files is available in the Research Data Files section under the Data page at www.HOSonline.org .

Research Data
Assistance Center
(ResDAC)

ResDAC, at the University of Minnesota, is a CMS contractor that assists 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 Identifiable Files (RIFs) prior to their submission to CMS. Researchers may request HOS RIFs through a CMS Data Use Agreement. For additional information and assistance, refer to the ResDAC website at <https://www.resdac.org/>. ResDAC may also be contacted by calling 1-888-9RESDAC (1-888-973-7322) between the hours of 8am to 4:30pm CST Monday through Friday or by emailing resdac@umn.edu.

Respondent Sample

Respondent samples are defined below for the two annual Medicare HOS reports:

Baseline respondent sample, for the purpose of calculating the *Baseline* response rate, is limited to eligible beneficiaries, including seniors and disabled beneficiaries, who have a baseline PCS or MCS score. For the baseline analysis, however, the *Baseline* analytic sample is limited only to eligible seniors, who have a baseline PCS or MCS score.

Performance Measurement respondent sample is limited to those seniors eligible for remeasurement who have a follow up PCS or MCS score.

Response Rate

Response rates are defined below for the two annual HOS reports:

Baseline response rate is calculated based on the number of eligible beneficiaries who have a PCS or MCS score at baseline, divided by the number of eligible beneficiaries sampled (excluding ineligible surveys).

Performance Measurement response rate is calculated based on the number of eligible beneficiaries who have a PCS or MCS score at follow up, divided by the number of eligible beneficiaries sampled (excluding ineligible surveys).

RTI International	<p>RTI International works with NCQA on the Medicare HOS Program. RTI is involved in the sample selection for each round of the Medicare HOS. RTI provides survey support in the administration of the HOS-M and assists with the calculation of ADLs for payment adjustment. Additionally, RTI is involved in research which compares HOS results in the managed care setting to those in the fee-for-service population.</p> <p>RTI International Social Policy, Health & Economics Research (SPHERE) 3040 Cornwallis Road P.O. Box 12194 Research Triangle Park, NC 27709 Website: https://www.rti.org/</p>
SAS [®]	<p>A software package used for data processing and statistical analysis.</p>
Sleep Quality	<p>Beginning with the 2015 HOS 3.0, two questions about sleep quality and duration during the past month were added to the survey. Sufficient sleep is increasingly being recognized as an essential aspect of chronic disease prevention. Insufficient sleep is associated with a number of chronic diseases and conditions—such as diabetes, cardiovascular disease, obesity, and depression. The HOS questions ask beneficiaries to rate the following:</p> <ul style="list-style-type: none"> • Average number of hours of actual sleep at night • Rating of overall sleep quality from very good to very bad
Special Needs Plan (SNP)	<p>SNPs were created by Congress in the Medicare Modernization Act (MMA) of 2003 as a new type of Medicare managed care plan focused on certain vulnerable groups of Medicare beneficiaries who require more coordinated care, such as the institutionalized (I-SNP), dual-eligibles (D-SNP), and beneficiaries with severe or disabling chronic conditions (C-SNP). These beneficiaries are sicker and frailer than most beneficiaries served through the MA program, and thus are more challenging to treat. In 2019, I-SNPs were not required to participate in the 2019 baseline survey; however, members who returned a baseline survey in 2017 were remeasured for the 2019 follow up survey.</p>
Surveillance, Epidemiology, and End Results-Medicare Health Outcomes Survey (SEER-MHOS)	<p>SEER-MHOS is a surveillance data set that links data on cancer patients to patient-reported HRQOL outcomes available in the HOS. Information about the SEER-MHOS linked data set may be found on the National Cancer Institute (NCI) SEER-MHOS Linked Database website at: https://healthcaredelivery.cancer.gov/seer-mhos/.</p>

Survey Vendor	An independent survey organization that is approved by CMS to administer the HOS Survey. NCQA conducts survey vendor training and other oversight activities. The list of HOS survey vendors is available in the Survey Vendor section under the Program page at www.HOSonline.org .
Technical Support	See HOS Website and Technical Support.
Veterans RAND 12-Item Health Survey (VR-12)	<p>The VR-12 is a generic health questionnaire developed from the Veterans Health Study, and was adapted from the RAND 36-Item Health Survey and the Medical Outcomes Study. The taxonomy underlying the construction of the VR-12 scales and summary measures is comprised of a total of 14 items. Twelve items are used to compute the eight scales that aggregate one or two items each, and the PCS and MCS scores. Two items assess change in health, one focusing on physical health and one on emotional problems. The VR-12 was used as the core outcomes measure for the Medicare HOS 2.0, the Medicare HOS 2.5, Medicare HOS 3.0, and the Medicare HOS-M.</p> <p>Information about the VR-12 instrument 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. For information about the VR-36, VR-12, and VR-6D instruments and to request permission to use the documentation and scoring algorithms for the measures, go to: https://www.bu.edu/sph/about/departments/health-law-policy-and-management/research/vr-36-vr-12-and-vr-6d/.</p>