



MARYLAND HEALTH CARE COMMISSION

**Background Paper: Implementing Quality Metrics in Review of
Home Health Agency Certificate of Need Applications**

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I. Introduction

In Maryland, a variety of licensed entities provide home care services to sick or disabled persons in their places of residence. Only one type of home care provider, the home health agency (HHA), is regulated by the Maryland Health Care Commission (MHCC) through its Certificate of Need (CON) program. MHCC adopted a new HHA Chapter of the State Health Plan (SHP), found at COMAR 10.24.16, which became effective April 11, 2016. This HHA Chapter regulates the development and expansion of HHA services in Maryland and is based on the determination by MHCC that consumers need a choice of high quality HHA providers. Because quality and performance measures are evolving, the HHA Chapter addresses the process by which quality measures are selected and performance on those measures is established. The MHCC staff posts draft quality measures and performance requirements for review and comment before the MHCC establishes the criteria as applicable to a CON review cycle. In defining a high quality provider for both qualifying a jurisdiction as well as qualifying an applicant,¹ MHCC will rely on existing quality measures publicly reported and available on the Centers for Medicare and Medicaid Services (CMS) websites.

CMS has developed a suite of Compare websites designed to be an easy-to-access, convenient source of selected information on provider quality that can assist consumers, families, and caregivers in choosing a provider. While the CMS websites span many types of Medicare-certified health care providers, only those websites relevant to the types of providers permitted to seek a CON for development of Maryland HHA services will be used.

The HHA Chapter defines a qualified CON applicant as one of three types of providers: an existing Medicare-certified HHA in Maryland; an existing Medicare-certified HHA in another state; or a non-HHA service provider currently licensed and accredited, in good standing, as a hospital, a nursing home, or a Maryland residential service agency (RSA) providing skilled nursing services. Medicare-certified HHAs, hospitals, and nursing homes are required to meet Medicare's Conditions of Participation including, but not limited to, compliance with requirements for collecting and submitting to CMS performance measures and experience of care data. Selected quality and performance measures are summarized on their respective Compare websites. Maryland RSAs are not Medicare-certified and do not collect or report to CMS on quality; therefore there is no comparable website.²

The purpose of this background paper is to generally describe the quality measures and summary star ratings publicly available on CMS Compare websites across the different types of potential CON applicants. Quality measures and star ratings are obtained from the CMS Home Health, Nursing Home, and Hospital Compare datasets available from [Medicare.data.gov](https://www.cms.gov/medicare/compare). This background paper is intended to provide context for the quality measures to be selected and performance levels to be achieved as qualifying criteria that will be used in a given CON review cycle.

¹ Qualifying a jurisdiction or multi-jurisdiction region in need of new HHA service providers is described in COMAR 10.24.16.04 and .05. Qualifying an applicant is described in COMAR 10.24.16.06.

² Under COMAR 10.24.16.04, accreditation through a State-recognized deeming authority for at least the three most recent years serves as a measure of quality performance for Maryland RSAs seeking to establish an HHA in Maryland.

II. Process/Criteria Used for Selection and Reporting of Quality Measures on CMS Compare Websites

CMS contracted with the National Quality Forum (NQF) to oversee the work needed to select and maintain performance measures for CMS' federal health care programs. Quality measures (QM) publicly reported on federal sites (CMS' Compare websites) reflect best practices in performance measurement and standards-setting. Measures displayed on the various CMS websites have been selected after years of research and rigorous testing, are nationally endorsed for public reporting, and are widely used for various quality initiatives. In addition to receiving initial endorsement, measures undergo periodic review and updating, called "measures maintenance."

Endorsement for public report by the NQF ensures QM are deemed to be: (1) important, focusing on priority areas that can have a positive impact on healthcare quality; (2) scientifically acceptable (reliable and valid); (3) useable and relevant to consumers, providers, and policy makers; and, (4) feasible to collect (readily available data retrievable without undue burden to providers and users). NQF considers several factors when deciding whether a quality measure should be publicly reported:

- Whether it addresses an aspect of care or treatment that improves people's health or well-being;
- Whether it can be measured accurately and reliably in different agencies/institutions;
- Whether the information can be used to improve the quality of care or to inform patients' decisions about where to receive care.

The NQF is an independent organization that develops and implements a strategy for health care quality measurement and public reporting. The NQF convenes a consensus process³ with stakeholders from throughout the healthcare industry to jointly determine which quality measures meet established standards.

The types of stakeholder organizations NQF brings together in its consensus process include:

- Associations of doctors, nurses, and other health professionals;
- Patient and consumer advocacy organizations (e.g. AARP);
- Health care provider organizations (e.g. The National Association of Home Care and Hospice, American Hospital Association,);
- Employers and employer coalitions;
- Health plans and insurance companies;
- Public health and community health agencies;
- Professionals involved in measuring and improving quality;
- Businesses that supply goods or services to the health care industry.

³ National Quality Forum website Consensus Development Process: http://www.qualityforum.org/Measuring_Performance/Consensus_Development_Process.aspx (accessed online June 30, 2016).

III. Types of Quality Measures

There are two broad categories of quality measures publically reported on the CMS Compare websites: process and outcome measures. Process measures evaluate the care given to the client through the use of specific evidence-based processes of care, for example, implementation of a pressure ulcer protocol. Outcome measures assess the results of health care such as how often patients had less pain when moving around, or the perceptions of the client/family receiving the care (experience of care measures, EOC). In addition to the individual quality measure rating, a subset of measures is used to develop summary star ratings. Research has shown that summary ratings make it easier for consumers to use the information to make comparisons and identify differences in quality when selecting a provider. Star ratings can also help health care facilities and providers identify areas for improvement. Language in the Affordable Care Act supports this action, calling for “transparent, easily understood information on provider quality.”⁴

The criteria used by CMS to select measures for star ratings are noteworthy, because they reflect rigorous attention to the validity and reliability of the measures, and whether the measures are able to show differences among providers:

- The measure should apply to a substantial proportion of patients and have sufficient data to report for a majority of the providers being measured.
- The measure should show a reasonable amount of variation among providers and it should be possible for a provider to show improvement in performance.
- The measure should have high face validity and clinical relevance.
- The measure should be stable and not show substantial random variation over time.

IV. CMS’ Home Health Quality Reporting Program (HHQRP)

As noted earlier, Medicare-certified HHAs are required to meet Medicare’s Conditions of Participation including, requirements for collecting and submitting to CMS quality of care and experience of care data for Medicare and Medicaid HHA clients. Medicare-certified HHAs are required to submit data on the Outcome Assessment Information Set (OASIS) and to participate in the Home Health Consumer Assessment of Healthcare Providers and Systems (HCAHPS®) Survey. In FY 2016, CMS added a specified quality reporting compliance rate that requires, in an incremental fashion over a three-year period, all Medicare-certified HHAs to achieve a compliance rate for 90 percent or more clients regarding what CMS defines as a “quality episode of care.” A quality episode of care consists of a set of two matching assessments for each patient admitted to an agency. One assessment occurs at the start or resumption of care, and the second matching assessment occurs at the end of care. For the first year (July 1, 2015 - June 30, 2016), HHAs must submit reports on at least 70 percent of their quality episodes of care or be subject to a reduction in their market basket update to their prospective payment

⁴ “Prioritizing the Public in HHS Public Reporting Measures: Using and Improving Information on Quality, Cost, and Coverage to Support Health Care Improvement, Companion Report to the National Quality Strategy” published by Department of Health & Human Services (HHS) Public Reporting of Quality and Efficiency Measures Workgroup (December 2013): <http://www.ahrq.gov/workingforquality/reports/hhsreporting.htm>

rate. Such requirements for collecting and reporting performance data for Medicare and Medicaid HHA clients will ensure the accuracy and completeness of the data, which is essential for the calculation of the quality measures. Use of standardized measures regarding quality, coupled with public reporting on CMS' Home Health Compare website, enables consumers and providers to compare quality and performance information across all Medicare-certified HHAs.

The Home Health Compare quality report information currently consists of 29 quality of care measures (QOC) with a summary star rating for those QOC measures, and five experience of care measures (EOC) with a summary star rating for those EOC measures.

Quality of Care Process and Outcome Measures

QOC measures focus on high-risk, high-volume, problem-prone areas for home health clients. These include measures pertaining to all or most home health agency clients, such as use of risk assessment tools for falls, pain, depression, and pressure ulcer development. Performance data needed to produce the quality of care measures come from two sources: the Outcome and Assessment Information Set (OASIS) and Medicare claims.

OASIS consists of data elements collected at the point of care by a home health agency that include the core items of a comprehensive assessment for a home health agency client. The combined information gathered gives a picture of a client's clinical and functional status, and use of certain therapies. The OASIS data are used for two major purposes: (1) measuring agency processes and client outcomes for calculating quality measures; and, (2) providing data to calculate provider reimbursement. While OASIS is the data source for the majority of process and outcome quality measures, Medicare claims are the data source for the four outcome measures based on health care utilization. Additional information about OASIS data collection can be found in Appendix A.

Experience of Care Measures

The experience of care (EOC) measures are the results of the HHCAHPS®, a national survey that asks clients about their recent experiences with a home health agency. The survey is conducted by registered survey vendors working under contract with HHAs and involves ongoing data collection with monthly and quarterly data submissions. Additional details about the survey can be found in Appendix B. Home health risk adjustment factors used for QOC and EOC measures are listed in Appendix C.

CMS Star Ratings

There are two star ratings; one is based on QOC measures and the other is based on EOC measures. CMS added a star rating for the QOC measures in 2015 and a star rating for EOC measures in January 2016. Star ratings summarize multiple individual measures to make it easier for consumers to use the information to make comparisons and identify differences in quality. CMS used extensive stakeholder feedback to develop the star ratings methodologies. Each of the two star ratings is calculated separately and uses different methods as described in Appendix A and Appendix B.

Specific Measures: Quality of Care (QOC)

QOC measures reported on Home Health Compare and those selected by CMS for use in its QOC star rating are shown in Table 1 below.

Table 1: Quality of Care Measures Used in Home Health QOC Star Rating

Measure Description	Star Rating Measure
Managing Daily Activities	
How often patients got better at walking or moving around	<input checked="" type="checkbox"/>
How often patients got better at getting in and out of bed	<input checked="" type="checkbox"/>
How often patients got better at bathing	<input checked="" type="checkbox"/>
Managing Pain and Treatment Symptoms	
How often patients had less pain when moving around	<input checked="" type="checkbox"/>
How often the home health team checked patients for pain	
How often the team treated their patients' pain	
How often patients' breathing improved	<input checked="" type="checkbox"/>
How often the team treated heart failure (weakening of the heart) patients' symptoms	
Treating Wounds and Preventing Pressure Sores	
How often the team checked patients for the risk of developing pressure sores	
How often the team included treatments to prevent pressure sores in the plan of care	
How often the team took doctor-ordered action to prevent pressure sores (bed sores)	
How often patients' wounds improved or healed after an operation	
Preventing Harm	
How often the team began their patients' care in a timely manner	<input checked="" type="checkbox"/>
How often the team checked patients' risk of falling	
How often the team checked patients for depression	
How often the team determined whether patients received a flu shot for the current flu season	<input checked="" type="checkbox"/>
With diabetes, how often the team got doctor's orders, gave foot care, and taught patients about foot care	
How often the team taught patients (or their family caregivers) about their drugs	<input checked="" type="checkbox"/>
How often patients got better at taking their drugs correctly by mouth	
Preventing Unplanned Hospital Care	
Acute Care Hospitalization (ACH)	<input checked="" type="checkbox"/>
Emergency Department (ED) Use without Hospitalization	
Rehospitalization during the First 30 Days of Home Health (Rehospitalization)	
ED Use without Hospital Readmission During the First 30 Days of Home Health (ED Use without Hospital Readmission)	

Note: Appendix A contains a listing of all HHA quality measures reported on Home Health Compare, and includes the measure description, measure type, source of data, whether risk adjustment is applied, update frequency, NQF measure endorsement identification, and whether the measure is used in the star rating.

Calculation of QOC Star Rating

CMS' methodology for calculating the star rating for QOC measures is based on a combination of individual measure rankings and the statistical significance of the difference between the performance of an individual HHA on each proposed measure and the performance of all HHAs nationwide. To have a QOC star rating reported on Home Health Compare, HHAs must have reported data for five of the nine measures used in the calculation. An HHA's quality measure values are compared to national averages, and its rating is adjusted to reflect the differences relative to other agencies' quality measure values. These adjusted ratings are then combined into one overall quality of care measure star rating that summarizes each of the nine (9) individual measures. CMS' step-by-step method used to calculate the QOC star rating is described in Appendix A.

Specific Measures: Experience of Care (EOC)

Consumer Assessment of Healthcare Providers and Systems Survey (CAHPS®) is one of the family of surveys that CMS requires health care providers to use to gather consumers' perspectives of their experiences with health care providers.

HHCHAPS® reports one overall measure:

Overall Rating of Care – the percentage of patients who gave a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)

And three composite measures: (a composite is a summary score given to several questions that measure the same concept):

- How often the home health team gave care in a professional way (four questions)
- How well the home health team communicated with patients and family (six questions)
- Did the home health team discuss medications, pain, and home safety? (seven questions)

Calculation of the EOC Summary Star Rating

The EOC star rating is a combination of all of the star ratings of the HHCAHPS® measures developed through several steps, as described in Appendix B.

The HHCAHPS® summary star rating is constructed from the following components:

- The three star ratings from each of the three HHCAHPS® composite measures (care given in a professional way; communication between providers and patients; and, patient-specific care issues including medications, pain, and safety); and
- A single star rating for the HHCAHPS® overall rating of care provided by the HHA.

Table 2: Experience of Care Measures Used in Home Health EOC Star Rating

HHCAHPS Summary Star Components	Star Rating Measure
Overall HHA Rating (also called the Global Item)	<input checked="" type="checkbox"/>
Communication Between Providers and Patients	<input checked="" type="checkbox"/>
Care Given in Professional Way	<input checked="" type="checkbox"/>
Team Discussed Medications, Pain, Safety	<input checked="" type="checkbox"/>
HHCAHPS Summary Star Rating (the average of the four measures above)	<input checked="" type="checkbox"/>

EOC measures from HHCAHPS®, and CMS’ methodology for calculating the HHCAHPS® summary star rating, are more fully described in Appendix B.

V. Use of Quality and Performance Measures in CON Review by Applicant Type

Consistent with the HHA Chapter, COMAR 10.24.16, there are three ways by which the MHCC selected quality measures and performance benchmarks will be used in the CON review process: (1) determining jurisdictional need; (2) qualifying an applicant for inclusion in a review cycle; and (3) determining preference, if any, among competing applicants.

The first step in the regulatory process is the determination of whether a jurisdiction needs additional HHA providers (jurisdictional need). The selected quality measure scores will be used as the factor in identifying a “quality provider.” A jurisdiction is considered to have an insufficient choice of quality providers of HHA services if HHAs serving 60 percent or more of the clients in that jurisdiction in the most recent year for which data is available, did not meet the applicable quality performance requirements designated by the Commission. Additional factors⁵ are also applied to identify jurisdictional need, consistent with COMAR 10.24.16.04.

Home Health Compare scores reflect how an agency performs across all of its authorized jurisdictions. It is not possible to measure performance in a single jurisdiction relative to an agency’s performance in another jurisdiction. Furthermore, HHAs exclusively serving pediatric and maternity patients do not submit OASIS data; therefore, no quality and performance measures are calculated for such agencies.

The second step is qualification of individual HHA applicants. Only an applicant that demonstrates the ability to perform well in the delivery of HHA services may submit an

⁵Under COMAR .10.24.16.04A(1) and (2), jurisdictional need is also present when consumers in a jurisdiction have a choice of two or fewer Medicare-certified HHAs or when a jurisdiction has a highly concentrated HHA market, as provided in the HHA Chapter

application that can be docketed for review. There are additional qualifications that must be met by an applicant in order to have an application considered in the CON review process, as provided in COMAR 10.24.16.06C and listed in Appendix F.

Furthermore, as provided in COMAR 10.24.16.09, quality and performance measures may also be used as CON preference rules in comparative reviews. Performance on quality measures is the first preference rule used to determine which among several applicants are likely to best meet the need identified. Through this process, an applicant with higher levels of performance will be given preference over an applicant with lower levels of performance. Maintenance of or improvement in performance is the second preference rule, whereby an applicant that demonstrates maintenance of or improvement in its level of performance on selected process and outcome measures during the most recent three-year reporting period will be given preference over an applicant that did not maintain or improve its performance.

Pursuant to COMAR 10.24.16.06B, an applicant may apply as one of three types of applicants: existing Medicare-certified HHA licensed in Maryland; existing Medicare-certified HHA licensed in another state; and non-HHA service providers currently licensed and accredited, in good standing, as a hospital, a nursing home, or a Maryland residential service agency (RSA) providing skilled nursing services.

Medicare-Certified HHAs in Maryland

To qualify an existing Maryland HHA as an applicant for expansion based on its performance, the HHA must demonstrate: achievement of a certain threshold level on the CMS star rating for both QOC and EOC summary ratings; and achievement of a specified threshold for a certain number of QOC measures reported on CMS' Home Health Compare for the most recent 12 month period. The HHA Chapter provides that quality measures (process, outcome, and experience of care) will be examined over time for an individual HHA and compared with statewide and national average scores to determine the threshold.

Medicare-Certified HHAs Licensed in Another State

In order for an application to be accepted from an applicant that has any common ownership with a Medicare-certified HHA in a state other than Maryland, it shall demonstrate that:

- The average rating on the CMS Star Rating system of all the Medicare-certified HHAs with which it has any common ownership met or exceeded the specified Maryland rating level; and
- The average performance level on selected process and outcome measures from CMS' Home Health Compare for the most recent 12-month reporting period of all the Medicare-certified HHAs with which it has any common ownership met or exceeded the specified Maryland rating performance level.

Quality Measures Applicable to Other CON Applicant Types

An applicant that is not currently Medicare-certified as an HHA, but licensed and accredited as a hospital, nursing home or Maryland RSA providing skilled nursing services, must submit evidence of an established quality program that systematically collects process and outcome measures comparable to Home Health Compare, and experience of care measures similar to HCAHPS®.

While there are 22 HHA quality measures and 18 Nursing Home (NH) quality measures currently reported on their respective CMS Compare websites, there are currently over 100 hospital quality measures on Hospital Compare.⁶ HHA and NH measures both largely focus on functional and clinical status and conditions common to the clients served in these settings such as pressure sore care or improvement in function. Most hospital measures differ in that they are disease or symptom focused such as heart attack care and prevention of deep vein thrombosis prevention or are focused on specialty services, such as emergency department care or coronary artery bypass graft.

Hospitals

In order for an application by a Maryland hospital applicant to be accepted, for at least the three most recent years of operation, the hospital must have achieved and maintained the minimum CMS Star Ratings required by the Commission for the applicable review cycle for all the Maryland hospitals with which it has any common ownership.

In the case of a hospital applicant that only operates a hospital or hospitals in states other than Maryland, it must, for at least the three most recent years of operation, on average, achieved and maintained the minimum CMS Star Rating required by the Commission for the applicable review cycle for all the hospitals with which it has any common ownership.

The source of the data for the hospital star rating is the patient experience of care survey which is administered to a sample of discharged hospital patients. Data is collected by registered vendors under contract to hospitals and submitted to CMS quarterly to be updated.

CMS recently (July 2016) changed the hospital star rating which now combines QOC and EOC metrics into one hospital star rating. However, Maryland's hospital quality of care metrics and combined star rating are not available on Hospital Compare. For this reason, for the upcoming HHA CON review cycle for hospital applicants, staff is proposing to use what is available for Maryland hospitals -- the Hospital EOC Star Rating based on HCAHPS.

⁶ These measures reflect reporting as of July 2016: HCAHPS® Star Ratings Technical Notes. <http://www.hcahpsonline.org> Centers for Medicare & Medicaid Services, Baltimore, MD (posted July 21, 2016).

The HCAHPS® Summary Star Rating is constructed from the following components⁷:

- The Star Ratings from each of the seven HCAHPS® Composite Measures: Communication with Nurses, Communication with Doctors, Responsiveness of Hospital Staff, Pain Management, Communication about Medicines, Discharge Information, and Care Transition.
- A single Star Rating for the HCAHPS® Individual Items: The average of the Star Ratings assigned to Cleanliness of Hospital, Environment, and Quietness of Hospital Environment.
- A single Star Rating for the HCAHPS® Global Items: The average of the Star Ratings assigned to Hospital Rating and Recommend the Hospital.
- The nine Star Ratings (seven Composite Measure Star Ratings + Star Rating for Individual Items + Star Rating for Global Items) are combined as a simple average to form the HCAHPS® Summary Star Rating.
- In the final step, normal rounding rules are applied to the nine-measure average to arrive at the HCAHPS® Summary Star Rating (1, 2, 3, 4, or 5 stars).

The hospital star rating methodology consists of a number of steps. A step-by-step description of the methodology is in Appendix D.

Nursing Homes

The Nursing Home Compare site was introduced in 2002. Quality measures reported on Nursing Home Compare have undergone several revisions, changes, and additions since its inception.

For CON review, a Maryland nursing home applicant seeking to establish an HHA in Maryland must have, for at least the three most recent years of operation, achieved and maintained the minimum CMS Star Ratings required by the Commission for the applicable review cycle for its Maryland nursing home and, on average, for all the Maryland nursing homes with which it has any common ownership; or

A nursing home applicant that only operates a nursing home or nursing homes in states other than Maryland must have, for at least the three most recent years of operation, on average, achieved and maintained the minimum CMS Star Rating required by the Commission for the applicable review cycle of all the nursing homes with which it has any common ownership.

As described below, Nursing Home Compare reports: 15 measures applicable to long-stay residents; nine measures applicable to short-stay (stays less than or equal to 100 days) residents; and four star ratings.

The source of the nursing home star rating data is the Minimum Data Set (MDS) which, like OASIS, is a resident level data set. It provides the data for many of the quality of care measures for the Nursing Home Compare site. MDS is a comprehensive assessment, completed at defined intervals for nursing home residents, that has been in use for nearly three decades.

⁷ HCAHPS® Star Ratings Technical Notes:
<http://www.hcahponline.org/WhatsNew.aspx#TechnicalNotes> Centers for Medicare & Medicaid Services, Baltimore, MD (posted July 21, 2016).

There are six outcome measures that are obtained from Medicare claims; the remainder are from MDS.

The nursing home star rating consists of four components. Each component receives a separate star rating. The overall summary star rating is calculated from the first three components' star ratings. The four components are:

- Health Inspections – The rating contains information from the last three years of onsite inspections, including standard and complaint surveys. This information is gathered by trained inspectors who go to the nursing home and follow a specific process to determine the extent to which a nursing home has met Medicaid's and Medicare's minimum quality requirements. Deficiency findings during each survey and revisit are weighted by scope and severity to determine a score. The most recent survey findings are weighted more than the prior two years.
- Staffing – Information is collected about the number of hours of care provided on average to each resident each day by nursing staff. The staffing rating is based on two measures: (1) Registered Nurse (RN) hours per resident per day; and (2) total staffing hours per resident per day. Total staffing includes: RNs; Licensed Practical Nurses (LPNs) or Licensed Vocational Nurses (LVNs); and Certified Nurse Aides (CNAs). Staffing data are submitted by the facility and are adjusted by CMS for the needs of the nursing home residents.
- Quality Measures (QMs) – The quality measure rating displayed on Nursing Home Compare has information on 11 different physical and clinical measures for nursing home residents. The QMs present information about how well nursing homes are caring for their residents' physical and clinical needs.
- Overall Summary Star Rating – This rating is calculated from the health inspections, staffing, and quality measures ratings described above.

For a more comprehensive description of CMS' nursing home star rating methodology, please refer to Appendix E.

Only the measures included in the nursing home star rating are listed below:

Short-Stay⁸ Quality Measures:

- Percentage of short-stay residents who self-report moderate to severe pain.
- Percentage of short-stay residents with pressure ulcers that are new or worsened.
- Percentage of short-stay residents who newly received an antipsychotic medication.
- Percentage of short-stay residents who have had an outpatient emergency room visit.
- Percentage of short-stay residents who were successfully discharged to the community, and did not die or were readmitted to a hospital or skilled nursing facility within 30 days of discharge.

⁸ Note: Short-stay quality measures include all residents in an episode whose cumulative days in the facility is less than or equal to 100 days at the end of the target period.

- Percentage of short-stay residents who were re-hospitalized after SNF admission, including observation stays.
- Percentage of short-stay residents who made improvement in physical function and locomotion.
- Percentage of short-stay residents who were re-hospitalized after a nursing home admission (claims-based data source).
- Percentage of short-stay residents who made improvements in function (MDS-based data source).

Long-Stay Quality Measures

- Percentage of long-stay residents experiencing one or more falls with major injury.
- Percentage of long-stay residents who self-report moderate to severe pain.
- Percentage of long-stay high-risk residents with pressure ulcers.
- Percentage of long-stay residents with a urinary tract infection.
- Percentage of long-stay residents who have/had a catheter inserted and left in their bladder.
- Percentage of long-stay residents who were physically restrained.
- Percentage of long-stay residents whose need for help with activities of daily living has increased.
- Percentage of long-stay residents whose ability to move independently worsened (MDS-based data source).
- Percentage of long-stay residents who received an antianxiety or hypnotic medication (MDS-based data source).

Maryland Residential Service Agencies (RSAs) Providing Skilled Nursing Services

As noted earlier, Maryland RSAs are a Maryland-specific license and are not eligible to be Medicare-certified. There is no standard assessment tool comparable to OASIS or MDS for collection of RSA data, nor are there standardized metrics for measuring quality performance. Therefore, accreditation through a State-recognized deeming authority (which requires establishment of a quality assurance program including collection of data) for at least the three most recent years serves as a measure of quality performance for Maryland RSAs seeking to establish an HHA in Maryland.

VII. Use of CMS Compare Quality Measures in Value-Based Purchasing Initiatives

Promoting the delivery of high quality healthcare services is a priority for CMS. To further this aim, a variety of value-based purchasing (VBP) initiatives have been implemented or are active demonstration projects. VBP links financial incentives to performance on a set of defined measures. While a VBP program in itself has significance to the provider and community, its importance lies in the use of shared quality measures between VBP and the CON quality-focused approach.

The U.S. Department of Health and Human Services (HHS) is advancing the implementation of value-based purchasing (VBP) across an array of health care settings in the Medicare program

in response to requirements in the 2010 Patient Protection and Affordable Care Act. VBP refers to a broad set of performance-based payment strategies that link financial incentives to providers' performance on a set of defined measures in an effort to achieve better value by driving improvements in quality and slowing the growth in health care spending.⁹

The Hospital VBP has been in place since 2013; the Skilled Nursing Facility (NH) VBP is in testing mode and is scheduled to be implemented in FY 2019.

A Home Health VBP Initiative is a model demonstration that began in January 2016 to test whether payment incentives for better quality care can improve outcomes in the delivery of home health services. Maryland is one of nine states selected to participate in the demonstration.

⁹ *Measuring Success in Health Care Value-Based Purchasing Programs, Summary and Recommendations*, Damberg, et.al, RAND Corporation, 2014.

VIII. Appendices¹⁰

¹⁰ Unless otherwise noted, information in appendices comes from applicable CMS Compare websites.

Appendix A: HHA Quality of Care Measures and Star Rating Methodology

Measure Description	Star Rating Measure	Measure Type	Source of Data	Risk Adjusted	Update Frequency	NQF Endorsed	VBP Measure
Managing Daily Activities							
How often patients got better at walking or moving around	Yes	Outcome	OASIS	Yes	Quarterly	NQF 0167	Yes
How often patients got better at getting in and out of bed	Yes	Outcome	OASIS	Yes	Quarterly	NQF 0175	Yes
How often patients got better at bathing	Yes	Outcome	OASIS	Yes	Quarterly	NQF 0174	Yes
Managing Pain and Treatment Symptoms							
How often patients had less pain when moving around	Yes	Outcome	OASIS	Yes	Quarterly	NQF 0177	
How often the home health team checked patients for pain		Process	OASIS		Quarterly	NQF 0523	
How often the team treated their patients' pain			OASIS		Quarterly	NQF 0524	
How often patients' breathing improved	Yes	Outcome	OASIS	Yes	Quarterly	NQF 0179	Yes
How often the team treated heart failure (weakening of the heart) patients' symptoms		Process	OASIS		Quarterly	NQF 0521	
Treating Wounds and Preventing Pressure Sores							
How often the team checked patients for the risk of developing pressure sores		Process	OASIS		Quarterly	NQF 0540	
How often the team included treatments to prevent pressure sores in the plan of care		Process	OASIS		Quarterly	NQF 0538	
How often the team took doctor-ordered action to prevent pressure sores (bed sores)		Process	OASIS		Quarterly	NQF 0539	
How often patients' wounds improved or healed after an operation		Outcome	OASIS	Yes	Quarterly	NQF 0178	

Appendix A (continued)

Measure Description	Star Rating Measure	Measure Type	Source of Data	Risk Adjusted	Update Frequency	NQF Endorsed	VBP Measure
Preventing Harm							
How often the team began their patients' care in a timely manner	Yes	Process	OASIS		Quarterly	NQF 0526	
How often the team checked patients' risk of falling		Process	OASIS		Quarterly	NQF 0537	
How often the team checked patients for depression		Process	OASIS		Quarterly	NQF 0518	
How often the team determined whether patients received a flu shot for the current flu season	Yes		OASIS		Quarterly	NQF 0522	Yes
With diabetes, how often the team got doctor's orders, gave foot care, and taught patients about foot care			OASIS		Quarterly	NQF 0519	
How often the home health team taught patients (or their family caregivers) about their drugs	Yes	Process	OASIS		Quarterly	NQF 0520	Yes
How often patients got better at taking their drugs correctly by mouth		Outcome	OASIS	Yes	Quarterly	NQF 0176	Yes
Preventing Unplanned Hospital Care							
Acute Care Hospitalization (ACH)	Yes	Outcome	Medicare Claims	Yes	Quarterly	NQF 0517	Yes
Emergency Department (ED) Use without Hospitalization		Outcome	Medicare Claims	Yes	Quarterly	NQF 0173**	Yes
Rehospitalization during the First 30 Days of Home Health (Rehospitalization)		Outcome	Medicare Claims	Yes	Quarterly	NQF 3280	
ED Use without Hospital Readmission During the First 30 Days of Home Health (ED Use without Hospital Readmission)		Outcome	Medicare Claims	Yes	Quarterly	NQF 2505	Yes

HHA Quality Measures

HHAs must have at least 20 complete quality episodes for data on a measure to be reported on Home Health Compare. OASIS data is not collected for patients under age 18 years, patients receiving pre- and post-partum maternity services, and patients receiving only chore and housekeeping services. A quality episode of care consists of a set of two matching assessments for each patient admitted to an agency. One assessment occurs at the start of care or resumption of care, and the second matching assessment would occur at the end of care. The home health measures are publically reported on the CMS Home Health Compare website and are updated on a quarterly basis.

HHA Star Rating Calculation Quality of Care (QOC) Measures

The methodology for calculating the Quality of Patient Care Star Ratings is based on a combination of individual measure rankings and the statistical significance of the difference between the performance of an individual HHA on each measure (risk-adjusted, if an outcome measure) and the performance of all HHAs. Each HHA's quality measure scores are compared to the national agency median, and its rating is adjusted to reflect the differences relative to other agencies' quality measure scores. These adjusted ratings are then combined into one overall rating that summarizes agency performance across all 9 individual measures. The specific steps are as follows:

1. First, all HHAs' scores on each of the 9 quality measures are sorted low to high and divided into 10 approximately equal size groups (deciles) of agencies.¹ For all measures, except acute care hospitalization, a higher measure value means a better score.

2. Each HHA's score on each measure is then assigned its decile location, e.g. bottom tenth, top tenth, etc., as a preliminary rating. Each decile is assigned an initial rating from 0.5 to 5.0 in 0.5 increments (e.g., 0.5, 1.0, 1.5, 2.0, etc.)

3. The initial rating is then adjusted according to the statistical significance of the difference between the agency's individual quality measure score and the national agency median for that quality measure. Because all the measures are proportions (e.g., proportion of patients who improved in getting in and out of bed), the calculation uses a binomial significance test. If the agency's initial rating for a measure is anything other than a 2.5 or 3 (the two middle decile categories), and the binomial test of the difference yields a probability value greater than .05 (meaning that the difference between the agency score and the national agency median is not considered statistically significant), the initial rating is adjusted to the next half star level closer to the middle categories. The results of this transformation are referred to as the "adjusted ratings."

4. To obtain one overall score for each HHA, the adjusted ratings are averaged across the 9 measures and rounded to the nearest 0.5. An overall star rating is then assigned to each agency so that ratings will range from 1 to 5 in half star increments (see table below). Thus, there are 9 star categories, with 3.0 stars being the middle category in this distribution.

The table below shows the national distribution:

¹The cut points for the deciles are generated in SAS® using the RANK procedure.

Overall score after averaging across QMs and rounding to the nearest half star	Quality of Patient Care Star Rating
4.5 and 5.0	5
4.0	4.5
3.5	4.0
3.0	3.5
2.5	3.0
2.0	2.5
1.5	2.0
1.0	1.5
0.5	1

For more details, please see the “Quality of Patient Care Star Ratings Methodology” report, which is available in the “Downloads” section on the HH Star Ratings web page: <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/HHQIHomeHealthStarRatings.html>

Appendix B. HHA Experience of Care Measures and Star Rating Methodology

HHCAHPS	Star Rating Measure	Type of Measure	Source of Data	Risk Adjusted	Update Frequency	NQF ID	VBP Measure
Care of Patients	Y	Outcome	Patient Survey	Yes	Quarterly	NQF 0517	Yes
Communication Between Providers and Patients	Y	Outcome	Patient Survey	Yes	Quarterly	NQF 0517	Yes
Specific Care Issues	Y	Outcome	Patient Survey	Yes	Quarterly	NQF 0517	Yes
HHCAHPS Global Item	Y	Outcome	Patient Survey	Yes	Quarterly	NQF 0517	Yes
Overall Rating of Care	Y	Outcome	Patient Survey	Yes	Quarterly	NQF 0517	Yes

Note: An HHA may request an exemption from participating in the HHCAHPS® survey if it served fewer than 60 survey-eligible clients for the reporting year. This generally occurs for newer agencies that are building a client base.

Star Rating Methodology

The HHCAHPS® Summary Star Rating is constructed from the following components:

- The three Star Ratings from each of the three HHCAHPS® composite measures: Care of Patients, Communication Between Providers and Patients, Specific Care Issues.
and
- A single Star Rating for the HHCAHPS® Overall Rating of Care Provided by the HHA

HHCAHPS Summary Star Components	Star Rating Measure
Overall HHA Rating (also called the Global Item)	<input checked="" type="checkbox"/>
Communication Between Providers and Patients	<input checked="" type="checkbox"/>
Care Given in Professional Way	<input checked="" type="checkbox"/>
Team Discussed Medications, Pain, Safety	<input checked="" type="checkbox"/>
HHCAHPS Summary Star Rating (the average of the four measures above)	<input checked="" type="checkbox"/>

Appendix B (continued): HHA Experience of Care Measures and Methodology of HHCAHPS® Star Ratings¹⁸

The Patient Survey star ratings are derived from HHA patient surveys. The HHCAHPS® Survey is implemented by independent CMS-approved survey vendors that are not affiliated with HHAs and that do not provide home health services. Thus, the data are not self-reported by HHAs.

HHCAHPS® star ratings are assigned in a way that minimizes differences within groups and maximizes differences between groups. The clustering algorithm empirically determines the number of home health agencies in each star rating category independently for each measure.

Calculating the HHCAHPS® star ratings for the four HHCAHPS® measures (the three composites and the overall rating) is a multistep process. First, the responses to the HHCAHPS® Survey items are combined and converted to a 0-100 score, which is called the “Linear Score.” The 0-100 linear score is then adjusted for the effects of patient mix.

To make this adjustment, CMS applies the patient-mix adjustment to quarterly HHCAHPS® scores to account for the tendency of certain patient subgroups to respond more positively or negatively to the HHCAHPS® Survey. Next, the four-quarter averages of HHCAHPS® linear scores are rounded to whole integers using standard rounding rules.

CMS assigns 1, 2, 3, 4, or 5 stars for each HHCAHPS® measure by applying statistical methods that analyze the relative distribution of scores. The star rating for each of the four HHCAHPS® measures is determined by applying a clustering algorithm to the individual measure scores across home health agencies that minimize differences in scores within star groups and maximizes differences in scores between star groups.

This clustering methodology used is the same methodology that is used for Hospital CAHPS® on Hospital Compare. For more details, please see the [Technical Notes for HHCAHPS star ratings](https://homehealthcahps.org/Portals/0/HHCAHPS_Stars_Tech_Notes_5_7_15.pdf) on https://homehealthcahps.org/Portals/0/HHCAHPS_Stars_Tech_Notes_5_7_15.pdf.

Home Health Agencies Included in Star Ratings

Agencies must have 40 or more surveys completed during the reporting period to receive HHCAHPS® star ratings. Nationally, about two-thirds of home health agencies have HHCAHPS® star ratings for the designated reporting period. Agencies with fewer than 40 completed HHCAHPS® surveys do not have enough data to reliably measure true agency performance and, consequently, do not have enough data to assign HHCAHPS® star ratings. Caseloads at some agencies may vary, and they may meet the threshold of 40 or more surveys for some reporting periods but not for all reporting periods. CMS continually updates Home Health Compare, and all of its Compare websites, so those HHAs that do not currently have patient experience star ratings may have star ratings in the future.

¹⁸ For more information about the HHCAHPS survey, go to the official HHCAHPS website, <https://homehealthcahps.org/search.html>.

Appendix C: Home Health Measures' Risk Adjustment Methods

1. **Utilization measures** are risk-adjusted using a predictive model that incorporates five categories of risk factors, including the patients' prior care setting, age and sex interactions, health status, Medicare enrollment status and other interaction terms (e.g., a patient with chronic heart failure and chronic obstructive pulmonary disease).
2. **Other outcome measures** are risk-adjusted using a predictive model developed specifically for each measure that compensates for differences in the patient population served by different home health agencies, essentially a case mix methodology.
3. **Process Measures** no adjustment
4. **Patient Experience of Care Measures** are adjusted for patient characteristics, such as age, education, survey answered by proxy, patient lives alone, self-reported health/mental status, language in which the survey was completed.

Appendix D: HCAHPS Star Rating Methodology for Hospitals

1. HCAHPS responses are first converted to linear mean scores and then adjusted for patient mix and mode of survey administration.
2. Next, a clustering algorithm groups hospitals into five star categories for each HCAHPS measure. HCAHPS Star Ratings are assigned in a way that minimize differences within groups and maximize differences between star groups. The clustering algorithm empirically determines the number of hospitals in each star rating category independently for each HCAHPS measure. Linear mean scores incorporate the full range of survey response categories into a single metric for each HCAHPS measure.
3. Linear mean scores and Top-Box scores are alternative, statistically valid methods for summarizing HCAHPS performance. “Top-Box” scores consist of only the most positive response to HCAHPS Survey items. Please note that Hospital Compare reports top-box, middle-box and bottom-box scores for all HCAHPS measures. See <http://www.medicare.gov/hospitalcompare/search.html>. For more information on linear mean scores, please see [Technical Notes for HCAHPS Star Ratings](#).
4. A Star Rating is calculated for each of the seven HCAHPS composite measures:
 - Communication with Nurses (Q1, Q2, Q3)
 - Communication with Doctors (Q5, Q6, Q7)
 - Responsiveness of Hospital Staff (Q4, Q11)
 - Pain Management (Q13, Q14)
 - Communication about Medicines (Q16, Q17)
 - Discharge Information (Q19, Q20)
 - Care Transition (Q23, Q24, Q25)
5. A Star Rating is calculated for each of two HCAHPS Individual Items:
 - Cleanliness of Hospital Environment (Q8)
 - Quietness of Hospital Environment (Q9)
6. A Star Rating is calculated for each of two HCAHPS Global Items
 - Overall Hospital Rating (Q21) —
 - Recommend the Hospital (Q22)
7. Lastly a HCAHPS Summary Star Rating is calculated from the ratings 1, 2, 3 listed above. The HCAHPS Summary Star Rating combines (rolls-up) all of the HCAHPS Star Ratings into a single Star Rating.

Note: Hospital CAHPS (HCAHPS) are adjusted for the effects of both mode of survey administration (mail only, phone only, mixed (mail & phone), and IVR) and patient-mix. Generally speaking, HCAHPS adjustments for survey mode are larger than adjustments for patient-mix. The HCAHPS patient mix characteristics are: self-reported health status, education, service line, age, ER admission source, response percentile, and primary language other than English. Patient mix adjustment is conducted first followed by the mode adjustment. Additional details about the development of mode and patient mix adjustments can be found at <http://www.hcahponline.org/modeadjustment.aspx#ModeAdj>.

Appendix E: Nursing Home Star Rating Methodology

A brief description of the star rating methodology is given below:

1. Combine the values on 16 QMs (a subset of the 24 QMs listed on Nursing Home Compare) to create the QM rating. QMs are derived from clinical data reported by the nursing home.

Note: five of the MDS-based QMs (mobility decline, catheter, long-stay pain, short-stay functional improvement, and short-stay pressure ulcers) are risk adjusted method first using resident-level covariates that adjust for resident factors associated with differences in the performance on the QM. For example, the catheter risk-adjustment model takes into account whether or not residents had bowel incontinence or pressure sores on the prior assessment. The claims-based measures used in these analyses are risk adjusted using patient mix items from claims preceding the start of the nursing home stay and information from the MDS assessment associated with the nursing home stay. Next a facility-level adjusted QM score is calculated by combining the facility-level expected score and the facility-level observed score.

2. Assign the overall 5-star rating in these steps:

Step 1: Start with the health inspections rating.

Step 2: Add 1 star if the staffing rating is 4 or 5 stars and greater than the health inspections rating. Subtract 1 star if the staffing rating is 1 star.

Note: The staffing component of the nursing home star rating is adjusted for patient acuity.

Step 3: Add 1 star if the quality measures rating is 5 stars; subtract 1 star if the quality measures rating is 1 star.

Step 4: If the health inspections rating is 1 star, then the overall rating cannot be upgraded by more than 1 star based on the staffing and quality measure ratings.

Step 5: If a nursing home is a special focus facility, the maximum overall rating is 3 stars.

Full details of nursing home risk adjustment can be found in the MDS 3.0 QM Users Manual (V10) located at <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/Downloads/.pdf>

Neither a family nor resident experience of care survey (EOC) has been required to be reported. A short stay EOC designed for nursing home residents with a stay of 100 days or less is endorsed by NQF, but is not accepted for report on Nursing Home Compare.

Appendix F: Qualifications for All Applicants (COMAR 10.24.16.06C)

Additional requirements to determine qualified applicants:

- (1) Has not had its Medicare or Medicaid payments suspended within the last five years;
- (2) Has not been convicted of Medicare or Medicaid fraud or abuse within the last ten years;
- (3) Has received at least satisfactory findings reflecting no serious adverse citations on the most recent two survey cycles from its respective state agency, accreditation organization, or both, as applicable to the type of applicant;
- (4) Has maintained accreditation through a state-recognized deeming authority, as applicable, for at least the three most recent years;
- (5) Has submitted an acceptable plan of correction for any valid and serious patient-related complaint investigated over the past three years;
- (6) Has complied with all applicable federal and State quality of care reporting requirements and performance standards;
- (7) Can document availability of sufficient financial resources to implement the proposed project within the applicable timeframes set forth in the Commission's performance requirements at COMAR 10.24.01.12;
- (8) Demonstrates a record of serving all applicable payer types, such as Medicare, Medicaid, private insurance, HMOs, and self-pay patients; and
- (9) Affirms under penalties of perjury, that within the last ten years, no owner or senior management, or owner or senior management of any related or affiliated entity, has been convicted of a felony or crime or pleaded guilty, nolo contendere, entered a best interest plea of guilty, or received a diversionary disposition regarding a felony or crime.