Home Health Quality Reporting Program Measure Calculations and Reporting User's Manual

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Chapter 1. Manual Organization and Measures

The purpose of this manual is to present the methods used to calculate quality measures that are included in the Centers for Medicare & Medicaid Services' (CMS) Home Health (HH) Quality Reporting Program (QRP), including all measures finalized for the Calendar Year 2023 HH QRP.[1] Quality measures are tools that help measure or quantify healthcare processes, outcomes, patient or resident perceptions and organizational structure/systems that are associated with the ability to provide high-quality services related to one or more quality goals.[2] This manual provides detailed information for each quality measure, including quality measure definitions, inclusion and exclusion criteria and measure calculation specifications. An overview of the HH QRP and additional information pertaining to public reporting is publicly available and can be accessed through the HH QRP website.[3] Outlined below is the organization of this manual and an overview of the information found in each section.

This manual is organized by chapter, and each chapter contains sections that provide additional details. **Chapter 1** presents the purpose of the manual, explaining how the manual is organized. The remaining chapters are organized by quality measure and provide detailed information about measure specifications and reporting components. **Chapter 2** identifies the claims-based measures. **Chapter 3** presents the selection logic used to construct home health quality episodes records for the assessment-based quality measures that rely on the Outcome and Assessment Information Set (OASIS). **Chapter 4** describes the three types of Internet Quality Improvement and Evaluation System (iQIES) data reports for the OASIS-based quality measures: iQIES Review and Correct reports, iQIES Quality Measure (QM) reports and preview reports for Home Health Compare. iQIES QM Reports are separated into two, one containing measure information at the agency-level and another at the patient-level. Following the discussion of quality measure specifications for each report, information is presented in table format to illustrate the report calculation month, reporting quarters and the months of data that are included in each monthly report. **Chapter 5** describes the methods used to calculate the OASIS-based measures that are not risk-adjusted, and **Chapter 6** describes the methods used to calculate the risk-adjusted OASIS-based measures. **Chapter 7** provides the measure logical specifications for each of the quality measures calculated from the OASIS in table format. Table 1-1, below, lists the HH QRP measures calculated using patient assessment data that are included in the manual. **Appendix A** includes covariate values and means used to calculate the OASIS-based risk-adjusted measures.

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1 This manual is specific to the HH QRP. The technical specifications and measure descriptions (tables) for all HH QM measures are available on https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html

2 Centers for Medicare & Medicaid Services. (April 2022). Quality Measures. Accessed on November 22, 2022. Available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html

3 The HH QRP website can be found at the following link: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/index.html

Table 1-1. Home Health Assessment-Based (OASIS) Quality Measures Reference: HH QRP

Measure Reference Name	CMS ID	NQF[4] #	Quality Measure Description
Timely Initiation of Care	0196-10	0526*	How often the home health team began their patients' care in a timely manner.
Influenza Immunization Received for Current Flu Season	0212-10	0522	How often the home health team made sure that their patients have received a flu shot for the current flu season.
Drug Education	2705-10	NA	How often the home health team taught patients (or their family caregivers) about their drugs.
Drug Regimen Review Conducted With Follow-Up for Identified Issues- Post Acute Care (PAC) HH QRP	2946-10	NA	How often physician-recommended actions to address medication issues were completed timely
Application of Percent of Long-Term Care Hospital (LTCH) Patients with an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function	5853-10	2631	How often a patient's functional abilities were assessed at admission and discharge and functional goals were included in their care plan.
Transfer of Health Information to the Patient	3496-10	NA	How often transfer of health information to the patient occurs after their discharge from home health to a home or community-based setting.
Transfer of Health Information to the Provider	5652-10	NA	How often transfer of health information to the provider occurs after their discharge from home health to an eligible clinical setting
Improvement in Ambulation-Locomotion	0183-11	0167	How often patients got better at walking or moving around.
Improvement in Bed Transferring	1000-11	0175	How often patients got better at getting in and out of bed.
Improvement in Bathing	0185-11	0174	How often patients got better at bathing.
Improvement in Management of Oral Medications	0189-11	0176	How often patients got better at taking their drugs correctly by mouth.
Improvement in Dyspnea	0187-11	0179*	How often patients' breathing improved.
Application of Percent of Residents Experiencing One or More Falls with Major Injury	3493-10	0674	How often patients experienced one or more falls with major injury
Changes in Skin Integrity Post Acute Care: Pressure Ulcer/Injury	5852-11	NA	How often patients have pressure ulcers/pressure injuries that are new or worsened.

* - The following measure was previously approved or given time limited endorsement by the National Quality Forum (NQF) but has been withdrawn from NQF submission

[4] NQF: National Quality Forum

Table 1-2. Home Health Assessment-Based (OASIS) Quality Measures Reference: Removed from HH QRP

Quality Measure	CMS ID	Measure Reference Name	Removal Date from Review & Correct	Removal Date from Preview Report	Removal Date from HHC
Drug Education on All Medications Provided to Patient/Caregiver	2705-10	How often the home health team taught patients (or their family caregivers) about their drugs	1/1/2024	July 2023	October 2023
Depression Assessment Conducted	0198-10	How often the home health team checked patients for depression.	5/15/20	October 2020	July 2021
Multifactor Fall Risk Assessment Conducted for All Patients who Can Ambulate NQF	0952-10	How often the home health team checked patients' risk of falling.	5/15/20	October 2020	July 2021
Diabetic Foot Care and Patient / Caregiver Education Implemented during All Episodes of Care	0958-10	For patients with diabetes, how often the home health team got doctor's orders, gave foot care, and taught patients about foot care.	5/15/20	October 2020	July 2021
Pneumococcal Vaccine Ever Received	0214-10	How often the home health team made sure that their patients have received a pneumococcal vaccine (pneumonia shot).	5/15/20	October 2020	July 2021
Improvement in Status of Surgical Wounds	0193-10	How often patients' wounds improved or healed after an operation.	5/15/20	October 2020	July 2021
New or Worsened Pressure Ulcers	4803-10	Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened.	1/1/20	July 2020	October 2020

Quality Measure	CMS ID	Measure Reference Name	Removal Date from Review & Correct	Removal Date from Preview Report	Removal Date from HHC
Improvement in Pain Interfering with Activity	0191-10	How often patients had less pain when moving around.	N/A	January 2020	April 2020

Table 1-3. Home Health Claims-based Quality Measures Reference: HH QRP

Measure Reference Name	CMS ID	NQF[5] #	Quality Measure Description
Acute Care Hospitalization During the First 60 Days of Home Health	0180-10	0171	Percentage of home health stays in which patients were admitted to an acute care hospital during the 60 days following the start of the home health stay.
Emergency Department Use Without Hospitalization During the First 60 days of Home Health	0182-10	0173	Percentage of home health stays in which patients used the emergency department but were not admitted to the hospital during the 60 days following the start of the home health stay.
Discharge to Community	02944-10	3477	Percentage of home health stays in which patients were discharged to the community and do not have an unplanned admission to an acute care hospital or LTCH in the 31 days following discharge to community, and remain alive in the 31 days following discharge to community.
Medicare Spending Per Beneficiary - Post-Acute Care Home Health Measure	2943-10	NA	The assessment of the Medicare spending of a home health agency's MSPB-PAC HH episodes, relative to the Medicare spending of the national median home health agency's MSPB-PAC HH episodes across the same performance period.
Potentially Preventable 30-Day Post-Discharge Readmission Measure	2945-10	NA	Percentage of home health stays in which patients who had an acute inpatient discharge within the 30 days before the start of their home health stay and were admitted to an acute care hospital or LTCH for unplanned, potentially preventable readmissions in the 30-day window beginning two days after home health discharge.
Home Health Within-Stay Potentially Preventable Hospitalization	2946-10	NA	Home health agency (HHA)-level rate of risk-adjusted potentially preventable hospitalization (PPH) or potentially preventable observation stays (PPOBS) that occur within a home health (HH) stay for all eligible stays at each agency. A HH stay is a sequence of HH payment episodes separated from other HH payment episodes by at least two days.

[5] NQF: National Quality Forum

Chapter 2. Medicare Claims-Based Measures

CMS utilizes a range of data sources to calculate quality measures. The quality measures listed below were developed using Medicare claims data submitted for Medicare fee-for-service (FFS) patients. Each measure is calculated using unique specifications and methodologies specific to the quality measure using data available from FFS claims. Information regarding measure specifications and reporting details is publicly available and can be accessed on the HH Quality Reporting Measures Information website. Below are the Medicare claims-based measures included in the HH QRP and hyperlinks that provide information about each measure, including measure descriptions and definitions, specifications (e.g. numerator, denominator, exclusions, and calculations) and risk-adjustment:

Potentially Preventable 30-Day Post-Discharge Readmission Measure for Home Health Quality Reporting Program (CMS ID: 2945-10)

The potentially preventable readmission (PPR) measure for the post-acute care (PAC) HH QRP estimates the risk-standardized rate of unplanned, potentially preventable readmissions for patients (Medicare FFS beneficiaries) who receive services from a home health agency (HHA). This outcome measure reflects readmission rates for patients who are readmitted to a short-stay acute-care hospital or an LTCH with a principal diagnosis considered to be unplanned and *potentially preventable*.

This measure assesses PPR within a 30-day window following discharge from PAC HHA and was developed to meet the *resource use and other measures* domain as mandated by the IMPACT Act.

The measure calculates a risk-adjusted PPR rate for a HHA. This is derived by first calculating a standardized risk ratio -- the predicted number of readmissions at the PAC provider (HHA) divided by the expected number of readmissions for the same patients if treated at the average PAC provider. The standardized risk ratio is then multiplied by the mean readmission rate in the population (i.e., all Medicare FFS patients included in the measure) to generate the PAC provider-level standardized readmission rate of potentially preventable readmissions. For this PPR measure, readmissions that are usually for planned procedures are not counted as being potentially preventable.

Specifications for this measure can be found on the CMS website:
https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/MeasureSpecificationsForCY17-HH-QRP-FR_updated_8_2 018.pdf

Discharge to Community -Post Acute Care (PAC) Home Health Quality Reporting Program (CMS ID:2944-10)

This claims-based outcome measure assesses successful discharge to the community from a PAC setting, with successful discharge to the community including no unplanned re-hospitalizations and no death in the 31 days following discharge. Specifically, this measure reports a HHA's risk-standardized rate of Medicare FFS patients who are discharged to the community following a HH stay, and do not have an unplanned readmission to an acute care hospital or LTCH in the 31 days following discharge to community, and who remain alive during the 31 days following discharge to community. Community, for this measure, is defined as home or self-care based on Patient Discharge Status Codes [01, 06, 81, 86] on the Medicare FFS claim. [6] [7]

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[6] National Uniform Billing Committee Official UB-04 Data Specifications Manual 2017, Version 11, July 2016, Copyright 2016, American Hospital Association.

[7] This measure only captures discharges to home and community based settings, not to institutional settings, and is consistent with both Medicaid regulations requiring home and community based settings to support integration, and also with the Americans with Disabilities Act (ADA). This definition is not intended to suggest

This measure was developed to address the *resource use and other measures* domain as mandated by the IMPACT Act.

Specifications for this measure can be found on the CMS website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/MeasureSpecificationsForCY17-HH-QRP-FR_updated_8_2018.pdf

Medicare Spending Per Beneficiary (MSPB) - Post-Acute Care (PAC) Home Health Quality Reporting Program (CMS ID: 2943-10)

The MSPB-PAC HHA measure evaluates HH resource use relative to the resource use of the national median of all HH providers. Specifically, the measure assesses the Medicare spending performed by the HH provider and other healthcare providers during an MSPB-PAC episode.

The measure is calculated as the ratio of the payment-standardized, risk-adjusted MSPB-PAC HHA Amount for each PAC HH provider divided by the episode-weighted median MSPB-PAC HHA Amount across all PAC HH providers. Specifications for this measure can be found on the CMS website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/Downloads/2016_04_06_mspb_pac_measure_specifications_for_rulemaking.pdf

Acute Care Hospitalization (CMS ID: 0180-10, NQF #0171)

This claims-based outcome measure assesses the percentage of home health stays in which patients were admitted to an acute care hospital during the 60 days following the start of the home health stay.

Acute care hospitalization occurs if the patient has at least one Medicare inpatient claim from short term or critical access hospitals (identified by CMS Certification Number ending in 0001-0879, 0800-0899, or 1300-1399) during the 60-day window. Specifications for this measure can be found on the CMS website:

https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/Claims-Based-ACH-and-ED-Use-Measures-Technical-Documentation-and-Risk-Adjustment.zip

Emergency Department Use without Hospitalization (CMS ID: 0182-10, NQF #0173)

This claims-based outcome measure assesses the number of home health stays for patients who have a Medicare claim for outpatient emergency department use and no claims for acute care hospitalization in the 60 days following the start of the home health stay.

Emergency department use without hospitalization occurs when the patient has any Medicare outpatient claims with any ER revenue center codes (0450-0459, 0981) during the 60-day window AND if the patient has no Medicare inpatient claims for admission to an acute care hospital (identified by the CMS Certification Number on the in-patient claim ending in 0001-0879, 0800-0899, or 1300-1399) during the 60-day window. Specifications for this measure can be found on the CMS website:

https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/Claims-Based-ACH-and-ED-Use-Measures-Technical-Documentation-and-Risk-Adjustment.zip

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that board and care homes, assisted living facilities, or other settings included in the definition of "community" for the purpose of this measure are the most integrated setting for any particular individual or group of individuals under the ADA and Section 504.

Home Health Within-Stay Potentially Preventable Hospitalization (CMS ID: 2496-10)
This measure reports a home health agency (HHA)-level rate of risk-adjusted potentially preventable hospitalization (PPH) or potentially preventable observation stays (PPOBS) that occur within a home health (HH) stay for all eligible stays at each agency. A HH stay is a sequence of HH payment episodes separated from other HH payment episodes by at least two days.

This measure calculates a risk-adjusted PPH rate for each HHA. This is derived by first calculating a standardized risk ratio – the predicted number of unplanned, potentially preventable hospital admissions or observation stays at the HHA divided by the expected number of admissions or observation stays for the same patients if treated at the average HHA. The standardized risk ratio is then multiplied by the mean potentially preventable admission or observation stay rate in the population (i.e., all Medicare fee-for-service (FFS) patients included in the measure) to generate the HHA-level standardized hospitalization rate of potentially preventable hospitalization. Specifications for this measure can be found on the CMS website: https://www.cms.gov/files/document/hh-qrp-specificationspotentiallypreventablehospitalizations.pdf

Chapter 3. Quality Episodes for Assessment-Based (OASIS) Quality Measures

A quality episode is the unit of analysis for OASIS-based measures.[8] This section provides the steps to construct a home health quality episode from OASIS assessments. OASIS data are not required for patients under the age of 18, pre- or post-partum patients, and those patients who do not require skilled care. These categories of patients, therefore, are excluded from quality measure calculation.

The following fields are needed from each assessment to construct home health quality episodes:

- M0100_ASSMT_REASON: Reason for assessment
- PRVDR_ID: Facility internal ID[9]
- STATE_CD: State abbreviation
- EFCTV_DT: Effective date of the assessment[10]
- iQIES_PTNT_ID: Unique patient ID[11]
- ASSESSMENT_ID: Unique OASIS assessment ID[12]
- ASSESSMENT_DT: Assessment completion date[13]

OASIS assessments are transmitted to the National Submissions Database residing on a secure database server maintained by CMS. Quality episodes are constructed by matching up assessments for each individual served by a home health agency, sorting those assessments by effective date, then pairing up assessments that mark the beginning and end of a quality episode. During this process, a unique patient ID (iQIES_PTNT_ID) and ASSESSMENT_ID are assigned to each assessment. Quality episodes for which either the

QUALITY EPISODES

Quality episodes are used in the calculation of the assessment-based quality measures. Quality episodes are not the same as certification periods or Patient-Driven Groupings Model (PDGM) payment periods.

A quality episode begins with either a Start of Care or Resumption of Care assessment and ends with a Transfer, Death at home, or Discharge assessment.

A quality episode does not include Recertification (follow-up) or Other Follow-up assessments and may be longer or shorter than the payment periods.

A quality episode is measured from:

- Start of Care to Transfer OR
- Start of Care to Death at Home OR
- Start of Care to the Discharge OR
- Resumption of Care to Transfer OR
- Resumption of Care to Death at Home OR
- Resumption of Care to Discharge

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8 Note that quality episodes are defined differently than payment episodes/periods.

9 PRVDR_ID was formerly FAC_INT_ID in QIES prior to 2020.

10 Effective date depends on the reason for assessment:
- If M0100_ASSMT_REASON = 01, effective date = M0030_START_CARE_DT.
- If M0100_ASSMT_REASON = 03, effective date = M0032_ROC_DATE.
- If M0100_ASSMT_REASON = 06, 07, 08, or 09, effective date = M0906_DC_TRAN_DTH_DT.

11 iQIES_PTNT_ID is assigned to each assessment during processing; the provider does not submit this information. iQIES_PTNT_ID was formerly RES_INT_ID in QIES prior to 2020.

12 ASSESSMENT_ID is assigned to each assessment during processing; the provider does not submit this information.

13 The assessment completion date is constructed using M0090_ASMT_CMPLT_DT and is used to determine which risk adjustment model will be used. For example, start of care/resumption of care assessments completed

beginning or end assessment is missing, or for which assessments are out of sequence, are not included. Quality episodes[14] are not created for patients who meet the following OASIS data collection exclusions, and generic exclusions for OASIS-based measures: patients who 1) do not have as a payment source Medicare (traditional fee-for-service, Medicare (HMO/managed care/Advantage plan), Medicaid (traditional fee-for-service), or Medicaid (HMO/managed care); 2) are less than 18 years old at start or resumption of care; 3) are receiving pre- and/or post-partum maternity services; or 4) are receiving personal care only.

When working with assessment records from the National Submissions Database, the unique home health agency ID is a combination of the two position STATE_CD and PRVDR_ID, and the unique patient ID is a combination of STATE_CD and iQIES_PTNT_ID.

The process of building quality episode-level records is as follows:

1. Keep only assessments related to start of care (SOC), resumption of care (ROC) after an inpatient facility stay, or end of care (EOC) discharge from home health care, including discharge due to death, or admission to inpatient facility for 24 hours or more (with or without discharge from home health care)[15]:
   a. SOC: M0100_ASSMT_REASON = 01
   b. ROC: M0100_ASSMT_REASON = 03
   c. EOC: M0100_ASSMT_REASON = 06, 07, 08, or 09
2. Sort assessments by PRVDR_ID, iQIES_PTNT_ID, STATE_CD in descending order based on EFCTV_DT (i.e., latest to earliest assessment).
3. For each set of assessments having the same combination of PRVDR_ID, iQIES_PTNT_ID, STATE_CD, step through the assessments to find the latest assessment with M0100_ASSMT_REASON = 06, 07, 08, or 09.[16]
4. If an assessment with M0100_ASSMT_REASON = 06, 07, 08, or 09 is found before an assessment with M0100_ASSMT_REASON = 01 or 03 is found, discard the episode being built and start over with step #3.
5. If no assessment with M0100_ASSMT_REASON = 01 or 03 is found before the assessments for this patient are exhausted, discard the episode being built.
6. When an assessment with M0100_ASSMT_REASON = 01 or 03 is found, the episode is complete.
7. Create an episode of care record with the following attributes:
   - PRVDR_ID
   - iQIES_PTNT_ID

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on or after January 1, 2023 will use the most recent risk adjustment model regardless of the assessment's effective date.

[14] Note that quality episodes are defined differently than payment episodes/periods.

[15] For more information on how assessments are defined, please refer to the OASIS D User Manual available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/draft-OASIS-D-Guidance-Manual-7-2-2018.pdf

[16] In the rare case of a patient having two EOC assessments with the same effective date, the one with the lower M0100 value is used to try to match to an earlier SOC/ROC assessment. Thus, in effect, in Step 2, there is an additional descending sort on M0100.

- STATE_CD
- ASSESSMENT_ID_1: Assessment ID of the SOC or ROC assessment
- ASSESSMENT_ID_2: Assessment ID of the EOC assessment
- EFCTV_DT_1: Effective date of the SOC or ROC assessment
- EFCTV_DT_2: Effective date of the EOC assessment

Chapter 4. Data Selection for Internet Quality Improvement and Evaluation System (iQIES) Reports

The purpose of this chapter is to present the data selection criteria for the **iQIES Review and Correct Reports** and the **iQIES Quality Measure (QM) Reports** for quality measures that are included in the HH QRP and are calculated using OASIS data. It also describes the **preview reports** available via iQIES.

- **The iQIES Review and Correct Reports** are on-demand reports that contain agency-level and patient-level measure information. They are updated on a quarterly basis with data refreshed weekly as data are submitted and/or corrected by the agency. These reports allow providers to obtain performance data for the past 12 months (four rolling quarters) **and are restricted to only the publicly reported assessment-based measures**. The intent of this report is for providers to access reports prior to the quarterly data submission deadline to ensure accuracy of their data. This also allows providers to track quarterly data that includes data from quarters after the submission deadline ("frozen" data). **Section 1** below contains the data selection for the assessment-based (OASIS) quality measures for these reports.
- **The iQIES QM Reports** for HH QRP measures[17] are on-demand reports that provide up to 12 rolling months of measure results and are separated into two reports: Outcome and Process. Each has two versions: one containing measure information at the agency-level and another at the patient-level (a.k.a., "tally" reports). These reports provide data on multiple reporting periods/rates to allow for comparisons of measure performance, The agency-level Process Measures reports have three comparison rates: current, prior, and national observed rate. . The agency-level Outcome reports have four comparison rates: current, adjusted prior, Care Compare risk adjusted rate (if applicable), and the national observed rate. The intent of these reports is to enable tracking of quality measure data regardless of quarterly submission deadline ("freeze") dates.
    - The assessment-based (OASIS) measures data are updated twice month, at the agency- and patient-level, as data becomes available.. The performance data contains a rolling 12-months of data, updated based on the schedule presented in Table 4-2.
    - The claims-based measures data are updated annually at the agency-level only, with the exception of the Acute Care Hospitalization and Emergency Department Use Without Hospitalization measures. These are updated quarterly for confidential feedback reporting, and annually for public reporting.

  Section 2 of this chapter presents data selection information that can be applied to both the iQIES agency-level QM Reports and the iQIES patient-level QM Reports.

- Providers can also access two types of **Care Compare Preview Reports** on iQIES:
    - The Care Compare Preview Report previews values for all measures that will be displayed on Care Compare in the coming refresh.

[17] There are additional reports available in iQIES for measures that are not part of the HH QRP. These include the Agency Patient-related Characteristics (case mix) report and Potentially-Avoidable Event report; both of which are available at the agency and patient level. In addition, the Outcome and Process QM reports include HH Quality Initiative (HH QI) measures that are not publicly-reported.

- The Quality of Patient Care Star Rating Provider Preview Report displays the Quality of Patient Care[18] Star Rating and its derivation.

Both reports are made available in iQIES shared folders approximately three months in advance of the public reporting date. **Section 3** provides the schedule for the provision of the provider Preview Reports.

Reviewing these reports helps HHAs to identify data errors that affect performance scores. They also allow the providers to utilize the data for quality improvement purposes.

Section 1: iQIES Review and Correct Reports

Below are the specifications for the iQIES Review and Correct Reports for quality measures presented in **Chapter 3**:

1. Reports contain quarterly rates and a cumulative rate.
   a. The quarterly rates will be displayed using one quarter of data.
   b. The cumulative rates will be displayed using all applicable data in the reporting period.
      i. **For all measures:** the cumulative rate is derived by including all quality episode-level records in the numerator for the reporting period, which do not meet the exclusion criteria, and dividing by all quality episode-level records included in the denominator for the reporting period.
   c. The data will be frozen 4.5 months after the end of each quarter (data submission deadline).
   d. The measure calculations for the quarterly rates and the cumulative rates are refreshed weekly until the submission deadline occurs for that quarter.
2. Complete data (full reporting period) is available for previously existing quality measures. Only partial data (less than 4 quarters) will be available for new measures until a full reporting period (4 quarters) of data has accumulated. Once a reporting period of data has accumulated, as each quarter advances, the subsequent quarter will be added and the earliest quarter will be removed.
3. An illustration of the reporting timeline for the iQIES Review and Correct Reports for the HH QRP measures listed in Chapter 3 is provided in ***Table 4-1.***

Data calculation rule: The calculations include all eligible quality episodes with end-of-care dates within the quarter. Further information on submission timelines can be obtained from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Reporting-Data-Submission-Deadlines.html

[18] More information about the Quality of Patient Care star rating is available at https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/HHQIHomeHealthStarRatings.html

Table 4-1. Timeline for iQIES Review and Correct Reports for Assessment-Based (OASIS) Quality Measures and Care Compare Refreshes (Example Dates)

Review and Correct Periods			Care Compare Refresh	
Review & Correct (R&C) Reports	**Dates of Quality Episodes That May Be Corrected**	**Deadline for submitting missing or corrected data**	**Reporting Period**	**Care Compare Refresh**
The date that these iQIES R&C Reports are posted	*Data can be corrected for quality episodes in the last quarter included in this Review and Correct Period*	*Last date of the Review and Correct Period for correcting data in the last quarter of this HHC reporting period*	*Refresh represents quality episodes ending during this time period*	*Month/Year Data is Publicly Reported*
4/1/2022	1/1/2022-3/31/2022	8/15/2022	4/1/2021-3/31/2022	January 2023
7/1/2022	4/1/2022-6/30/2022	11/15/2022	7/1/2021-6/30/2022	April 2023
10/1/2022	7/1/2022-9/30/2022	2/15/2023	10/1/2021-9/30/2022	July 2023
1/1/2023	10/1/2022-12/31/2022	5/15/2023	1/1/2022-12/31/2022	October 2023
4/1/2023	1/1/2023-3/31/2023	8/15/2023	4/1/2022-3/31/2023	January 2024
7/1/2023	4/1/2023-6/30/2023	11/15/2023	7/1/2022-6/30/2023	April 2024
10/1/2023	7/1/2023-9/30/2023	2/15/2024	10/1/2022-9/30/2023	July 2024
1/1/2024	10/1/2023-12/31/2023	5/15/2024	1/1/2023-12/31/2023	October 2024

Section 2: iQIES Quality Measure (QM) Reports

Below are the specifications for the iQIES QM Reports for the HH QRP measures presented in **Chapter 7.** The same steps are used to generate both agency-level and patient-level reports.

1. Measures are calculated consistent with the methods in the previous section, **Chapter 4, Section 1.**
   a. Only the cumulative rates will be displayed using all data in the reporting period.
2. The illustration of the reporting timeline for the monthly iQIES QM Reports is provided in ***Table 4-2***.
3. **Data calculation rule:** The calculations include quality episodes with end-of-care dates through the end of the month.

Table 4-2. Data Included in the iQIES QM Reports for OASIS Quality Measures

IQIES QM Report Calculation Month	Discharges Through the Month of	Discharge Dates Included in the Report[1]
January 2022	October 2021	November 1, 2020 – October 31, 2021
February 2022	November 2021	December 1, 2020 – November 30, 2021
March 2022	December 2021	January 1, 2021 – December 31, 2021
April 2022	January 2022	February 1, 2021 – January 31, 2022
May 2022	February 2022	March 1, 2021 – February 28, 2022
June 2022	March 2022	April 1, 2021 – March 31, 2022
July 2022	April 2022	May 1, 2021 – April 30, 2022
August 2022	May 2022	June 1, 2021 – May 31, 2022
September 2022	June 2022	July 1, 2021 – June 30, 2022
October 2022	July 2022	August 1, 2021 – July 31, 2022
November 2022	August 2022	September 1, 2021 –August 31, 2022
December 2022	September 2022	October 1, 2021 – September 30, 2022
January 2023	October 2022	November 1, 2021 – October 31, 2022
February 2023	November 2022	December 1, 2021 – November 30, 2022
March 2023	December 2022	January 1, 2022 – December 31, 2022
April 2023	January 2023	February 1, 2022 – January 31, 2023
May 2023	February 2023	March 1, 2022 – February 28, 2023
June 2022	March 2023	April 1, 2022 – March 31, 2023
July 2023	April 2023	May 1, 2022 – April 30, 2023
August 2023	May 2023	June 1, 2022 – May 31, 2023
September 2023	June 2023	July 1, 2022 – June 30, 2023
October 2023	July 2023	August 1, 2022 – July 31, 2023
November 2023	August 2023	September 1, 2022 –August 31, 2023
December 2023	September 2023	October 1, 2022 – September 30, 2023

Section 3: Provider Preview Reports

Preview reports are provided for measures that are reported on Care Compare. Preview Reports are made available in HHAs' iQIES shared folders approximately three months prior to each Care Compare refresh. There are two types of preview reports, one that displays all measures as they would be shown on Care Compare in the next refresh and a separate preview report for the QoPC Star Rating. These reports are delivered separately into the iQIES shared folders.

Chapter 5. Calculations for Assessment-Based (OASIS) Measures That Are Not Risk-Adjusted

Section 1: Introduction

This chapter presents technical details regarding the unadjusted calculation of the HH QRP quality measures that are based on a HH quality episodes as a unit of analysis.

The QMs are created from counts of HH quality episodes that meet certain criteria (as described in Chapter 7). For example, HH-level scores for the Percent of Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function quality measure are computed by:

1) Counting HH quality episodes ending with discharge, death, or transfer to inpatient facility during the reporting period, other than those covered by generic exclusions (See Chapter 3 for definition of generic exclusions) ; and

2) Computing the percent of HH quality episodes with functional assessment data for each self-care and mobility activity and at least one self-care or mobility discharge goal.. The detailed logic for defining HH quality episodes is located in Chapter 3. The logic for defining each quality measure is presented in Quality Measure Logical Specifications (Chapter 7) of this manual.

Section 2: Steps Used in National Quality Measure Calculations

This section outlines the steps used to calculate the observed (unadjusted) HH QRP quality measures. The examples in the steps below use Q1 2022 through Q4 2022 as the reporting period. The dates associated with these steps would be updated, as appropriate, for subsequent quarterly releases of the quality measures.

Measure Calculation Steps:

1. ***OASIS Record Selection.*** All HHA OASIS records with effective dates on or before the end of Q4 2022 are selected.
2. ***HH Quality Episode Creation.*** Using the methodology described in **Chapter 3**, HH quality episodes for HHA were created from the available data. The effective dates of the SOC/ROC assessments and the EOC assessments composing the quality episode are recorded.
3. ***HH Quality Episode Selection.*** All quality episodes with EOC effective dates within the reporting period are selected.
4. ***Episode-level Quality Measure Score Calculation.*** Quality measure scores are calculated separately for each HH quality episode.
    a. Exclusions: For each quality measure with exclusions, excluded episodes are assigned a missing value for that quality measure.
    b. Quality measure values: Does the HH quality episode meet the criteria for the quality measure numerator?
        i. If "Yes", then store a value of [1] for that quality measure
        ii. If "No", then store a value of [0] for that quality measure
5. ***HHA-level Observed Quality Measures Scores.*** For all quality measures, the HHA-level observed (unadjusted) quality measure scores are calculated using the [0] and [1] values stored for each quality episode. These Observed quality measure score reported via iQIES are not risk-adjusted.
    a. Numerator: For each quality measure, count the total number of HH quality episodes that meet the criteria for the QM numerator for each HHA and sum for the HHA.

b. Denominator: For each quality measure, count the total number of HH quality episodes retained after applying exclusions for each HHA and sum for the HHA.

c. HHA-level observed quality measure scores: Divide the numerator by the denominator for each quality measure and HHA. Multiply by 100 to obtain a percent value.

6. ***Final HHA-level Output File.*** The final HHA-level output files for the quality measures in the reporting period contain the following:

   a. HHA numerator counts

   b. HHA denominator counts

   c. HHA-level observed quality measure scores (reported for the unadjusted quality measures – see Chapter 7 for the list of unadjusted process measures)

Chapter 6. Calculations for Assessment-Based (OASIS) Measures That Are Risk-Adjusted

Section 1: Introduction

This chapter presents technical details regarding the risk-adjusted calculation of the HH QRP quality measures (QMs) and is applicable to the QMs that are calculated based on an HH quality episode, as a unit of analysis.

The QMs are created from counts of HH quality episodes that meet certain criteria. For example, HH-level observed (unadjusted) scores for Improvement in Bathing (NQF #0174 are computed by: 1) counting quality episodes where the patient improved in bathing from the start of care or resumption of care (SOC/ROC) to the end of care (EOC) and 2) computing the percent of quality episodes exhibiting improvement for a home health agency (HHA).

The detailed logic for defining HH quality episodes is located in Chapter 3. The logic for defining each quality measure is presented in the Quality Measure Logical Specifications (**Chapter 7**) of this manual.

A Note on Risk Adjustment

Change in health status over time can occur either as a result of the care provided or the natural progression of disease and disability or recovery. In order to fairly compare providers, changes in outcomes due to care provision need to be disentangled from the natural progression of disease and disability or recovery. Risk adjustment compensates or adjusts for differences in risk factors so that providers' performance on outcome measures is not disproportionately affected by accepting certain types of patients, thereby reducing or eliminating incentives for providers to selectively accept or decline patients. Process measures are not risk adjusted, nor are certain outcome measures that are very low prevalence, are considered "never events", or are not used to compare providers (i.e., used only for providers' own quality improvement efforts).

The approach used to risk adjust involves adjusting quality measure scores directly, using logistic regression. This method of adjustment employs *quality episode-level covariates* that are found to increase or decrease the measure score. Detailed specifications for quality episode-level covariates are presented in **Chapter 7**, Quality Measure Logical Specifications. This approach involves the following steps:

- First, quality episode-level covariates are used in a logistic regression model to calculate a *predicted rate for each quality episode* (the probability that the quality episode will evidence the outcome, given the presence or absence of characteristics measured by the covariates at SOC/ROC). **Section 2** of this chapter presents the details for calculating predicted rates for quality episodes. **Section 3** of this chapter presents the details for how risk factors are identified for the prediction model.
- Then, an average of all quality episode-level predicted rates for the HHA is calculated to create an *agency's predicted rate.*
- The *agency's risk-adjusted rate* is based on a calculation which combines the *agency's predicted rate*, the *agency's observed rate, and the national predicted rate*.

The details for calculating agency's risk adjusted rates are presented in **Section 2** of this chapter. The parameters used for each release of the quality measures are presented in **Appendix A**.

Currently six of the publicly reported assessment-based quality measures for the HH setting are adjusted using quality episode-level risk factors for HH QRP:

- Improvement in Ambulation- Locomotion (NQF #0167) (CMS ID: 0183-11)

- Improvement in Bed Transferring (NQF #0175) (CMS ID: 1000-11)
- Improvement in Bathing (NQF #0174) (CMS ID: 0185-11)
- Improvement in Management of Oral Medications (NQF #0176) (CMS ID: 0189-11)
- Improvement in Dyspnea (NQF #0179) (CMS ID: 0187-11)
- Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: 5852-11)

Section 2: Calculating Risk Adjusted Quality Measures

The following steps are used to calculate each quality measure for a 12-month measure time window after the appropriate exclusions are made:

A. Calculate the agency observed score for each month **(steps 1 through 3)**

Step 1. Calculate the denominator count:

Calculate the total number of quality episodes each month that do not meet the exclusion criteria following each measure's specifications.

Step 2. Calculate the numerator count:

Calculate the total number of quality episodes in the denominator whose OASIS assessments indicates meeting numerator criteria for each month, following each measure's specifications as outlined in chapter 7 below.

Step 3. Calculate the agency's monthly observed rate:

Divide the agency's numerator count by its denominator count to obtain the agency's observed rate; that is, divide the result of **step 2** by the result of **step 1**.

B. Calculate the predicted rate for each quality episode (**steps 4 and 5**)

Step 4. Determine presence or absence of the risk factors for each patient.[19]:

If dichotomous risk factor covariates are used, assign covariate values, either '0' for covariate condition not present or '1' for covariate condition present, for each quality episode for each of the covariates as reported at SOC/ROC, as described in the section above.

Step 5. Calculate the predicted rate for each quality episode with the following formula:[20]

[1] Episode-level predicted QM rate = $1/ [1+e^{-x}]$

Where e is the base of natural logarithms and X is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below).

[2] Quality measure triggered (yes=1, no=0) = B0 + B1*COV1 + B2*COV2 + ... + BN*COVN

[19] The Risk Adjustment Technical Specifications (https://www.cms.gov/files/document/risk-adjustment-technical-specificationsjanuary2023.pdf) contain details on how to create risk factors.

[20] Predicted rates are only calculated for episodes with non-missing observed rates.

Where B0 is the logistic regression constant, B1 is the logistic regression coefficient for the first covariate, COV1 is the first episode-level rate for the first covariate, B2 is the logistic regression coefficient for the second covariate, and COV2 is the second episode-level rate for the second covariate, etc. The regression constant and regression coefficients are provided in *Recalibrated Risk Adjustment Model_Risk Factors_Model Fit_Coefficients.pdf*.

C. Calculate the agency's monthly predicted rate (**step 6**)

Step 6. Once a predicted QM rate has been calculated for all quality episodes, calculate the mean agency-level predicted QM rate by averaging all episode-level predicted values for that agency for each month.

D. Calculate national predicted rate (**step 7**)

Step 7. Calculate the monthly national predicted rate:

Once a predicted QM value has been calculated for all episodes, calculate the mean national-level predicted QM rate by averaging all episode-level predicted values for each month. Note that the sample will include only those quality episodes with non-missing data for the component covariates.

E. Calculate the agency's monthly risk-adjusted rate (**step 8**)

Step 8. Calculate the agency-level monthly risk-adjusted rate based on the agency-level monthly observed quality measure rate (**step 3**), agency-level monthly mean predicted quality measure rate **(step 6)**, and national monthly mean predicted QM rate **(step 7)**, using the following formula:

[3] agency risk adjusted rate = agency observed rate + national predicted rate – agency predicted rate

F. Calculate the agency's 12-month risk adjusted rate (**step 9**)

Step 9. Calculate the 12-month risk-adjusted rate by averaging the agency's monthly risk-adjusted rate (**step 8**) weighting by the HHA's number of episodes in each month over the 12-month period.

If the adjusted rate is greater than 100 percent, the adjusted rate is set to 100 percent. Similarly, if the result is a negative number the adjusted rate is set to zero.[21]

Section 3: Identifying Risk Factors

The risk adjustment model presented in Appendix A was developed using OASIS national repository data from assessments submitted between January 1, 2021 and December 31, 2021 (~6.2 million quality episodes). The population of 6.2 million quality episodes for calendar year 2021 was split in half such that 3.1 million quality episodes were used as a developmental sample and 3.1 million quality episodes were used as a validation sample. The following process was used to identify unique contributing risk factors to the prediction model:

[21] Except for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury, if the observed rate equals 100 percent, then the risk adjusted rate is set to 100 percent. For Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury, if the observed rate equals 0 percent, then the risk adjusted rate is set to 0 percent.

1. Risk factors were identified based on OASIS items that will remain or will be added following the transition to OASIS-E. The statistical properties of the items were examined to specify risk factors (e.g., item responses were grouped when there was low prevalence of certain responses). Team clinicians then reviewed all risk factors for clinical relevance and redefined or updated risk factors as necessary. These risk factors were divided into 31 content focus groups (e.g., functional status, Hierarchical Condition Categories, etc.). Where possible, risk factors were defined such that they flagged mutually exclusive subgroups within each content focus group. When modelling these risk factors, the exclusion category was set to be either the risk factor flag for most independent or the most frequent within each content focus group.
2. A logistic regression specification was used to estimate coefficients among the full set of candidate risk factors. Those risk factors that are statistically significant at probability <0.0001 are flagged for further review in Step 3.
3. Each risk factor flagged in Step 2 was reviewed to determine which one of the two groups its content focus group resided. Either its content focus group was explicitly tiered by increasing severity or it was not. This classification determined which risk factor covariates were kept and which were dropped from the final risk adjustment specification. For content focus groups that are explicitly tiered by increasing severity, either all risk factors are included within a content focus group or none of them. For example, if response option levels 1 and 2 for M1800 Grooming were statistically significant at a probability of <0.0001 for a particular outcome, then response option level 3 for M1800 Grooming was added to the list even if it was not statistically significant. If none of the risk factors within an explicitly tiered content focus group was statistically significant at <0.0001, the entire content focus group was removed from the model.
4. A logistic regression was computed on the list of risk factors kept after Step 3 above.
5. Goodness of fit and reliability statistics (McFadden's R^2, C-statistic, and Intra-Class Correlation) were calculated to measure how well the predicted values generated by the prediction model were related to the actual outcomes. Separate bivariate correlations were constructed between the risk factors and the outcomes to confirm the sign and strength of the estimated coefficients in the logistic model.
6. The initial model was reviewed by a team of at least three experienced home health clinicians. Each risk factor was reviewed for its clinical plausibility. Clinicians were asked about the direction indicated by the coefficient in the risk adjustment model and how it compares to their perceived bivariate relationship given their experience treating patients in the home. Risk factors that were not clinically plausible were revised or eliminated if revisions were not possible.
7. The risk factors that were deemed not clinically plausible were revised or eliminated, and Steps 3, 4, and 5 in this process were repeated. The resulting logistic regression equation was designated as the risk adjustment model for the outcome.
8. The risk adjustment model was applied to the validation sample and goodness of fit statistics were computed. The statistics were similar to the goodness of fit statistics computed with the development sample. As additional testing, HHAs were stratified across several observable characteristics, and the distributions of the risk-adjusted outcomes were checked to confirm that values remained similar across strata.

Chapter 7. Measure Specifications for Assessment- Based (OASIS) Quality Measures

Contents

Introduction

This chapter provides the specifications for each of the OASIS-based process and outcomes measures in the HH QRP. Measures are based on information from the start or resumption of care and end of care from home health quality episodes. Start or resumption of care (SOC/ROC) is indicated with [1] following the OASIS item number and end of care (EOC) is indicated with [2] following the OASIS item number.

Some OASIS items used to calculate or risk-adjust HH QRP measures can be dashed at one or more data collection time points. These include M1028, M1060, M1311 (at Discharge only), GG0100, GG0110, GG0130, GG0170, M2001, M2003, M2005, D0150, J1800 and J1900. A dash (–) value indicates that no information is available. In general, CMS expects dash use to be a rare occurrence.

Process Measures

Timely Initiation of Care

Table 7-1. Timely Initiation of Care NQF# 0526* (CMS ID 0196-10)

Measure Description
This measure reports the percentage of home health quality episodes in which the date of start or resumption of care was: (1) the same as the physician-ordered date, or (2) within two days of referral if no date was specified by the physician, or (3) within two days of inpatient discharge if the inpatient discharge was later than referral and no date was specified by the physician.
Measure Specifications
Numerator Home health quality episodes for which the SOC/ROC date was: (1) the same as the physician-ordered date: M0030[1] = M0102[1] **or** (2) within two days of referral if no date was specified by the physician: M0030[1] ≤ M0104[1] + 2 Days if M0102[1] = NA **or** (3) if there was an inpatient discharge (M1000[1] <> NA), within two days of inpatient discharge if the inpatient discharge was later than referral and no date was specified by the physician (M0030[1]) ≤ M1005[1] + 2 Days if (M1005[1]) > M0104[1] and M0102[1] = NA)) If the episode begins with resumption of care, replace M0030[1] with M0032[1]. ***Denominator*** All home health quality episodes except for those meeting the exclusion criteria. ***Denominator Exclusions*** – Episodes for which the physician-ordered date is NA and the SOC/ROC date was greater than two days after the physician referral date and there was an inpatient discharge and the inpatient discharge date is unknown: M0102[1] = NA and M0030[1] > M0104[1] + 2 Days and M1000[1] <> NA and M1005[1] = UK ***Measure Type*** Process - Timely Care ***OASIS Items Used*** (M0030) Start of Care Date (M0032) Resumption of Care Date (M0102) Date of Physician-ordered Start of Care (M0104) Date of Referral (M0100) Reason for Assessment (M1000) Inpatient Facility discharge (M1005) Inpatient Discharge Date

* - The following measure was previously approved or given time limited endorsement by the National Quality Forum (NQF) but has been withdrawn from NQF submission.

Influenza Immunization Received for Current Flu Season

Table 7-2. Influenza Immunization Received for Current Flu Season NQF # 0522 (CMS ID 0212-10)

Measure Description
This measure reports the percentage of home health quality episodes during which patients received or were determined to have received the influenza immunization for the current flu season.
Measure Specifications
Numerator Home health quality episodes during which the patient a) received vaccination from the HHA or b) had received vaccination from HHA during earlier episode of care, or c) was determined to have received vaccination from another provider. This is determined by the following responses on the EOC [2] assessment for the quality episode: – M1046[2] = 01 or – M1046[2] = 02 or – M1046[2] = 03 ***Denominator*** Home health quality episodes ending with a discharge or transfer to inpatient facility during the reporting period (M0100[2] = 06, 07, 09), except for those meeting the exclusion criteria. Note that If M1041[2] Influenza Vaccine Data Collection Period is marked "No" incorrectly, then the case is included in the denominator. ***Denominator Exclusions*** Home health quality episodes for which: – no part of the care was provided during October 1–March 31 as indicated by the SOC/ROC (M0030[1] or M0032[1]) and EOC (M0906[2]) dates or – the patient does not meet age/condition guidelines for influenza vaccine: M1046[2] = 06 ***Measure Type*** Process – Prevention ***OASIS Items Used*** (M0100) Reason for Assessment (M0030) Start of Care Date (M0032) Resumption of Care Date (M0906) Discharge/Transfer/Death Date (M1041) Influenza Vaccine Data Collection Period: (M1046) Influenza Vaccine Received (M0100) Reason for Assessment

Drug Regimen Review Conducted with Follow-Up for Identified Issues

Table 7-3. Drug Regimen Review Conducted with Follow-Up for Identified Issues (CMS ID 2946-10)

Measure Description
This measure reports the percentage of home health quality episodes for which a drug regimen review was conducted at the start of care or resumption of care and completion of recommended actions from timely follow-up with a physician occurred each time potential clinically significant medication issues were identified throughout that quality episode.
Measure Specifications
Numerator Home health quality episodes for which: (1) the agency conducted a drug regimen review at the start of care or resumption of care: (M2001[1] = 00, 01) or the patient is not taking any medications (M2001[1] = 09), and, (2) if potential clinically significant medication issues were identified at any time during the quality episode (M2001[1] = 01), then the HHA contacted a physician (or physician-designee) and completed prescribed/recommended actions by midnight of the next calendar day (M2003[1] = 01), and (3) the HHA contacted a physician (or physician-designee) and completed prescribed/recommended actions by midnight of the next calendar day each time potential clinically significant medication issues were identified since the start of care or resumption of care (M2005[2] = 01) or no potential clinically significant medications issues were identified since SOC/ROC (M2005[[2] = 09). ***Denominator*** All home health quality episodes, except for those meeting the exclusion criteria. ***Denominator Exclusions*** None ***Measure Type*** Process- Prevention ***OASIS Items Used*** M2001 (Drug Regimen Review) M2003 (Medication Follow-up) M2005 (Medication Intervention)

Application of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function

Table 7-4. Application of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (CMS ID 5853-10)

Measure Description
This measure reports the percentage of home health quality episodes in which the patient's mobility and self-care functional status was assessed and documented and at least one discharge goal was recorded.
Measure Specifications
Numerator Home health quality episodes with functional assessment data for 12 specific self-care and mobility activities and at least one self-care or mobility discharge goal. For home health quality episodes ending in a discharge from the agency (M0100[2] = 09), all three of the following are required for the patient to be counted in the numerator: I. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted for each of the functional assessment items on the SOC/ROC assessment; II. A valid numeric score, which is a discharge goal indicating the patient's expected level of independence or a valid code indicating the activity was not attempted, for at least one self-care or mobility item on the SOC/ROC assessment; and III. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted, for each of the specified functional assessment items on the discharge assessment. For home health episodes ending in a qualifying admission to an inpatient facility or death (M0100[2] = 06, 07, 08), the discharge functional status data would not be required for the episode to be included in the numerator. For these episodes, the following are required for these patients to be counted in the numerator: I. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted for each of the specified functional assessment items on the SOC/ROC assessment; and II. A valid numeric score, which is a discharge goal indicating the patient's expected level of independence or a valid code indicating the activity was not attempted, for at least one self-care or mobility item on the SOC/ROC assessment. A dash (–) value for an item indicates that no information is available and is not a valid response for the numerator. **I. Specifications for episodes with complete admission functional assessment data:** For admission functional assessment data to be complete, each condition listed below must be met: 1. GG0130A1[1]. Eating = [01, 02, 03, 04, 05, 06, 07, 09,10, 88]; and 2. GG0130B1[1]. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 3. GG0130C1[1]. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 4. GG0170B1[1]. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 5. GG0170C1[1]. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 6. GG0170D1[1]. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 7. GG0170E1[1]. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and 8. GG0170F1[1]. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and For patients who are walking as indicated by GG0170I1 = [01, 02, 03, 04, 05, 06], include items: 9. GG0170J1[1]. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and GG0170K1[1]. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] For patients who use a wheelchair as indicated by GG170Q1[1] = 1, include items: 10. GG0170R1[1]. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and GG0170RR1[1]. Indicate the type of wheelchair/scooter used = [1, 2] and

GG0170S1[1]. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
GG0170SS1[1]. Indicate the type of wheelchair/scooter used = [1, 2]

II. Specifications for a discharge goal (documenting a care plan that includes function)

For the discharge goal, at least one of the items listed below must have a valid code as specified.

1. GG0130A2[1]. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
2. GG0130B2[1]. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
3. GG0130C2[1]. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
4. GG0170B2[1]. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
5. GG0170C2[1]. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
6. GG0170D2[1]. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
7. GG0170E2[1]. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
8. GG0170F2[1]. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
9. GG0170J2[1]. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
10. GG0170K2[1]. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
11. GG0170R2[1]. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
12. GG0170S2[1]. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88].

III. Specifications for complete discharge functional assessment data

For discharge functional assessment data to be complete, each condition listed below must be met. This only applies episodes for which the patient was discharged from the agency (M0100_ASSMT_REASON[2] = 09).

1. GG0130A3[2]. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
2. GG0130B3[2]. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
3. GG0130C3[2]. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 88]; and
4. GG0170B3[2]. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
5. GG0170C3[2]. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
6. GG0170D3[2]. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
7. GG0170E3[2]. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
8. GG0170F3[2]. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and

For patients who are walking as indicated by GG0170I3 = [01, 02, 03, 04, 05, 06] include items:

9. GG0170J3[2]. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10,88]; and
   GG0170K3[2]. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88].

For patients who use a wheelchair as indicated by GG170Q3[2] = 1, include items:

10. GG0170R3[2]. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10,88] and
    GG0170RR3[2]. Indicate the type of wheelchair/scooter used = [1, 2] and
    GG0170S3[2]. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170SS3[2]. Indicate the type of wheelchair/scooter used = [1, 2].

Denominator

All home health quality episodes, except for those meeting the exclusion criteria.

Denominator Exclusions

None

Measure Type

Process – Assessment

OASIS Items Used

(M0100) Reason for Assessment
(GG0130A) Eating
(GG0130B) Oral Hygiene
(GG0130C) Toileting Hygiene
(GG0170B) Sit to Lying
(GG0170C) Lying to sitting on the side of the bed
(GG0170D) Sit to Stand
(GG0170E) Chair/bed-to-chair transfer
(GG0170F) Toilet transfer
(GG0170J) Walk 50 feet with 2 turns
(GG0170K) Walk 150 feet
(GG0170R) Wheel 50 feet with 2 turns
(GG0170RR) Type of wheelchair
(GG0170S) Wheel 150 feet
(GG0170SS) Type of wheelchair

Drug Education on All Medications Provided to Patient/Caregiver

Table 7-5. Drug Education on All Medications Provided to Patient/Caregiver (CMS ID 2705-10)

Measure Description
This measure reports the percentage of home health quality episodes during which patient/caregiver was instructed on how to monitor the effectiveness of drug therapy, how to recognize potential adverse effects, and how and when to report problems (at the time of or at any time since the most recent SOC/ROC assessment).
Measure Specifications
Numerator Home health quality episodes during which patient/caregiver was instructed on how to monitor the effectiveness of drug therapy, how to recognize potential adverse effects, and how and when to report problems (at the time of or at any time since the most recent SOC/ROC assessment). – M2016[2] = 01 ***Denominator*** Home health quality episodes ending with a discharge or transfer to inpatient facility during the reporting period (M0100[2] = 06, 07, 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient was not taking any drugs (M2016[2] = NA). ***Measure Type*** Process – Education ***OASIS Items Used*** (M0100) Reason for Assessment (M2016) Patient/Caregiver Drug Education Intervention

Transfer of Health Information to the Patient

Table 7-6. Transfer of Health Information to the Patient (CMS ID=3496-10)

Measure Description
This proposed measure assesses for and reports on the timely transfer of health information, i.e., a current reconciled medication list, to the patient when discharged from home health to a private home/apartment, board and care home, assisted living, group home, or transitional living.
Measure Specifications
Numerator The number of quality episodes ending in a discharge from the agency (M0100[2] = [09]), for which the OASIS indicated that the following is true: At the time of discharge (M2420[2] = [1, 4, or UK]), the agency provided a current reconciled medication list to the patient, family, and/or caregiver (A2123= [1]). ***Denominator*** The denominator for this measure is the number of quality episodes ending in discharge to a private home/ apartment, board/care, assisted living, group home, or transitional living. ***Denominator Exclusions*** Patients who die during the episode (M0100[2] = 08). Patients discharged to a location not specified in denominator statement (M0100[2] = [06, 07, 08] or (M0100[2] = [09] and M2420[2] = [2, 3])). ***Measure Type*** Process ***OASIS Items Used*** M0100 (Reason for Assessment) A2123 (Provision of Current Reconciled Medication List to Patient) A2124 (Route of Current Medication List Transmission to Patient) M2420 (Discharge Disposition)

Transfer of Health Information to the Provider

Table 7-7. Transfer of Health Information to the Provider (CMS ID=5652-10)

Measure Description
The proposed measure, the Transfer of Health Information to the Provider, assesses the timeliness of the transfer of health information, specifically transfer of a reconciled medication list. This measure evaluates for the transfer of information when a patient is transferred or discharged to a subsequent provider. For this proposed measure, the subsequent provider is defined as a short-term general hospital, a SNF, intermediate care, home under care of an organized home health service organization or hospice, hospice in an institutional facility, an IRF, an LTCH, a Medicaid nursing facility, an inpatient psychiatric facility, or a critical access hospital.
Measure Specifications
Numerator The number of home health quality episodes ending in discharge or transfer (M0100[2]=[6,7, or 9] and M2420[2] = [2 or 3] for which the OASIS indicated that the following is true: At the time of discharge/transfer, the agency provided a current reconciled medication list to the subsequent provider (A2120[2]= [1] or (A2121[2] = [1]). ***Denominator*** The denominator is the number quality episodes ending in discharge or/transfer to a short-term general hospital, a SNF, intermediate care, home under care of another organized home health service organization or hospice, hospice in an institutional facility, a swing bed, an IRF, a LTCH, a Medicaid nursing facility, an inpatient psychiatric facility, or a critical access hospital. ***Denominator Exclusions*** Patients who die during the episode (M0100[2] = 08). Patients discharged to a location not specified in denominator statement (M2420[2] = [1, 4, or UK]). ***Measure Type*** Process ***OASIS Items Used*** M100 (Reason for Assessment) A2120 (Provision of Current Reconciled Medication List to Subsequent Provider at Transfer) A2121 (Provision of Current Reconciled Medication List to Subsequent Provider at Discharge) A2122 (Route of Current Medication List Transmission to Subsequent Provider) M2420 (Discharge Disposition)

Outcome Measures

Improvement in Ambulation – Locomotion

Table 7-8. Improvement in Ambulation – Locomotion NQF #0167 (CMS ID 0183-11)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient improved in ability to ambulate or, if non-ambulatory, improved in ability to propel self in a wheelchair.
Measure Specifications
Numerator Home health quality episodes for which the response on the discharge assessment indicates less impairment in ambulation/locomotion compared to start (or resumption) of care. This is determined by the following responses on the SOC/ROC [1] and EOC [2] assessments for the quality episode: M1860[2] < M1860[1] ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient, at start/resumption of care, was able to independently walk (M1860[1] = 00), or the patient was nonresponsive (M1700[1] = 04 or M1710[1] = NA or M1720[1] = NA), or was discharged to a non-institutional hospice (M2420[2] = 03) at end of care (M0100[2] = 09). ***Measure Type*** End Result Outcome – Functional ***OASIS Items Used*** (M0100) Reason for Assessment (M1860) Ambulation/ Locomotion (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious (M2420) Discharge Disposition
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

Improvement in Bed Transferring

Table 7-9. Improvement in Bed Transferring NQF #0175 (CMS ID 1000-11)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient improved in ability to get in and out of bed.
Measure Specifications
Numerator Home health quality episodes for which the response on the discharge assessment indicates less impairment in bed transferring compared to start (or resumption) of care. This is determined by the following responses on the SOC/ROC [1] and EOC [2] assessments for the quality episode: M1850[2] < M1850[1] ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient, at start/resumption of care, was able to transfer independently (M1850[1] = 00), or the patient was nonresponsive (M1700[1] = 04 or M1710[1] = NA or M1720[1] = NA), or was discharged to a non-institutional hospice (M2420[2] = 03) at end of care M0100[2] = 09). ***Measure Type*** End Result Outcome - Functional ***OASIS Items Used*** (M0100) Reason for Assessment (M1850) Transferring (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious (M2420) Discharge Disposition
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

Improvement in Bathing

Table 7-10. Improvement in Bathing NQF# 0174 (CMS ID 0185-11)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient got better at bathing self.
Measure Specifications
Numerator Home health quality episodes for which the response on the discharge assessment indicates less impairment in bathing compared to start (or resumption) of care. This is determined by the following responses on the SOC/ROC [1] and EOC [2] assessments for the quality episode: M1830[2] < M1830[1] ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient, at start/resumption of care, was able to bathe independently (M1830[1] = 00), or the patient was nonresponsive (M1700[1] = 04 or M1710[1] = NA or M1720[1] = NA), or was discharged to a non-institutional hospice (M2420[2] = 03) at end of care M0100[2] = 09). ***Measure Type*** End Result Outcome - Functional ***OASIS Items Used*** (M0100) Reason for Assessment (M1830) Bathing (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious (M2420) Discharge Disposition
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

Improvement in Management of Oral Medications

Table 7-11. Improvement in Management of Oral Medications NQF # 0176 (CMS ID 0189-11)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient improved in ability to take their medicines correctly (by mouth).
Measure Specifications
Numerator Home health quality episodes where the value recorded on the discharge assessment indicates less impairment in taking oral medications correctly at discharge than at start (or resumption) of care. This is determined by the following responses on the SOC/ROC [1] and EOC [2] assessments for the quality episode: M2020[2] < M2020[1] ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient, at start/resumption of care, was able to take oral medications correctly without assistance or supervision (M2020[1] = 00) or patient has no oral medications prescribed (M2020[1] = (NA,'^',') or M2020[2] = (NA)) or the patient was nonresponsive (M1700[1] = 04 or M1710[1] = NA or M1720[1] = NA), or was discharged to a non-institutional hospice (M2420[2] = 03) at end of care M0100[2] = 09). Note that '^' indicates the item was skipped due to a skip pattern. ***Measure Type*** End Result Outcome - Functional ***OASIS Items Used*** (M0100) Reason for Assessment (M2020) Management of Oral Medications (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious (M2420) Discharge Disposition
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

Improvement in Dyspnea

Table 7-12. Improvement in Dyspnea NQF #0179* (CMS ID 0187-11)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient became less short of breath or dyspneic.
Measure Specifications
Numerator Home health quality episodes where the discharge assessment indicates less dyspnea at discharge than at start (or resumption) of care. This is determined by the following responses on the SOC/ROC [1] and EOC [2] assessments for the quality episode: M1400 [2] < M1400[1] ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the patient, at start/resumption of care, was not short of breath at any time M1400[1] = 00 or was discharged to a non-institutional hospice (M2420[2] = 03) at end of care M0100[2] = 09). ***Measure Type*** End Result Outcome – Health ***OASIS Items Used*** (M0100) Reason for Assessment (M1400) When is the patient dyspneic? (M2420) Discharge Disposition
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

* - The following measure was previously approved or given time limited endorsement by the National Quality Forum (NQF) but has been withdrawn from NQF submission.

Percent of Residents Experiencing One or More Falls with Major Injury

Table 7-13. Application of Percent of Residents Experiencing One or More Falls with Major Injury NQF # 0674 (CMS ID 3493-10)

Measure Description
This measure reports the percentage of quality episodes in which the patient experiences one or more falls with major injury (defined as bone fractures, joint dislocations, closed-head injuries with altered consciousness, or subdural hematoma) during the home health quality episode.
Measure Specifications
Numerator Home health quality episodes in which the patient experienced one or more falls since SOC/ROC (J1800[2] = 1) that resulted in major injury during the episode of care (J1900C[2] = 1, 2). ***Denominator*** All home health quality episodes, except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health episodes for which the occurrence of falls was not assessed (J1800[2] = '-' or J1900C = '^') or the assessment indicated a fall (J1800[2] = 1) and the number of falls with major injury was not assessed (J1900C[2] = '-'). Note that '^' indicates the item was skipped due to a skip pattern, and that '-' indicates the item was not assessed/no information. ***Measure Type*** End Result Outcome – Health ***OASIS Items Used*** (J1800) Any falls since SOC/ROC (J1900C) Number of falls since SOC/ROC
Covariates
This measure will not be risk adjusted. Falls with major injury are considered "never events" and as such are not to be risk adjusted.

Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury

Table 7-14. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID 5852-11)

Measure Description
Percentage of quality episodes in which the patient has one or more Stage 2-4 pressure ulcers, or an unstageable ulcer, present at discharge that are new or worsened since the beginning of the quality episode.
Measure Specifications
Numerator Home health quality episodes for which the response on the discharge assessment indicates one or more new or worsened Stage 2-4 or unstageable pressure ulcers compared to start (or resumption) of care. This is determined by the following responses on the EOC [2] assessments for the quality episode: – M1311A1[2] - M1311A2[2] > 0, or – M1311B1[2] - M1311B2[2] > 0, or – M1311C1[2] - M1311C2[2] > 0, or – M1311D1[2] - M1311D2[2] > 0, or – M1311E1[2] - M1311E2[2] > 0, or – M1311F1[2] - M1311F2[2] > 0 Note: If one or more (but not all) item pair(s) contain at least one dash value ('-') the item pair(s) is/are ignored and the remaining item pair(s) is/are evaluated. ***Denominator*** Home health quality episodes ending with a discharge from the agency during the reporting period (M0100[2] = 09), except for those meeting the exclusion criteria. ***Denominator Exclusions*** Home health quality episodes for which the discharge assessment lacks a useable response: – (M1311A1[2] = '-' and/or M1311A2[2] = '-'), and – (M1311B1[2] = '-' and/or M1311B2[2] = '-'), and – (M1311C1[2] = '-' and/or M1311C2[2] = '-'), and – (M1311D1[2] = '-' and/or M1311D2[2] = '-'), and – (M1311E1[2] = '-' and/or M1311E2[2] = '-'), and – (M1311F1[2] = '-'and/or M1311F2[2] = '-') Note: Episodes with skipped responses ('^') are *included* in the denominator. ***Measure Type*** End Result Outcome – Health ***OASIS Items Used*** (M0100) Reason for Assessment (M1311A1) Number of Stage 2 pressure ulcers; (M1311A2) Number of these Stage 2 pressure ulcers that were present at the most recent SOC/ROC (M1311B1) Number of Stage 3 pressure ulcers; (M1311B2) Number of these Stage 3 pressure ulcers that were present at the most recent SOC/ROC (M1311C1) Number of Stage 4 pressure ulcers; (M1311B2) Number of these Stage 4 pressure ulcers that were present at the most recent SOC/ROC (M1311D1) Number of unstageable pressure ulcer/injuries due to non-removable dressing/device; (M1311D2) Number of these unstageable pressure ulcer/injuries that were present at the most recent SOC/ROC (M1311E1) Number of unstageable pressure ulcers due to coverage of wound bed by slough and/or eschar; (M1311E2) Number of these unstageable pressure ulcers that were present at the most recent SOC/ROC (M1311F1) Number of unstageable pressure injuries presenting as deep tissue injury; (M1311F1) Number of these unstageable pressure injuries that were present at the most recent SOC/ROC

Covariates
See the Risk Adjustment Technical Specifications in the Downloads section: https://www.cms.gov/files/document/hh-qrp-measure-specifications-changes-skin-integrity.pdf

Appendix A: Model Parameters

Table A-1. Description of Risk Factors

Recalibrated model, effective CY 2023

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
1	Age	Age: 0-54	Calculated off birth date	M0066	Birth Date	AGE_0_54	
		Age: 55-59	Calculated off birth date	M0066	Birth Date	AGE_55_59	
		Age: 60-64	Calculated off birth date	M0066	Birth Date	AGE_60_64	
		Age: 65-69	Calculated off birth date	M0066	Birth Date	AGE_65_69	Excluded category
		Age: 70-74	Calculated off birth date	M0066	Birth Date	AGE_70_74	
		Age: 75-79	Calculated off birth date	M0066	Birth Date	AGE_75_79	
		Age: 80-84	Calculated off birth date	M0066	Birth Date	AGE_80_84	
		Age: 85-89	Calculated off birth date	M0066	Birth Date	AGE_85_89	
		Age: 90-94	Calculated off birth date	M0066	Birth Date	AGE_90_94	
		Age: 95+	Calculated off birth date	M0066	Birth Date	AGE_95PLUS	
2	Gender	Patient is female	response 2	M0069	Gender	GENDER_FEMALE	Excluded category
		Patient is male	response 1	M0069	Gender	GENDER_MALE	
3	Payment source	Payment source: Medicare FFS only	response 1 & NOT any other response	M0150	Current Payment Sources for Home Care	PAY_MCARE _FFS	Excluded category
		Payment source: Medicare HMO only	response 2 & NOT any other response	M0150	Current Payment Sources for Home Care	PAY_MCARE_HMO	
		Payment source: Medicare and Medicaid	response (1 or 2) & (3 or 4)	M0150	Current Payment Sources for Home Care	PAY_MCAREANDMCAID	
		Payment Source: Medicaid only	response (3 or 4) & NOT any other response	M0150	Current Payment Sources for Home Care	PAY_MCAID_ONLY	
		Payment Source: Other combinations	Not one of the above four categories	M0150	Current Payment Sources for Home Care	PAY_OTHER_COMBO	
4	SOC/ROC and Admission Source	Start of Care and inpatient admission	M0100 = 1 & M1000 = 1, 2, 3, 4, 5, or 6	M0100, M1000	(M0100) Reason for assessment; (M1000) Admission source	SOC_INPT	Excluded category
		Start of Care and community admission	M0100 = 1 & M1000 NOT 1, 2, 3, 4, 5, or 6	M0100, M1000	(M0100) Reason for assessment; (M1000) Admission source	SOC_COMM	
		Resumption of care (after inpatient stay)	M0100=3	M0100	Reason for assessment	ROC	
5	Post-acute facility admission source	Discharged from post-acute facility in past 14 days	response 1, 2, 4, 5, or 6	M1000	Inpatient Facilities	INPT_POSTACUTE	
		Not discharged from post-acute facility	NOT response 1, 2, 4, 5, and 6	M1000	Inpatient Facilities	INPT_NOPOSTACUTE	Excluded category

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
6	Risk of Hospitalization	Risk for Hospitalization: History of falls in past 12 months	response 1	M1033	Risk for Hospitalization	RISK_HSTRY_FALLS	
		Risk for Hospitalization: Unintentional weight loss in past 12 months	response 2	M1033	Risk for Hospitalization	RISK_WEIGHTLOSS	
		Risk for Hospitalization: Multiple hospitalizations in past 6 months	response 3	M1033	Risk for Hospitalization	RISK_MLTPL_HOSPZTN	
		Risk for Hospitalization: Multiple ED visits in past 6 months	response 4	M1033	Risk for Hospitalization	RISK_ED	
		Risk for Hospitalization: Recent mental/emotional decline in past 3 months	response 5	M1033	Risk for Hospitalization	RISK_RCNT_DCLN	
		Risk for Hospitalization: Difficulty complying with medical instruction in past 3 months	response 6	M1033	Risk for Hospitalization	RISK_COMPLY	
		Risk for Hospitalization: Taking five or more medications	response 7	M1033	Risk for Hospitalization	RISK_5PLUS_MDCTN	
		Risk for Hospitalization: Reports exhaustion	response 8	M1033	Risk for Hospitalization	RISK_EXHAUST	
		Risk for Hospitalization: Other unlisted risk factors	response 9	M1033	Risk for Hospitalization	RISK_OTHR	
		None of the above	response 10	M1033	Risk for Hospitalization	RISK_NONE	
7	Availability of Assistance	Around the clock	response 1, 6, or 11	M1100	Patient Living Situation	ASSIST_ARND_CLOCK	
		Regular daytime	response 2, 7, or 12	M1100	Patient Living Situation	ASSIST_REGDAY	
		Regular nighttime	response 3, 8, or 13	M1100	Patient Living Situation	ASSIST_REGNITE	
		Occasional/none	response 4, 5, 9, 10, 14, or 15	M1100	Patient Living Situation	ASSIST_OCC_NONE	Excluded category
	Living Arrangement	Living Arrangement: Lives alone	response 1, 2, 3, 4, or 5	M1100	Patient Living Situation	LIV_ALONE	
		Living Arrangement: Lives with another person	response 6, 7, 8, 9, or 10	M1100	Patient Living Situation	LIV_OTHERS	Excluded category
		Living Arrangement: Lives in congregate situation	response 11, 12, 13, 14, or 15	M1100	Patient Living Situation	LIV_CONGREGATE	
8	Pressure Ulcers	Pressure ulcer: None or Stage I only present	M1306 response 0 & M1322 response 0, 1, 2, 3, or 4	M1306 M1322	At least 1 Stage 2 or unstageable PU? Current number of Stage 1 PUs	PU_NONE_STG1ONLY	Excluded category
		Pressure ulcer: Stage II or higher or unstageable present	response A1 > 0 OR B1 > 0 OR C1 > 0 OR D1>0 OR E1>0 OR F1>0	M1311	Number of PUs at each stage	PU_STG2PLUS_UNSTG	
9	Stasis Ulcer	Stasis Ulcer: None	response 0 or 3	M1330	Does this patient have a Stasis Ulcer?	STAS_ULCR_NONE	Excluded category
		Stasis Ulcer: 1 observable stasis ulcer	response 1	M1332	Number of stasis ulcers	STAS_ULCR_OBS_1	
		Stasis Ulcer: Multiple observable stasis ulcers	response 2,3, or 4	M1332	Number of stasis ulcers	STAS_ULCR_OBS_2PLUS	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
10	Surgical Wound	Status of Surgical Wound: None	Not response 0, 1, 2, 3	M1342	Status of Most Problematic Surgical Wound that is Observable	SRG_WND_OBS_NONE	Excluded category
		Status of Surgical Wound: Newly epithelialized	response 0	M1342	Status of Most Problematic Surgical Wound that is Observable	SRG_WND_OBS_EPI	
		Status of Surgical Wound: Fully granulating or early/partial granulation	response 1 or 2	M1342	Status of Most Problematic Surgical Wound that is Observable	SRG_WND_OBS_GRAN	
		Status of Surgical Wound: Not healing	response 3	M1342	Status of Most Problematic Surgical Wound that is Observable	SRG_WND_OBS_NOHEAL	
11	Dyspnea	Dyspnea: Not short of breath	response 0	M1400	When is the patient dyspneic or noticeably Short of Breath?	DYSP0	Excluded category
		Dyspnea: Walking more than 20 feet, climbing stairs	response 1	M1400	When is the patient dyspneic or noticeably Short of Breath?	DYSP1	
		Dyspnea: Moderate exertion	response 2	M1400	When is the patient dyspneic or noticeably Short of Breath?	DYSP2	
		Dyspnea: Minimal to no exertion	response 3 or 4	M1400	When is the patient dyspneic or noticeably Short of Breath?	DYSP34	
12	Urinary Status	Urinary incontinence/catheter: None	response 0	M1610	Urinary Incontinence or Urinary Catheter Presence	URINCONT_NONE	Excluded category
		Urinary incontinence/catheter: Incontinent	response 1	M1610	Urinary Incontinence or Urinary Catheter Presence	URINCONT_INCONT	
		Urinary incontinence/catheter: Catheter	response 2	M1610	Urinary Incontinence or Urinary Catheter Presence	URINCONT_CATH	
13	Bowel Incontinence	Bowel Incontinence Frequency: Never or very rare	response 0 and UK	M1620	Bowel Incontinence Frequency	BWL_NONE_UK	Excluded category
		Bowel Incontinence Frequency: Less than once a week	response 1	M1620	Bowel Incontinence Frequency	BWL_FR1	
		Bowel Incontinence Frequency: One to three times a week	response 2	M1620	Bowel Incontinence Frequency	BWL_FR2	
		Bowel Incontinence Frequency: Four to six times a week or more	response 3, 4 or 5	M1620	Bowel Incontinence Frequency	BWL_FR345	
		Bowel Incontinence Frequency: Ostomy for bowel elimination	NA	M1620	Bowel Incontinence Frequency	BWL_OSTOMY	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
14	Cognitive function	Cognitive Functioning: Alert and focused	response 0	M1700	Cognitive Functioning	COGN0	Excluded category
		Cognitive Functioning: Requires prompting under stress	response 1	M1700	Cognitive Functioning	COGN1	
		Cognitive Functioning: Requires assist in special circumstances	response 2	M1700	Cognitive Functioning	COGN2	
		Cognitive Function: Requires considerable assist/totally dependent	response 3 or 4	M1700	Cognitive Functioning	COGN34	
15	Confusion	Confused: never	response 0 or NA	M1710	When Confused (Reported or Observed Within the Last 14 Days)	CONF0	Excluded category
		Confused: In new or complex situations	response 1	M1710	When Confused (Reported or Observed Within the Last 14 Days)	CONF1	
		Confused: Sometimes	response 2 or 3	M1710	When Confused (Reported or Observed Within the Last 14 Days)	CONF23	
		Confused: Constantly	response 4	M1710	When Confused (Reported or Observed Within the Last 14 Days)	CONF4	
16	Anxiety	Anxiety: None of the time	response 0 or NA	M1720	When Anxious (Reported or Observed Within the Last 14 Days)	ANX0	Excluded category
		Anxiety: Less often than daily	response 1	M1720	When Anxious (Reported or Observed Within the Last 14 Days)	ANX1	
		Anxiety: Daily, but not constantly	response 2	M1720	When Anxious (Reported or Observed Within the Last 14 Days)	ANX2	
		Anxiety: All of the time	response 3	M1720	When Anxious (Reported or Observed Within the Last 14 Days)	ANX3	
17	Patient Mood Screening	PHQ-2 to 9: Does not meet criteria for further eval	(D0150A2 response 0 or 1) and (D0150B2 response 0 or 1)	D0150	Patient Mood Interview (PHQ-2 to 9)	PHQ2_TO9_NOTMEET	Excluded category
		PHQ-2 to 9: Meets criteria for further eval	(D0150A2 response 2 or 3) or (D0150B2 response 2 or 3)	D0150	Patient Mood Interview (PHQ-2 to 9)	PHQ2_TO9_MEET	
		PHQ-2 to 9: No Patient Mood Screening	(D0150A2 response "^") and ((D0150B2 response 0, 1, or "^")) or (D0150B2 response "^" and (D0150A2 response 0, 1, or "^"))	D0150	Patient Mood Interview (PHQ-2 to 9)	PHQ2_TO9_NA	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
18	Behavioral Symptoms	Behavioral: None	response 7	M1740	Cognitive, behavioral, and psychiatric symptoms that are demonstrated at least once a week (Reported or Observed)	BEHAV_NONE	
		Behavioral: Memory deficit	response 1	M1740	Cognitive, behavioral, and psychiatric symptoms that are demonstrated at least once a week (Reported or Observed)	BEHAV_MEM_DEFICIT	
		Behavioral: Impaired decision making	response 2	M1740	Cognitive, behavioral, and psychiatric symptoms that are demonstrated at least once a week (Reported or Observed)	BEHAV_IMPR_DECISN	
		Behavioral: Verbally disruptive, physical aggression, disruptive, or delusional	response 3, 4, 5 or 6	M1740	Cognitive, behavioral, and psychiatric symptoms that are demonstrated at least once a week (Reported or Observed)	BEHAV_OTHR	
19	Disruptive Behavior Frequency	Frequency of Disruptive Behavior: Never	response 0	M1745	Frequency of Disruptive Behavior Symptoms (Reported or Observed)	BEHPFR0	Excluded category
		Frequency of Disruptive Behavior: Once a month or less	response 1 or 2	M1745	Frequency of Disruptive Behavior Symptoms (Reported or Observed)	BEHPFR12	
		Frequency of Disruptive Behavior: Several times a month	response 3	M1745	Frequency of Disruptive Behavior Symptoms (Reported or Observed)	BEHPFR3	
		Frequency of Disruptive Behavior: Several times a week	response 4	M1745	Frequency of Disruptive Behavior Symptoms (Reported or Observed)	BEHPFR4	
		Frequency of Disruptive Behavior: At least once daily	response 5	M1745	Frequency of Disruptive Behavior Symptoms (Reported or Observed)	BEHPFR5	
20	Grooming	Grooming: Able to groom self, unaided	response 0	M1800	Grooming	GROOM0	Excluded category
		Grooming: Grooming utensils must be placed within reach	response 1	M1800	Grooming	GROOM1	
		Grooming: Assistance needed	response 2	M1800	Grooming	GROOM2	
		Grooming: Entirely dependent upon someone else	response 3	M1800	Grooming	GROOM3	
21	Upper Body Dressing	Ability to Dress Upper Body: No help needed	response 0	M1810	Ability to Dress Upper Body	UPPER0	Excluded category
		Ability to Dress Upper Body: Needs clothing laid out	response 1	M1810	Ability to Dress Upper Body	UPPER1	
		Ability to Dress Upper Body: Needs assistance putting on clothing	response 2	M1810	Ability to Dress Upper Body	UPPER2	
		Ability to Dress Upper Body: Entirely dependent upon someone else	response 3	M1810	Ability to Dress Upper Body	UPPER3	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
22	Lower Body Dressing	Ability to Dress Lower Body: No help needed	response 0	M1820	Ability to Dress Lower Body	LOWER0	Excluded category
		Ability to Dress Lower Body: Needs clothing/shoes laid out	response 1	M1820	Ability to Dress Lower Body	LOWER1	
		Ability to Dress Lower Body: Assist needed putting on clothing	response 2	M1820	Ability to Dress Lower Body	LOWER2	
		Ability to Dress Lower Body: Entirely dependent upon someone else	response 3	M1820	Ability to Dress Lower Body	LOWER3	
23	Bathing	Bathing: Independently in shower/tub	response 0	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH0	Excluded category
		Bathing: With the use of devices in shower/tub	response 1	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH1	
		Bathing: With intermittent assistance in shower/tub	response 2	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH2	
		Bathing: Participates with supervision in shower/tub	response 3	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH3	
		Bathing: Independent at sink, in chair, or on commode	response 4	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH4	
		Bathing: Participates with assist at sink, in chair, or commode	response 5	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH5	
		Bathing: Unable to participate; bathed totally by another	response 6	M1830	Bathing: Excludes grooming (washing face, washing hands, and shampooing hair).	BATH6	
24	Toilet Transferring	Toilet Transferring: No assistance needed	response 0	M1840	Toilet Transferring	TLTTRN0	Excluded category
		Toilet Transferring: To/from/on/off toilet with human assist	response 1	M1840	Toilet Transferring	TLTTRN1	
		Toilet Transferring: Able to self-transfer to bedside commode	response 2	M1840	Toilet Transferring	TLTTRN2	
		Toilet Transferring: Unable to transfer to/from toilet or commode	response 3 or 4	M1840	Toilet Transferring	TLTTRN34	
25	Toilet Hygiene	Toilet Hygiene Assistance: None needed	response 0	M1845	Toileting Hygiene	TLTHYG0	Excluded category
		Toilet Hygiene Assistance: Needs supplies laid out	response 1	M1845	Toileting Hygiene	TLTHYG1	
		Toilet Hygiene Assistance: Needs assistance	response 2	M1845	Toileting Hygiene	TLTHYG2	
		Toilet Hygiene Assistance: Entirely dependent	response 3	M1845	Toileting Hygiene	TLTHYG3	
26	Transferring	Transferring: No assistance needed	response 0	M1850	Transferring	TRNFR0	Excluded category
		Transferring: With minimal human assist or with device	response 1	M1850	Transferring	TRNFR1	
		Transferring: Bears weight and pivots only	response 2	M1850	Transferring	TRNFR2	
		Transferring: Unable or bedfast	response 3 or 4 or 5	M1850	Transferring	TRNFR345	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
27	Ambulation	Ambulation/Locomotion: Walk independently	response 0	M1860	Ambulation/Locomotion	AMB0	Excluded category
		Ambulation/Locomotion: One-handed device on all surfaces	response 1	M1860	Ambulation/Locomotion	AMB1	
		Ambulation/Locomotion: Two-handed device/human assist on steps	response 2	M1860	Ambulation/Locomotion	AMB2	
		Ambulation/Locomotion: Walks only with supervision or assist	response 3	M1860	Ambulation/Locomotion	AMB3	
		Ambulation/Locomotion: Chairfast or bedfast	response 4 or 5 or 6	M1860	Ambulation/Locomotion	AMB456	
28	Feeding or Eating	Eating: Independent	response 0	M1870	Feeding or Eating	EAT0	Excluded category
		Eating: Requires set up, intermittent assist or modified consistency	response 1	M1870	Feeding or Eating	EAT1	
		Eating: Unable to feed self and must be assisted throughout meal	response 2	M1870	Feeding or Eating	EAT2	
		Eating: Requires tube feedings, or no nutrients orally or via tube	response 3 or 4 or 5	M1870	Feeding or Eating	EAT345	
29	Oral Medication Management	Management of Oral Meds: Independent	response 0 or NA or missing	M2020	Management of Oral Medications: Excludes injectable and IV medications.	ORMED0	Excluded category
		Management of Oral Meds: Advance dose prep/chart needed	response 1	M2020	Management of Oral Medications: Excludes injectable and IV medications.	ORMED1	
		Management of Oral Meds: Reminders needed	response 2	M2020	Management of Oral Medications: Excludes injectable and IV medications.	ORMED2	
		Management of Oral Meds: Unable	response 3	M2020	Management of Oral Medications: Excludes injectable and IV medications.	ORMED3	
30	Supervision and Safety Assistance	None needed	response 0	M2102	Types and Sources of Assistance	SPRVSN_NONE_NEEDED	Excluded category
		Caregiver currently provides	response 1	M2102	Types and Sources of Assistance	SPRVSN_CG_PROVIDES	
		Caregiver training needed	response 2	M2102	Types and Sources of Assistance	SPRVSN_NEED_TRAINING	
		Uncertain/unlikely to be provided	response 3 or 4 or missing	M2102	Types and Sources of Assistance	SPRVSN_CG_UNCERTAIN_NONE	
31	Hierarchical Condition Categories	HCC: HIV/AIDS	2023 HCCs were generated based on 2021 Model Software/ICD-10 Mappings. Future HCCs will be generated using software with a two-year lag. For example, 2024 HCCs will be generated based on 2022 software. Source: https://www.cms.gov/medicarehealth-plansmedicareadvtgspecratestatsrisk-	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC1	
		HCC: Septicemia, sepsis, systemic inflammatory response syndrome/shock		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC2	
		HCC: Opportunistic infections		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC6	
		HCC: Metastatic cancer and acute leukemia		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC8	
		HCC: Lung and other severe cancers		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC9	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
		HCC: Lymphoma and other cancers	adjustors/2021-model-softwareicd-10-mappings	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC10	
		HCC: Colorectal, bladder, and other cancers		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC11	
		HCC: Breast, prostate, and other cancers and tumors		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC12	
		HCC: Diabetes with acute complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC17	
		HCC: Diabetes with chronic complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC18	
		HCC: Diabetes without complication		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC19	
		HCC: Protein-calorie malnutrition		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC21	
		HCC: Morbid obesity		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC22	
		HCC: Other significant endocrine and metabolic disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC23	
		HCC: End-stage liver disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC27	
		HCC: Cirrhosis of liver		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC28	
		HCC: Chronic hepatitis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC29	
		HCC: Intestinal obstruction/perforation		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC33	
		HCC: Chronic pancreatitis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC34	
		HCC: Inflammatory bowel disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC35	
		HCC: Bone/joint/muscle infections/necrosis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC39	
		HCC: Rheumatoid arthritis and inflammatory connective tissue disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC40	
		HCC: Severe hematological disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC46	
		HCC: Disorders of immunity		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC47	
		HCC: Coagulation defects and other specified hematological disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC48	
		HCC: Dementia with complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC51	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
		HCC: Dementia without complication		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC52	
		HCC: Substance use with psychotic complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC54	
		HCC: Substance use disorder, moderate/severe, or substance use with complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC55	
		HCC: Substance use disorder, mild, except alcohol and cannabis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC56	
		HCC: Schizophrenia		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC57	
		HCC: Reactive and unspecified psychosis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC58	
		HCC: Major depressive, bipolar, and paranoid disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC59	
		HCC: Personality disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC60	
		HCC: Quadriplegia		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC70	
		HCC: Paraplegia		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC71	
		HCC: Spinal cord disorders/injuries		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC72	
		HCC: Amyotrophic lateral sclerosis and other motor neuron disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC73	
		HCC: Cerebral palsy		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC74	
		HCC: Myasthenia gravis/myoneural disorders and Guillain-Barre syndrome/inflammatory and toxic neuropathy		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC75	
		HCC: Muscular dystrophy		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC76	
		HCC: Multiple sclerosis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC77	
		HCC: Parkinson's and Huntington's diseases		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC78	
		HCC: Seizure disorders and convulsions		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC79	
		HCC: Coma, brain compression/anoxic damage		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC80	
		HCC: Respirator dependence/tracheostomy status		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC82	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
		HCC: Respiratory arrest		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC83	
		HCC: Cardio-respiratory failure and shock		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC84	
		HCC: Congestive heart failure		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC85	
		HCC: Acute myocardial infarction		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC86	
		HCC: Unstable angina and other acute ischemic heart disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC87	
		HCC: Angina pectoris		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC88	
		HCC: Specified heart arrhythmias		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC96	
		HCC: Intracranial hemorrhage		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC99	
		HCC: Ischemic or unspecified stroke		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC100	
		HCC: Hemiplegia/hemiparesis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC103	
		HCC: Monoplegia, other paralytic syndromes		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC104	
		HCC: Atherosclerosis of the extremities with ulceration or gangrene		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC106	
		HCC: Vascular disease with complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC107	
		HCC: Vascular disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC108	
		HCC: Cystic fibrosis		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC110	
		HCC: Chronic obstructive pulmonary disease		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC111	
		HCC: Fibrosis of lung and other chronic lung disorders		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC112	
		HCC: Aspiration and specified bacterial pneumonias		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC114	
		HCC: Pneumococcal pneumonia, empyema, lung abscess		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC115	
		HCC: Proliferative diabetic retinopathy and vitreous hemorrhage		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC122	
		HCC: Exudative macular degeneration		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC124	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
		HCC: Dialysis status		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC134	
		HCC: Acute renal failure		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC135	
		HCC: Chronic kidney disease, stage 5		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC136	
		HCC: Chronic kidney disease, severe (stage 4)		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC137	
		HCC: Chronic kidney disease, moderate (stage 3)		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC138	
		HCC: Pressure ulcer of skin with necrosis through to muscle, tendon, or bone		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC157	
		HCC: Pressure ulcer of skin with full thickness skin loss		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC158	
		HCC: Pressure ulcer of skin with partial thickness skin loss		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC159	
		HCC: Chronic ulcer of skin, except pressure		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC161	
		HCC: Severe skin burn or condition		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC162	
		HCC: Severe head injury		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC166	
		HCC: Major head injury		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC167	
		HCC: Vertebral fractures without spinal cord injury		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC169	
		HCC: Hip fracture/dislocation		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC170	
		HCC: Traumatic amputations and complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC173	
		HCC: Complications of specified implanted device or graft		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC176	
		HCC: Major organ transplant or replacement status		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC186	
		HCC: Artificial openings for feeding or elimination		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC188	
		HCC: Amputation status, lower limb/amputation complications		M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HCC189	

Table A-2. Summary of Number of Risk Factors and Model Fit Statistics

Based on quality episodes starting and ending in CY 2021

Model	Improvement in Ambulation/ Locomotion	Improvement in Bathing	Improvement in Bed Transferring	Improvement in Dyspnea	Improvement in Management of Oral Medications
Number of Risk Factors by Model and Measure					
Model Prior to CY 2023*	112	112	110	96	112
Recalibrated Model, CY 2023 forward	135	127	116	112	128
C-Statistic by Model and Measure					
Model Prior to CY 2023*	0.778	0.758	0.790	0.690	0.787
Recalibrated Model, CY 2023 forward	0.785	0.771	0.809	0.716	0.814
Pseudo-R2 Statistic by Model and Measure					
Model Prior to CY 2023*	0.165	0.144	0.188	0.073	0.190
Recalibrated Model, CY 2023 forward	0.170	0.151	0.204	0.089	0.214

*Model developed in 2021.

Table A-3. Estimated Coefficients

Recalibrated model, effective CY 2023 using quality episodes ending CY 2021

Risk Factor #	Risk Factor	Covariate #	Covariate Name	Excluded Category Indicator	OASIS-Based Outcome Measure				
					Improvement in Ambulation/ Locomotion	Improvement in Bathing	Improvement in Bed Transferring	Improvement in Dyspnea	Improvement in Management of Oral Medications
1	Age	1	AGE_0_54		-0.1456	-0.1063	-0.0709	-0.0271	-0.1029
		2	AGE_55_59		-0.1524	-0.1198	-0.0997	-0.0980	-0.0838
		3	AGE_60_64		-0.1468	-0.1312	-0.1228	-0.1135	-0.1133
		4	AGE_65_69	Excluded category					
		5	AGE_70_74		0.0027	-0.0032	0.0177	0.0246	-0.0388
		6	AGE_75_79		-0.0347	-0.0463	-0.0106	-0.0045	-0.1388
		7	AGE_80_84		-0.1197	-0.1330	-0.0889	-0.0256	-0.2890
		8	AGE_85_89		-0.2078	-0.2358	-0.1781	-0.0494	-0.4187
		9	AGE_90_94		-0.3494	-0.3947	-0.3020	-0.1196	-0.5769
		10	AGE_95PLUS		-0.5530	-0.6350	-0.4972	-0.2309	-0.7774
2	Gender	11	GENDER_FEMALE	Excluded category					
		12	GENDER_MALE		0.0541	0.0624	0.0425	-0.0342	-0.0575
3	Payment source	13	PAY_MCARE _FFS	Excluded category					
		14	PAY_MCARE_HMO		-0.0943	-0.0975	-0.0537	-0.0074	-0.0298
		15	PAY_MCAREANDMCAID		-0.3388	-0.3844	-0.2674	-0.1760	-0.3633
		16	PAY_MCAID_ONLY		-0.1492	-0.2279	-0.0932	-0.1128	-0.1775
		17	PAY_OTHER_COMBO		-0.0129	-0.0099	0.1052	0.1098	0.0730
4	SOC/ROC and Admission Source	18	SOC_INPT	Excluded category					
		19	SOC_COMM		-0.4099	-0.3616	-0.4107	-0.2979	-0.3457
		20	ROC		-0.4025	-0.3934	-0.4373	-0.3715	-0.3801
5	Post-acute facility admission source	21	INPT_POSTACUTE		-0.2154	-0.1538	-0.1413	-0.0830	-0.1567
		22	INPT_NOPOSTACUTE	Excluded category					

Risk Factor #	Risk Factor	Covariate #	Covariate Name	Excluded Category Indicator	OASIS-Based Outcome Measure				
					Improvement in Ambulation/ Locomotion	Improvement in Bathing	Improvement in Bed Transferring	Improvement in Dyspnea	Improvement in Management of Oral Medications
6	Risk of Hospitalization	23	RISK_HSTRY_FALLS		-0.0572				
		24	RISK_WEIGHTLOSS						
		25	RISK_MLTPL_HOSPZTN		-0.0639	-0.0564	-0.0495	-0.0992	-0.0362
		26	RISK_ED						
		27	RISK_RCNT_DCLN		0.0954	0.1065	0.1673	0.0897	0.0569
		28	RISK_COMPLY		0.0932	0.1003			0.0938
		29	RISK_5PLUS_MDCTN					-0.0715	
		30	RISK_EXHAUST		0.0828	0.1071			0.1073
		31	RISK_OTHR						
		32	RISK_NONE		0.2274	0.2396	0.2185	0.2068	0.2412
7	Availability of Assistance	33	ASSIST_OCC_NONE	Excluded category					
		34	ASSIST_REGNITE		-0.0507	-0.1076	-0.0156	-0.0698	-0.1161
		35	ASSIST_REGDAY		-0.2123	-0.2527	-0.2661	-0.1049	-0.3156
		36	ASSIST_ARND_CLOCK		-0.2313	-0.2625	-0.2192	-0.1018	-0.3955
	Living Arrangement	37	LIV_ALONE		0.1168	0.1423	0.1471		0.2822
		38	LIV_OTHERS	Excluded category					
		39	LIV_CONGREGATE		-0.1484	-0.0877	-0.0291		-0.7483
8	Pressure Ulcers	40	PU_NONE_STG1ONLY	Excluded category					
		41	PU_STG2PLUS_UNSTG		-0.4092	-0.5331	-0.4421	-0.3615	-0.3643
9	Stasis Ulcer	42	STAS_ULCR_OBS_NONE	Excluded category					
		43	STAS_ULCR_OBS_1		-0.0652	-0.1280	-0.1751	-0.2211	-0.0461
		44	STAS_ULCR_OBS_2PLUS		-0.2631	-0.3382	-0.3025	-0.3887	-0.1678
10	Surgical Wound	45	SRG_WND_OBS_NONE	Excluded category					
		46	SRG_WND_OBS_EPI		0.3275	0.3605	0.3280	0.2260	0.3663
		47	SRG_WND_OBS_GRAN		0.3175	0.3258	0.2772	0.1467	0.3123
		48	SRG_WND_OBS_NOHEAL		0.4799	0.4503	0.4805	0.3374	0.5213
11	Dyspnea	49	DYSP0	Excluded category					
		50	DYSP1		0.2881	0.2862	0.2763		0.2828
		51	DYSP2		0.2484	0.3144	0.1580	0.9754	0.3647
		52	DYSP34		0.3735	0.3893	0.2829	1.6353	0.5681
12	Urinary Status	53	URINCONT_NONE	Excluded category					
		54	URINCONT_INCONT		-0.2766	-0.2719	-0.3118	-0.2332	-0.2565
		55	URINCONT_CATH		-0.5689	-0.5877	-0.6072	-0.3626	-0.4438

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13	Bowel Incontinence	56	BWL_NONE	Excluded category					
		57	BWL_FR1		-0.1741	-0.1990	-0.1618	-0.1078	-0.1074
		58	BWL_FR2		-0.3316	-0.3699	-0.3477	-0.2217	-0.2457
		59	BWL_FR345		-0.5065	-0.5877	-0.5966	-0.2900	-0.4157
		60	BWL_OSTOMY		-0.1300	-0.2597	-0.1582	-0.0676	-0.1078
14	Cognitive function	61	COGN0	Excluded category					
		62	COGN1		-0.1181	-0.1476	-0.1871	-0.0873	-0.2778
		63	COGN2		-0.1983	-0.2710	-0.2308	-0.0939	-0.4688
		64	COGN34		-0.3252	-0.4478	-0.3449	-0.0720	-0.6760
15	Confusion	65	CONF0	Excluded category					
		66	CONF1		-0.1194	-0.1310	-0.1325	-0.0977	-0.2780
		67	CONF23		-0.2141	-0.2406	-0.2167	-0.0870	-0.4988
		68	CONF4		-0.4083	-0.4566	-0.3521	-0.0153	-0.8084
16	Anxiety	69	ANX0	Excluded category					
		70	ANX1		0.0028	-0.0095	-0.0127	-0.1187	0.0195
		71	ANX2		0.0401	0.0213	0.0326	-0.1241	0.0653
		72	ANX3		0.1534	0.1350	0.1702	-0.0400	0.1908
17	Depression Screening	73	PHQ2_TO9_NOTMEET	Excluded category					
		74	PHQ2_TO9_MEET		-0.1260	-0.1624	-0.1280	-0.1882	-0.1207
		75	PHQ2_TO9_NA		-0.2227	-0.2877	-0.2476	-0.1272	-0.2963
18	Behavioral Symptoms	76	BEHAV_NONE		0.2240	0.2687	0.1888	0.1323	0.3637
		77	BEHAV_MEM_DEFICIT						-0.0842
		78	BEHAV_IMPR_DECISN		-0.0430			-0.1139	
		79	BEHAV_OTHR		-0.2320	-0.2405	-0.2283	-0.1781	-0.2885
19	Disruptive Behavior Frequency	80	BEHPFR0	Excluded category					
		81	BEHPFR12		0.2049	0.2519	0.1083	0.1608	0.2517
		82	BEHPFR3		0.1810	0.1987	0.1323	0.1527	0.2214
		83	BEHPFR4		0.1836	0.1996	0.1933	0.2144	0.2205
		84	BEHPFR5		0.1866	0.2012	0.2380	0.2765	0.1845
20	Grooming	85	GROOM0	Excluded category					
		86	GROOM1						
		87	GROOM2						
		88	GROOM3						

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21	Upper Body Dressing	89	UPPER0	Excluded category					
		90	UPPER1			0.0711			0.0544
		91	UPPER2			-0.1187			-0.1747
		92	UPPER3			-0.2419			-0.4250
22	Lower Body Dressing	93	LOWER0	Excluded category					
		94	LOWER1		0.2481	0.1723			0.1643
		95	LOWER2		0.1469	0.1050			0.1861
		96	LOWER3		0.1168	0.0941			0.2389
23	Bathing	97	BATH0	Excluded category					
		98	BATH1		-0.3104			0.0309	
		99	BATH2		-0.2311	1.0554		0.0342	
		100	BATH3		-0.3304	1.8635		0.0785	
		101	BATH4		-0.2710	2.3000		0.1120	
		102	BATH5		-0.1907	2.8351		0.3334	
		103	BATH6		-0.5194	3.0200		0.0457	
24	Toilet Transferring	104	TLTTRN0	Excluded category					
		105	TLTTRN1		0.2398	0.2257	0.1285	0.1942	0.1972
		106	TLTTRN2		0.1577	0.2051	0.0012	0.1588	0.2369
		107	TLTTRN34		0.2654	0.2315	-0.0994	0.1998	0.3116
25	Toilet Hygiene	108	TLTHYG0	Excluded category					
		109	TLTHYG1		0.0035	-0.0244	-0.0612		0.0022
		110	TLTHYG2		-0.2067	-0.1383	-0.3749		-0.1159
		111	TLTHYG3		-0.4120	-0.3989	-0.7458		-0.3828
26	Transferring	112	TRNFR0	Excluded category					
		113	TRNFR1		-0.2762	-0.0967		0.0192	0.0664
		114	TRNFR2		-0.0846	0.1528	2.2364	0.3004	0.3712
		115	TRNFR345		-0.1754	0.0153	2.8715	0.2712	0.3171
27	Ambulation	116	AMB0	Excluded category					
		117	AMB1			-0.2624	-0.5265	-0.1522	-0.0372
		118	AMB2		0.1031	-0.5863	-0.9988	-0.2658	-0.1952
		119	AMB3		1.9729	-0.2801	-0.5887	-0.0021	0.1436
		120	AMB456		1.4478	-1.1906	-1.6254	-0.4108	-0.4173

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28	Feeding or Eating	121	EAT0	Excluded category					
		122	EAT1		-0.0361	-0.0428	-0.1678		-0.0439
		123	EAT2		-0.1059	-0.1659	-0.3406		-0.2160
		124	EAT345		-0.2458	-0.5826	-0.5647		-0.5694
29	Oral Medication Management	125	ORMED0	Excluded category					
		126	ORMED1		0.1451		0.0481	0.1133	
		127	ORMED2		0.3199		0.0854	0.2211	1.2634
		128	ORMED3		0.3822		0.3121	0.3987	1.6797
30	Supervision and Safety Assistance	129	SPRVSN_NONE_NEEDED	Excluded category					
		130	SPRVSN_CG_PROVIDES		-0.1582	-0.1896	-0.1882	-0.0892	-0.3029
		131	SPRVSN_NEED_TRAINING		-0.0290	-0.0066	-0.1006	0.0020	-0.1098
		132	SPRVSN_CG_UNCERTAIN_NONE		-0.1936	-0.1842	-0.2426	-0.2171	-0.1326
31	Hierarchical Condition Categories	133	hcc1						
		134	hcc2						
		135	hcc6						
		136	hcc8		-0.6926	-0.7576	-0.6812	-0.7416	-0.6601
		137	hcc9		-0.3042	-0.3821	-0.3100	-0.5132	-0.3503
		138	hcc10		-0.2249	-0.2263	-0.2188	-0.2383	-0.2504
		139	hcc11					-0.1548	
		140	hcc12					-0.0896	
		141	hcc17						
		142	hcc18		-0.1341	-0.1027	-0.1468	-0.1533	-0.1249
		143	hcc19						
		144	hcc21		-0.1527	-0.1790	-0.1237	-0.1561	-0.2112
		145	hcc22		-0.2609	-0.3291	-0.2272	-0.3539	
		146	hcc23						
		147	hcc27		-0.2840	-0.3354	-0.3111	-0.3603	-0.3962
		148	hcc28		-0.2068	-0.2181	-0.1808	-0.2448	-0.2921
		149	hcc29						
		150	hcc33						
		151	hcc34						
		152	hcc35		0.2278	0.1976	0.2034		
		153	hcc39		-0.1146	-0.1078	-0.1104		
		154	hcc40						
		155	hcc46		-0.1946			-0.1868	

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		156	hcc47						
		157	hcc48						
		158	hcc51		-0.3334	-0.3475	-0.2205		-0.5627
		159	hcc52		-0.2140	-0.2425	-0.1292	0.0740	-0.4916
		160	hcc54						-0.2793
		161	hcc55						
		162	hcc56						
		163	hcc57						-0.4456
		164	hcc58						
		165	hcc59				-0.0884	-0.0641	-0.1214
		166	hcc60						-0.5231
		167	hcc70		-1.0791	-1.1827	-1.2492		-0.9412
		168	hcc71		-1.2517	-0.4245	-0.7906		-0.1706
		169	hcc72		-0.6073	-0.2782	-0.3501		-0.1680
		170	hcc73		-1.6164	-1.5456	-1.5024	-1.1146	-1.4899
		171	hcc74		-0.9118	-0.7945	-0.8181		-0.7450
		172	hcc75		-0.1998	-0.1440	-0.1571	-0.1473	
		173	hcc76		-1.1144	-0.8187	-1.1053	-0.3647	-0.6423
		174	hcc77		-0.7089	-0.4841	-0.6226		-0.3269
		175	hcc78		-0.4362	-0.3724	-0.3307	-0.0508	-0.3889
		176	hcc79		-0.1529	-0.1597	-0.1281		-0.2552
		177	hcc80		-0.2845	-0.3132			-0.4614
		178	hcc82			-0.4302		-0.6123	-0.4519
		179	hcc83						
		180	hcc84			-0.0655		-0.3892	-0.0782
		181	hcc85		-0.1761	-0.1912	-0.1806	-0.2845	-0.1683
		182	hcc86					-0.0727	
		183	hcc87						
		184	hcc88					-0.1100	
		185	hcc96						
		186	hcc99						
		187	hcc100		-0.4052	-0.4270	-0.4065	-0.3411	-0.3891
		188	hcc103		-0.4304	-0.3310	-0.3320		-0.4054
		189	hcc104		-0.1988				-0.1673
		190	hcc106		-0.6090	-0.5298	-0.5617	-0.3773	-0.3128

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		191	hcc107					-0.0778	
		192	hcc108		-0.1139				
		193	hcc110						
		194	hcc111		-0.1551	-0.1580	-0.1317	-0.4785	-0.1289
		195	hcc112		-0.1177			-0.5441	-0.1223
		196	hcc114		-0.1538	-0.1586	-0.1344		-0.2868
		197	hcc115						
		198	hcc122						
		199	hcc124						
		200	hcc134		-0.7258	-0.6931	-0.7056	-0.5043	-0.6666
		201	hcc135					-0.0770	
		202	hcc136		-0.5036	-0.4766	-0.4506	-0.2851	-0.4583
		203	hcc137		-0.0805	-0.1050	-0.1009	-0.1097	-0.0716
		204	hcc138						
		205	hcc157		-0.6076	-0.4686	-0.6929	-0.3237	-0.3355
		206	hcc158		-0.2622	-0.1793	-0.3303		-0.1070
		207	hcc159		-0.1399		-0.1601		
		208	hcc161		-0.3095	-0.3639	-0.3576	-0.3122	-0.1465
		209	hcc162						
		210	hcc166						
		211	hcc167						-0.2139
		212	hcc169						
		213	hcc170		-0.2435				
		214	hcc173		-0.6830				
		215	hcc176						
		216	hcc186		0.3043		0.3267		
		217	hcc188						
		218	hcc189		-1.0179	-0.3925	-0.4743	-0.1797	-0.2396
32	CONSTANT	219	_CONS		0.9281	0.9135	2.0258	1.2072	0.9086