



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 2021 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 Certification and Survey Provider Enhanced Reports (CASPER) data reports for the OASIS-based quality measures: CASPER Review and Correct reports, CASPER Quality Measure (QM) reports and preview reports for Home Health Compare. CASPER 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.

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. (August 2018). Quality Measures. Accessed on November 14, 2018. 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.
Depression Assessment Conducted	0198-10	0518	How often the home health team checked patients for depression.
Multifactor fall risk assessment conducted for all patients who can ambulate	0952-10	0537	How often the home health team checked patients' risk of falling.
Diabetic foot care and patient education implemented	0958-10	0519*	For patients with diabetes, how often the home health team got doctor's orders, gave foot care, and taught patients about foot care.
Influenza Immunization	0212-10	0522	How often the home health team made sure that their patients have received a flu shot for the current flu season.
Pneumococcal polysaccharide vaccine ever received	0214-10	0525*	How often the home health team made sure that their patients have received a pneumococcal vaccine (pneumonia shot).
Drug Education	0978-10	NA	How often the home health team taught patients (or their family caregivers) about their drugs.
Drug Regimen Review	2946-10	NA	How often physician-recommended actions to address medication issues were completed timely
Application of Functional Assessment/Care Plan	5853-10	2631	Application of Percent of Long Term Care Hospital (LTCH) Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function
Improvement in Ambulation- Locomotion	0183-10	0167	How often patients got better at walking or moving around.
Improvement in Bed Transferring	1000-10	0175	How often patients got better at getting in and out of bed.
Improvement in Pain Interfering with Activity	0191-10	0177	How often patients had less pain when moving around.
Improvement in Bathing	0185-10	0174	How often patients got better at bathing.
Improvement in Management of Oral Medications	0189-10	0176	How often patients got better at taking their drugs correctly by mouth.
Improvement in Dyspnea	0187-10	0179*	How often patients' breathing improved.
Falls with Major Injury	3493-10	0674	Application of Percent of Residents Experiencing One or More Falls with Major Injury
Changes in Skin Integrity: Pressure Ulcer/Injury	5852-10	NA	Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury
New or Worsened Pressure Ulcers	4803-10	0678	How often patients developed new or worsened pressure ulcers
Improvement in status of surgical wounds	0193-10	0178*	How often patients' wounds improved or healed after an operation.

* - 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 HHQRP

Quality Measure	CMS ID	Measure Reference Name	Removal Date from Review & Correct	Removal Date from Preview Report	Removal Date from HHC
Depression Assessment Conducted	0198-10	How often the home health team checked patients for depression.	5/15/20	October 2020	January 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	January 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	January 2021 January 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	January 2021
Improvement in Status of Surgical Wounds	0193-10	How often patients' wounds improved or healed after an operation.	5/15/20	October 2020	January 2021

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: 2495.10.)

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 in 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 (facility) divided by the expected number of readmissions for the same residents 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)

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.^{5 6}

⁵ National Uniform Billing Committee Official UB-04 Data Specifications Manual 2017, Version 11, July 2016, Copyright 2016, American Hospital Association.

⁶ 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 that board and care homes, assisted living facilities, or other settings included in the definition of "community"

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-ORP-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>

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.

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

A quality episode of care is the unit of analysis for OASIS-based measures. This section provides the steps to construct a home health quality episode of care from OASIS assessments. OASIS data are not collected 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 of care:

- M0100_ASSMT_REASON: Reason for assessment
- FAC_INT_ID: Facility internal ID
- STATE_CD: State abbreviation
- EFCTV_DT: Effective date of the assessment⁷
- RES_INT_ID: Unique patient ID⁸
- ASSESSMENT_ID: Unique OASIS assessment ID⁸

OASIS assessments are transmitted to the National Submissions Database residing on a secure database server maintained by CMS. Episodes of care 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 an episode of care. During this process, a unique patient ID (RES_INT_ID) and ASSESSMENT_ID are assigned to each assessment. Episodes of care for which either the beginning or end assessment is missing, or for which assessments are out of sequence, are not included. Quality episodes⁹ are not created for patients who meet the following generic exclusions for OASIS-based measures: patients who 1) have a home care payment source other than 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; 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 FAC_INT_ID, and the unique patient ID is a combination of STATE_CD and RES_INT_ID.

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

⁷ 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.

⁸ RES_INT_ID and ASSESSMENT_ID are assigned to each assessment during processing; the provider does not submit this information.

⁹ Note that quality episodes are not the same as payment, or Prospective Payment System (PPS) episodes.

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 more¹⁰:
 - 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 FAC_INT_ID, RES_INT_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 FAC_INT_ID, RES_INT_ID, STATE_CD, step through the assessments to find the latest assessment with M0100_ASSMT_REASON = 06, 07, 08, or 09.¹¹
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:
 - FAC_INT_ID
 - RES_INT_ID
 - 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

¹⁰ 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>

¹¹ 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.

Chapter 4. Certification and Survey Provider Enhanced Reports (CASPER) Data Selection for Assessment-Based (OASIS) Quality Measures

The purpose of this chapter is to present the data selection criteria for the **CASPER Review and Correct Reports** and the **CASPER 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 CASPER.

- **The CASPER Review and Correct Reports** contain agency-level measure information and are updated on a quarterly basis with data refreshed weekly as data become available. These reports allow providers to obtain agency-level performance data for the past 12 months (four full quarters) **and are restricted to only the 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 cumulative 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 CASPER QM Reports** for HH QRP measures¹² are provided monthly and 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 (aka “tally” report). The agency-level reports have two reporting periods, current and prior, to allow comparison of agency performance between the two periods. 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 are updated monthly, at the agency- and patient-level, as data becomes available. The performance data contains the current quarter (may be partial) and the past three quarters, updated based on the schedule presented in Table 4-2.
 - The claims-based measures 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, and annually for public reporting.

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

- Providers can also access two types of **Preview Reports** through CASPER. One report previews values for all measures that will be displayed on Home Health Compare in the coming refresh. The second displays the Quality of Patient Care¹³ star rating and its derivation. Both reports are made available in CASPER 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.

¹² There are additional reports available in CASPER 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.

¹³ 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>

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

Section 1: CASPER Review and Correct Reports

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

1. Quarterly reports contain quarterly rates and a cumulative rate.
 - a. The quarterly rates will be displayed using up to one quarter of data.
 - b. The cumulative rates will be displayed using all data in the target period.
 - i. **For all measures:** the cumulative rate is derived by including all episode-level records in the numerator for the target period, which do not meet the exclusion criteria, and dividing by all episode-level records included in the denominator for the target 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 target period) is available for previously existing quality measures. Only partial data will be available for new measures until a target period of data has accumulated. Once a target 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 CASPER 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 through the end of 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>

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

Review and Correct Periods			Home Health Compare (HHC) Refresh	
Review & Correct (R&C) Reports	Dates of Quality Episodes That May Be Corrected	Deadline for submitting missing or corrected data	Reporting Period	HH Compare Refresh
<i>The date that these CASPER R&C Reports are posted</i>	<i>Data can be corrected for quality episodes in the last quarter included in this Review and Correct Period*</i>	<i>Last date of the Review and Correct Period for correcting data in the last quarter of this HHC reporting period</i>	<i>OASIS quality episodes ending during this time period are <u>first</u> included on HHC</i>	<i>Month/Year</i>
1/1/2019	10/1/2018-12/31/2018	5/15/2019	1/1/2018-12/31/2018	October 2019
4/1/2019	1/1/2019-3/31/2019	8/15/2019	4/1/2018-3/31/2019	January 2020
7/1/2019	4/1/2019-6/30/2019	11/15/2019	7/1/2018-6/30/2019	April 2020
10/1/2019	7/1/2019-9/30/2019	2/15/2020	10/1/2018-9/30/2019	July 2020

*Note that there is some overlap between the R&C reporting periods in terms for data that can be corrected when each R&C report is posted. For example, when the 4/1/2019 R&C report is released, data from 10/1/2019 to 12/31/2018 can be corrected until 5/15/2019 and data from 1/1/2019 to 3/31/2019 can be corrected until 8/15/2019.

Section 2: CASPER Quality Measure (QM) Reports

Below are the specifications for the CASPER QM Reports for the HH QRP measures presented in **Chapter 7**. The same steps are used to generate both agency- 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 target period.
2. The illustration of the reporting timeline for the monthly CASPER 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 CASPER QM Reports for OASIS Quality Measures

CASPER QM Report Calculation Month	Discharges Through the Month of	Discharge Dates Included in the Report ¹
January 2019	October 2018	November 1, 2017 – October 31, 2018
February 2019	November 2018	December 1, 2017 – November 30, 2018
March 2019	December 2018	January 1 – December 31, 2018
April 2019	January 2019	February 1, 2018 – January 31, 2019
May 2019	February 2019	March 1, 2018 – February 28, 2019
June 2019	March 2019	April 1, 2018 – March 31, 2019
July 2019	April 2019	May 1, 2018 – April 30, 2019
August 2019	May 2019	June 1, 2018 – May 31, 2019
September 2019	June 2019	July 1, 2018 – June 30, 2019
October 2019	July 2019	August 1, 2018 – July 31, 2019
November 2019	August 2019	September 1, 2018 – August 31, 2019
December 2019	September 2019	October 1, 2018 – September 30, 2019

Section 3: Provider Preview Reports

Preview reports are provided for measures that are reported on Home Health Compare. Preview Reports are made available in HHAs' CASPER shared folders approximately three months prior to each Home Health Compare refresh. There are two types of preview reports, one that displays all measures as they would be shown on Home Health Compare in the next refresh and a separate preview report for the QoPC Star Rating. These reports are delivered separately into the CASPER 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 Drug Education on All Medications Provided to Patient/Caregiver quality measure are computed by: 1) counting HH quality episodes where the 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; and 2) computing the percent of HH quality episodes in which this education occurred for all patients who were taking medication for each HHA. 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 2018 through Q4 2018 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 2018 are selected.
2. **HH Quality Episode Creation.** Using the methodology described in **Chapter 3**, HH 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 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 are the measures reported via CASPER that 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 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 the time can occur either as a result of the care provided or the natural progression of disease and disability. 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. 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 treat patients. Process measures are not risk adjusted, nor are certain outcome measures that are very low prevalence, are considered "never events", or 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 risk of an outcome. Detailed specifications for resident-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 nine of the assessment-based quality measures for the HH setting are adjusted using quality episode-level covariates for HH QRP:

- Improvement in Ambulation- Locomotion (NQF #0167) (CMS ID: 0183-10)
- Improvement in Bed Transferring (NQF #0175) (CMS ID: 1000-10)

- Improvement in Pain Interfering with Activity (NQF #0177) (CMS ID: 0191-10)
- Improvement in Bathing (NQF #0174) (CMS ID: 0185-10)
- Improvement in Management of Oral Medications (NQF #0176) (CMS ID: 0189-10)
- Improvement in Dyspnea (NQF #0179) (CMS ID: 0187-10)
- Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: 5852-10)¹⁴
- Percent of patients with pressure ulcers that are new or worsened (NQF #0678) (CMS ID: 4083-10)¹⁵
- Improvement in Surgical Wounds (NQF #0178 (CMS ID 0193-10)

Section 2: Calculating Risk Adjusted Quality Measures

The following steps are used to calculate each quality measure after the appropriate exclusions are made:

A. Calculate the agency observed score (steps 1 through 3)

Step 1. Calculate the denominator count:

Calculate the total number of quality episodes with a selected target OASIS assessment in the measure time window 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, following each measure's specifications.

Step 3. Calculate the agency's 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 (technical specifications for risk factors are in **Section III**):

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:¹⁶

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

¹⁴ The risk adjustment model for this measure was under development at the time of the writing of this manual.

¹⁵ This measure will be replaced by the Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury QM and publicly reported by January, 2021.

¹⁶ Predicted rates are only calculated for episodes with non-missing observed rates.

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).

$$[2] \text{ Quality measure triggered (yes=1, no=0)} = B_0 + B_1 \cdot \text{COVA} + B_2 \cdot \text{COVB} + \dots + B_N \cdot \text{COVN}$$

Where B_0 is the logistic regression constant, B_1 is the logistic regression coefficient for the first covariate, COVA is the episode-level rate for the first covariate, B_2 is the logistic regression coefficient for the second covariate, and COVB is the 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*.¹⁷

C. Calculate the agency's 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.

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

Step 7. Calculate the 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. Note that the sample will include only those quality episodes with non-missing data for the component covariates.

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

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

$$[3] \text{ agency risk adjusted rate} = \text{agency observed rate} + \text{national predicted rate} - \text{agency predicted rate}$$

If the adjusted rate is greater than 100%, the adjusted rate is set to 100%. Similarly, if the result is a negative number the adjusted rate is set to zero

Section 3: Identifying Risk Factors¹⁸

The risk adjustment model presented in Appendix A was developed using OASIS national repository data from assessments submitted between January 1, 2016 and December 31, 2016 (~6.4 million episodes of care). The population of 6.4 million episodes for calendar year 2016 was split in half such that 3.2 million episodes were used as a developmental sample and 3.2 million episodes were used as a validation sample. The following process was used to identify unique contributing risk factors to the prediction model:

¹⁷ *Recalibrated Risk Adjustment Model_Risk Factors_Model Fit_Coefficients.pdf* containing risk factors, model fit statistics, and estimated coefficients is available in the Downloads section of the Home Health Quality Measures website: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html>.

¹⁸ The “Percent of patients with pressure ulcers that are new or worsened” measure is currently risk adjusted using a pre-determined set of specified risk factors intended to align across all post-acute care settings. For more information, see https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/HH-QRP-Measure-Risk-Specifications_New-and-Worsened-Pressure-Ulcers.pdf.

1. Risk factors were identified based on OASIS items that will remain following the OASIS-D transition. 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 35 content focus groups (e.g., functional status, ICD 10-based conditions, 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 <0.001 are kept for further review.
3. The list of risk factors that achieved the probability <0.001 level were reviewed. 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 probability <0.001 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 is statistically significant at <0.001 , the entire content focus group is removed from the model.
4. A logistic regression was computed on the list of risk factors that had achieved probability <0.001 in Step 3 above.
5. Goodness of fit statistics (McFadden's R^2 and C-statistic) 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 Logical Specifications for Assessment- Based (OASIS) Quality Measures

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* Denotes measures removed from the HH QRP through rule-making, but currently reported on Home Health Compare.

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 M1311, M1313, GG0130, GG0170, M2001, M2003, M2005, J1800 and J1900. A dash (–) value indicates that no information is available. In general, CMS expects dash use to be a rare occurrence. **If an item used in the measure calculation is dashed, the measure value cannot be calculated unless otherwise noted.**

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
<p>Numerator</p> <p>Home health quality episodes for which the SOC/ROC date was:</p> <ul style="list-style-type: none"> (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)) <p>If the episode begins with resumption of care, replace M0030[1] with M0032[1].</p> <p>Denominator</p> <p>All home health quality episodes except for those meeting the exclusion criteria.</p> <p>Denominator Exclusions</p> <ul style="list-style-type: none"> – Episodes for which the physician-ordered date is NA and the physician referral date is BLANK: M0102[1] = NA and M0104[1] = BLANK or – 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 <p>Measure Type</p> <p>Process - Timely Care</p> <p>OASIS Items Used</p> <p>(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</p>

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

*Depression Assessment Conducted***Table 7-2. Depression Assessment Conducted NQF #0518 (CMS ID 0198-10)**

Measure Description
This measure reports the percentage of home health quality episodes in which patients were screened for depression using a standardized depression screening tool at start or resumption of care.
Measure Specifications
<p>Numerator</p> <p>The number of home health quality episodes for which the patient was screened with a standardized depression screening tool at SOC/ROC:</p> <ul style="list-style-type: none"> (1) The patient was screened using the PHQ-2 scale M1730[1] = 01 <li style="text-align: center;">or (2) The patient was screened with a different standardized, validated assessment and the patient meets criteria for further evaluation for depression M1730[1] = 02 <li style="text-align: center;">or (3) The patient was screened with a different standardized, validated assessment and the patient does not meet criteria for further evaluation for depression M1730[1] = 03 <p>Denominator</p> <p>All home health quality episodes except for those meeting the exclusion criteria.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the patient was nonresponsive:</p> <ul style="list-style-type: none"> – M1700[1] = 04 or – M1710[1] = NA or – M1720[1] = NA <p>Measure Type</p> <p>Process - Assessment</p> <p>OASIS Items Used</p> <p>(M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious (M1730) Depression Screening</p>

*Multifactor Fall Risk Assessment Conducted for All Patients Who Can Ambulate***Table 7-3. Multifactor Fall Risk Assessment Conducted for All Patients who Can Ambulate NQF #0537 (CMS ID 0952-10)**

Measure Description
This measure reports the percentage of home health quality episodes in which patients had a multi-factor fall risk assessment at start/resumption of care.
Measure Specifications
<p>Numerator</p> <p>Number of home health quality episodes in which the physician-ordered plan of care includes regular monitoring for the presence of skin lesions on the lower extremities and patient education on proper diabetic foot care.</p> <p>(1) The patient had a multi-factor falls risk assessment using standardized, validated tool and it does not indicate a risk for falls M1910[1] = 01</p> <p>or</p> <p>(2) The patient had a multi-factor falls risk assessment using standardized, validated tool and it does indicate a risk for falls M1910[1] = 02</p> <p>Denominator</p> <p>All home health quality episodes except for those meeting the exclusion criteria.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes where patient is bed- or chair-fast (M1860[1] = 04, 05, or 06)</p> <p>Measure Type</p> <p>Process - Assessment</p> <p>OASIS Items Used</p> <p>(M1910) Multi-factor Fall Risk Assessment (M1860) Ambulation/Locomotion</p>

*Diabetic Foot Care and Patient / Caregiver Education Implemented***Table 7-4. Diabetic Foot Care and Patient / Caregiver Education Implemented during All Episodes of Care NQF #0519* (CMS ID 0958-10)**

Measure Description
This measure reports the percentage of home health quality episodes in which diabetic foot care and patient/caregiver education were included in the physician- ordered plan of care and implemented (at the time of or at any time since the most recent SOC or ROC assessment).
Measure Specifications
<p>Numerator</p> <p>Number home health quality episodes during which diabetic foot care and patient/caregiver education were included in the physician-ordered plan of care and implemented (at the time of or at any time since the most recent SOC or ROC assessment):</p> <p style="padding-left: 40px;">M2401A[2] = 01</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes where patient is not diabetic OR is a bilateral amputee (M2401A[2] = NA).</p> <p>Measure Type</p> <p>Process - Assessment</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M2401A) Intervention Synopsis</p>

* - 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 7-5. 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 the influenza immunization for the current flu season.
Measure Specifications
<p>Numerator</p> <p>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:</p> <ul style="list-style-type: none"> – M1046[2] = 01 or – M1046[2] = 02 or – M1046[2] = 03 <p>Denominator</p> <p>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.</p> <p>Note that If M1041[2] Influenza Vaccine Data Collection Period is marked “No” incorrectly, then the case is included in the denominator.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which:</p> <ul style="list-style-type: none"> – 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 <p>Measure Type</p> <p>Process – Prevention</p> <p>OASIS Items Used</p> <p>(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</p>

*Pneumococcal Vaccine Ever Received***Table 7-6. Pneumococcal Vaccine Ever Received NQF #0525*(CMS ID 0214-10)**

Measure Description
This measure reports the percentage of home health quality episodes during which patients were determined to have ever received Pneumococcal Polysaccharide Vaccine.
Measure Specifications
<p>Numerator Number of home health quality episodes during which patients were determined to have ever received Pneumococcal Polysaccharide Vaccine (M1051[2] = 01).</p> <p>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.</p> <p>Denominator Exclusions Home health quality episodes for which patient does not meet age/condition guidelines for Pneumococcal Polysaccharide Vaccine (M1056[2]=03).</p> <p>Measure Type Process – Prevention</p> <p>OASIS Items Used (M0100) Reason for Assessment (M1051) Pneumococcal Vaccine (M1056) Reason Pneumococcal Vaccine not received</p>

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

*Drug Education on All Medications Provided to Patient/Caregiver***Table 7-7. Drug Education on All Medications Provided to Patient/Caregiver (CMS ID 0978-10)**

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
<p>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).</p> <p>– M2016[2] = 01</p> <p>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.</p> <p>Denominator Exclusions Home health quality episodes for which the patient was not taking any drugs (M2016[2] = NA).</p> <p>Measure Type Process – Education</p> <p>OASIS Items Used (M0100) Reason for Assessment (M2016) Patient/Caregiver Drug Education Intervention</p>

*Drug Regimen Review Conducted with Follow-Up for Identified Issues***Table 7-8. 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
<p>Numerator</p> <p>Home health quality episodes for which:</p> <ol style="list-style-type: none"> (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 medication issues were identified since SOC/ROC (M2005[2] = 09). <p>Denominator</p> <p>All home health quality episodes, except for those meeting the exclusion criteria.</p> <p>Denominator Exclusions</p> <p>None</p> <p>Measure Type</p> <p>Process- Prevention</p> <p>OASIS Items Used</p> <p>M2001 (Drug Regimen Review) M2003 (Medication Follow-up) M2005 (Medication Intervention)</p>

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

Table 7-9. 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 documented and at least one discharge goal was recorded.
Measure Specifications
<p>Numerator</p> <p>Home health quality episodes with functional assessment data for each self-care and mobility activity and at least one self-care or mobility goal.</p> <p>For home health 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:</p> <ol style="list-style-type: none"> 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 functional assessment items on the discharge assessment. <p>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:</p> <ol style="list-style-type: none"> 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; 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. <p>A dash (–) value for an item indicates that no information is available and is not a valid response for the numerator.</p> <p>I. Specifications for episodes with complete admission functional assessment data:</p> <p>For admission functional assessment data to be complete, each condition listed below must be met:</p> <ol style="list-style-type: none"> 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 <p>For patients who are walking as indicated by GG0170I1=[01, 02, 03, 04, 05, 06], include items:</p> <ol style="list-style-type: none"> 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] <p>For patients who use a wheelchair as indicated by GG170Q1[1]=1, include items:</p> <ol style="list-style-type: none"> 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

Outcome Measures

Improvement in Ambulation – Locomotion

Table 7-10. Improvement in Ambulation – Locomotion NQF #0167 (CMS ID 0183-10)

Measure Description
This measure reports the percentage of home health quality episodes during which the patient improved in ability to ambulate.
Measure Specifications
<p>Numerator</p> <p>Home health quality episodes for which the response on the discharge assessment indicates less impairment in ambulation 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:</p> <p>M1860[2] < M1860[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>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:</p> <ul style="list-style-type: none"> – M1700[1] = 04 or – M1710[1] = NA or – M1720[1] = NA <p>Measure Type</p> <p>End Result Outcome – Functional</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1860) Ambulation/ Locomotion (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious</p>
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

*Improvement in Bed Transferring***Table 7-11. Improvement in Bed Transferring NQF #0175 (CMS ID 1000-10)**

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
<p>Numerator</p> <p>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:</p> <p>M1850[2] < M1850[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>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:</p> <ul style="list-style-type: none"> – M1700 [1] = 04 or – M1710 [1] = NA or – M1720 [1] = NA <p>Measure Type</p> <p>End Result Outcome - Functional</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1850) Transferring (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious</p>
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

*Improvement in Pain Interfering with Activity***Table 7-12. Improvement in Pain Interfering with Activity NQF #0177 (CMS ID 0191-10)**

Measure Description
This measure reports the percentage of home health quality episodes during which the patient's frequency of pain when moving around improved.
Measure Specifications
<p>Numerator</p> <p>Home health quality episodes for which the response on the discharge assessment indicates less frequent pain 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:</p> <p>M1242[2] < M1242[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the patient, at start/resumption of care, had no pain reported (M1242[1]=00), or the patient was nonresponsive:</p> <ul style="list-style-type: none"> – M1700 [1] = 04 or – M1710 [1] = NA or – M1720 [1] = NA <p>Measure Type</p> <p>End Result Outcome - Health</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1242) Frequency of Pain Interfering with Activity (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious</p>
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

*Improvement in Bathing***Table 7-13. Improvement in Bathing NQF# 0174 (CMS ID 0185-10)**

Measure Description
This measure reports the percentage of home health quality episodes during which the patient got better at bathing self.
Measure Specifications
<p>Numerator</p> <p>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:</p> <p>M1830[2] < M1830[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the patient, at start/resumption of care, had no pain reported (M1830[1]= 00), or the patient was nonresponsive:</p> <ul style="list-style-type: none"> – M1700[1] = 04 or – M1710[1] = NA or – M1720 [1] = NA <p>Measure Type</p> <p>End Result Outcome - Functional</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1830) Bathing (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious</p>
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

*Improvement in Management of Oral Medications***Table 7-14. Improvement in Management of Oral Medications NQF # 0176 (CMS ID 0189-10)**

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
<p>Numerator</p> <p>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:</p> <p>M2020[2] < M2020[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>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:</p> <ul style="list-style-type: none"> – M1700[1] = 04 or – M1710[1] = NA or – M1720[1] = NA. <p>Note that '^' indicates the item was skipped due to a skip pattern.</p> <p>Measure Type</p> <p>End Result Outcome - Functional</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M2020) Management of Oral Medications (M1700) Cognitive Functioning (M1710) When Confused (M1720) When Anxious</p>
Covariates
See the Risk Adjustment Technical Specifications in Appendix A below.

*Improvement in Dyspnea***Table 7-15. Improvement in Dyspnea NQF #0179* (CMS ID 0187-10)**

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
<p>Numerator</p> <p>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:</p> <p>M1400 [2] < M1400[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the patient, at start/resumption of care, was not short of breath at any time M1400[1] = 00.</p> <p>Measure Type</p> <p>End Result Outcome - Health</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1400) When is the patient dyspneic?</p>
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 7-16. 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, and closed-head injuries with altered consciousness, or subdural hematoma) during the home health episode.
Measure Specifications
<p>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).</p> <p>Denominator All home health quality episodes, except for those meeting the exclusion criteria.</p> <p>Denominator Exclusions Home health episodes for which the occurrence of falls was not assessed (J1800[2] = '-' or J1900C = 'A') or the assessment indicated a fall (J1800[2] = 1) and the number of falls with major injury was not assessed (J1900C[2] = '-').</p> <p>Measure Type End Result Outcome –Health</p> <p>OASIS Items Used (J1800) Any falls since SOC/ROC (J1900C) Number of falls since SOC/ROC</p>
Covariates
This measure will not be risk adjusted. Falls with major injury are considered to be “never events” and as such are not to be risk adjusted

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

Table 7-17. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID 5852-10)

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
<p>Numerator</p> <p>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:</p> <ul style="list-style-type: none"> – 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 <p>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.</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the discharge assessment lacks a useable response:</p> <ul style="list-style-type: none"> – (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] = '-') <p>Note: Episodes with skipped responses ('^') are <i>included</i> in the denominator.</p> <p>Measure Type</p> <p>End Result Outcome – Health</p> <p>OASIS Items Used</p> <p>(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; (M1311C2) 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 <u>these</u> 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 <u>these</u> unstageable pressure ulcers that were present at the most recent SOC/ROC (M1311F1) Number of unstageable pressure injuries presenting as deep tissue injury; (M1311F2) Number of <u>these</u> unstageable pressure injuries that were present at the most recent SOC/ROC</p>
Covariates
See the Risk Adjustment Technical Specifications in the Downloads section:

https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/HHQRP_Measure_Specifications_Function_Falls_SkinIntegrity.pdf

*Percent of Residents or Patients with Pressure Ulcers that are New or Worsened***Table 7-18. Percent of Residents or Patients with Pressure Ulcers that are New or Worsened NQF #0678 (CMS ID 4803-10)**

Measure Description
Percentage of quality episodes in which the patient has one or more Stage 2-4 pressure ulcers present at discharge that are new or worsened since the beginning of the quality episode.
Measure Specifications
<p>Numerator</p> <p>Home health quality episodes for which the response on the discharge assessment indicates one or more new or worsened Stage 2-4 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:</p> <ul style="list-style-type: none"> – M1313A[2] > 0, or – M1313B[2] > 0, or – M1313C[2] > 0 <p>Note: This measure is calculated from an item only available on OASIS-C2. Starting with OASIS-D, this measure will be replaced with “Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury.” Measure results will be frozen after December 2018, but still available on HH Compare and through confidential feedback.</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the discharge assessment lacks a useable response:</p> <ul style="list-style-type: none"> – M1313A[2] = ‘-’, and – M1313B[2] = ‘-’, and – M1313C[2] = ‘-’ <p>Note: Episodes with skipped responses (^) are <i>included</i> in the denominator.</p> <p>Measure Type</p> <p>End Result Outcome – Health</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment (M1313A) Number of current Stage 2 pressure ulcers that were not present or were at a lesser stage at the most recent SOC/ROC (M1313B) Number of current Stage 3 pressure ulcers that were not present or were at a lesser stage at the most recent SOC/ROC (M1313C) Number of current Stage 4 pressure ulcers that were not present or were at a lesser stage at the most recent SOC/ROC</p>
Covariates
See the Risk Adjustment Technical Specifications in the Downloads section: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/HH-QRP-Measure-Risk-Specifications_New-and-Worsened-Pressure-Ulcers.pdf

*Improvement in Status of Surgical Wounds***Table 7-19. Improvement in Status of Surgical Wounds NQF #0178* (CMS ID 0193-10)**

Measure Description
This measure reports the percentage of home health quality episodes during which the patient demonstrates an improvement in the condition of surgical wounds.
Measure Specifications
<p>Numerator</p> <p>Number of home health quality episodes where the patient has a better status of surgical wounds at discharge compared to SOC or ROC:</p> <p style="padding-left: 40px;">M1340[2] = 00 or</p> <p style="padding-left: 40px;">M1342[2] < M1342[1]</p> <p>Denominator</p> <p>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.</p> <p>Denominator Exclusions</p> <p>Home health quality episodes for which the patient, at SOC/ROC, did not have any surgical wounds (M1340[1] = 00) or had only a surgical wound that was unobservable (M1340[1] = 02) or newly epithelialized (M1342[1] = 00).</p> <p>Measure Type</p> <p>End Result Outcome - Health</p> <p>OASIS Items Used</p> <p>(M0100) Reason for Assessment</p> <p>(M1340) Does the patient have a Surgical Wound?</p> <p>(M1342) Status of Most Problematic Surgical Wound that is Observable</p>
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.

Appendix A: Model Parameters

Table A-1. Description of Risk Factors

Recalibrated model, effective CY 2019

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
6	IV Therapies	Receiving nutrition or infusion therapy	response 1, 2, or 3	M1030	Therapies patient receives at home	IVTHER_ANY	
		None of the above	response 4	M1030	Therapies patient receives at home	IVTHER_NONE	Excluded category

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
7	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_MLTPH_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	
8	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	
9	Pain	Frequency of Pain: No pain	response 0	M1242	Frequency of Pain Interfering with patient's activity or movement:	PAIN0	Excluded category
		Frequency of Pain: Pain does not interfere with activity	response 1	M1242	Frequency of Pain Interfering with patient's activity or movement:	PAIN1	
		Frequency of Pain: Less often than daily	response 2	M1242	Frequency of Pain Interfering with patient's activity or movement:	PAIN2	
		Frequency of Pain: Daily, but not constant	response 3	M1242	Frequency of Pain Interfering with patient's activity or movement:	PAIN3	
		Frequency of Pain: Constant	response 4	M1242	Frequency of Pain Interfering with patient's activity or movement:	PAIN4	
10	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	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
11	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	
12	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	
13	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	
14	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	
15	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
16	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	
17	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	
18	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	
19	Depression Screening	PHQ-2 Score: 0	Sum of responses = 0 or alternative screening and does not meet criteria for further evaluation. Need responses for both questions	M1730	Score of PHQ2	PHQ2_SCOR_0	Excluded category
		PHQ-2 Score: 1-2	Sum of responses = 1,2. Need responses for both questions	M1730	Score of PHQ2	PHQ2_SCOR_12	
		PHQ-2 Score: 3-6	Sum of responses = 3 or alternative screening and meets criteria for further evaluation. Need responses for both questions	M1730	Score of PHQ2	PHQ2_SCOR_3PLUS	
		PHQ-2 Score: None	No screening or PHQ-2 screening performed but unable to respond on either the depression or the loss of interest field	M1730	Score of PHQ2	PHQ2_NA	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
20	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	
21	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	
22	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	
23	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
24	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	
25	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	
26	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	
27	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	
28	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
29	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	
30	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	
31	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	
32	Injectable Medication Management	Management of Oral Meds: Independent	response 0 or NA or missing	M2030	Management of Injectable Medications: Excludes injectable and IV medications.	INJECT0	Excluded category
		Management of Oral Meds: Any issue	response 1, 2, or 3	M2030	Management of Injectable Medications: Excludes injectable and IV medications.	INJECTANY	
33	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	
34	Therapy	Therapy Amounts: None	response = 0 or NA	M2200	Therapy Need (# visits)	THER_NONE	Excluded category
		Therapy Amounts: Low	response ≥ 1 & < 5	M2200	Therapy Need (# visits)	THER_LOW_LT5	
		Therapy Amounts: Medium	response ≥ 5 & ≤ 13	M2200	Therapy Need (# visits)	THER_MED_5_13	
		Therapy Amounts: High	response > 13	M2200	Therapy Need (# visits)	THER_HIGH_GT13	

Risk Factor #	Risk Factor	Covariate	Response Notes	OASIS Item	OASIS Item Description	Variable Name	Excluded Category Indicator
35	Home Care Condition Codes	Certain infectious and parasitic diseases	Any primary or other diagnosis within the range A00 to B99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_INFECT	
		Neoplasms	Any primary or other diagnosis within the range C00 to D49	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_NEOPLASM	
		Diseases of the blood and blood-forming organs, certain disorders involving	Any primary or other diagnosis within the range D50 to D89	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_BLOOD	
		Endocrine, nutritional, and metabolic diseases	Any primary or other diagnosis within the range E00 to E89	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_ENDOCRINE	
		Mental, Behavioral, and Neurodevelopmental disorders	Any primary or other diagnosis within the range F01 to F99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_MENTAL	
		Disease of the nervous system	Any primary or other diagnosis within the range G00 to G99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_NERVOUS	
		Diseases of the eye and adnexa	Any primary or other diagnosis within the range H00 to H59	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_EYE	
		Diseases of the ear and mastoid process	Any primary or other diagnosis within the range H60 to H95	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_EAR	
		Diseases of the circulatory system	Any primary or other diagnosis within the range I00 to I99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_CIRCULATORY	
		Diseases of the respiratory system	Any primary or other diagnosis within the range J00 to J99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_RESPIRATORY	
		Diseases of the digestive system	Any primary or other diagnosis within the range K00 to K95	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_DIGESTIVE	
		Diseases of the skin and subcutaneous tissue	Any primary or other diagnosis within the range L00 to L99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_SKIN	
		Diseases of the musculoskeletal system and connective tissue	Any primary or other diagnosis within the range M00 to M99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_MUSCL_SKEL	
		Diseases of the genitourinary system	Any primary or other diagnosis within the range N00 to N99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_GEN_URINARY	
		Symptoms, sign, and abnormal clinical and laboratory findings, not elsewhere classified	Any primary or other diagnosis within the range R00 to R99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_INT_ABNORM	
		Injury, poisoning, and certain other consequences of external causes	Any primary or other diagnosis within the range S00 to T88	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_EXT_INJURY	
		External causes of morbidity	Any primary or other diagnosis within the range V00 to Y99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_EXT_MORB	
Factors influencing health status and contact with health services	Any primary or other diagnosis within the range Z00 to Z99	M1021, M1023	(M1021) Primary Diagnosis & (M1023) Other Diagnoses	HC_DX_HLTH_FACTORS			

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

Based on quality episodes ending in CY 2016

	Improvement in Ambulation/ Locomotion	Improvement in Bathing	Improvement in Bed Transferring	Improvement in Bowel Incontinence	Improvement in Confusion Frequency	Improvement in Dyspnea	Improvement in Lower Body Dressing	Improvement in Upper Body Dressing	Improvement in Management of Oral Medications	Improvement in Pain Interfering with Activity	Improvement in Status of Surgical Wounds	Improvement in Toilet Transferring	Discharge to Community
Number of Risk Factors by Model and Measure													
Model Prior to CY 2019*	102	114	99	43	77	83	118	98	119	69	78	100	79
Recalibrated Model, CY 2019 forward	122	122	116	80	108	106	117	121	121	116	60	113	121
C-Statistic by Model and Measure													
Model Prior to CY 2019*	0.783	0.762	0.796	0.681	0.690	0.650	0.748	0.751	0.799	0.644	0.599	0.775	0.726
Recalibrated Model, CY 2019 forward	0.779	0.761	0.792	0.692	0.691	0.694	0.740	0.745	0.788	0.656	0.642	0.768	0.734
Pseudo-R2 Statistic by Model and Measure													
Model Prior to CY 2019*	0.176	0.152	0.199	0.073	0.084	0.047	0.139	0.138	0.212	0.044	0.016	0.172	0.114
Recalibrated Model, CY 2019 forward	0.174	0.152	0.198	0.082	0.086	0.080	0.133	0.135	0.198	0.053	0.034	0.167	0.121

*Model developed in 2011.

Table A-3. Estimated Coefficients

Recalibrated model, effective CV 2019 using quality episodes ending CV 2016

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 Bowel Incontinence	Improvement in Confusion Frequency	Improvement in Dyspnea	Improvement in Lower Body Dressing	Improvement in Upper Body Dressing	Improvement in Management of Oral Medications	Improvement in Pain Interfering with Activity	Improvement in Status of Surgical Wounds	Improvement in Toilet Transferring	Discharge to Community	
1	Age	1	AGE_0_54		-0.1538	-0.0657	-0.0712	-0.1996	0.0302	-0.0113	-0.0845	-0.1357	-0.0111	-0.1860	-0.1669	-0.2126	-0.1286	
		2	AGE_55_59		-0.1416	-0.0833	-0.1126	-0.1311	-0.0372	-0.0764	-0.0697	-0.1277	-0.0484	-0.2162	-0.0900	-0.1581	-0.1227	
		3	AGE_60_64		-0.1629	-0.1027	-0.1182	-0.1062	-0.0541	-0.1096	-0.0851	-0.1410	-0.0772	-0.1546	-0.0482	-0.1481	-0.1147	
		4	AGE_65_69	Excluded category														
		5	AGE_70_74		-0.0139	-0.0189	-0.0268	-0.0158	-0.0708	-0.0205	-0.0102	-0.0162	-0.0824	0.0569	0.0548	0.0003	0.0005	
		6	AGE_75_79		-0.0675	-0.0742	-0.0597	-0.0021	-0.1849	-0.0322	-0.0343	-0.0625	-0.2210	0.1141	0.1192	-0.0281	-0.0087	
		7	AGE_80_84		-0.1578	-0.1575	-0.1360	-0.0135	-0.3073	-0.0306	-0.0761	-0.1145	-0.3612	0.1540	0.1541	-0.0736	-0.0236	
		8	AGE_85_89		-0.2831	-0.2747	-0.2381	-0.0537	-0.3973	-0.0605	-0.1640	-0.2011	-0.5091	0.1722	0.2480	-0.1353	-0.0456	
		9	AGE_90_94		-0.4457	-0.4475	-0.3818	-0.0524	-0.4942	-0.1465	-0.3225	-0.3600	-0.6740	0.1579	0.2550	-0.2608	-0.0871	
		10	AGE_95PLUS		-0.6206	-0.6476	-0.5598	-0.1598	-0.5686	-0.2442	-0.5494	-0.5820	-0.8738	0.1042	0.3419	-0.4380	-0.1004	
2	Gender	11	GENDER_FEMALE	Excluded category														
		12	GENDER_MALE		0.0634	0.0632	0.0153	-0.0465		-0.0694	-0.0401		-0.1239	0.1059	-0.0574		-0.0675	
3	Payment source	13	PAY_MCARE_FFS	Excluded category														
		14	PAY_MCARE_HMO		-0.0994	-0.1133	-0.0441	-0.0324	-0.0225	-0.0243	-0.0549	-0.0340	-0.0694	-0.1121	-0.0586	-0.0096	0.1363	
		15	PAY_MCAREANDMCAID		-0.2940	-0.3785	-0.2570	-0.2183	-0.2104	-0.1338	-0.3047	-0.2769	-0.3939	-0.1215	-0.1590	-0.2399	-0.0798	
		16	PAY_MCAID_ONLY		-0.1195	-0.2242	-0.0429	-0.1200	-0.1167	0.0039	-0.1521	-0.1231	-0.2086	-0.1899	-0.0880	-0.0172	-0.1010	
		17	PAY_OTHER_COMBO		-0.0340	-0.0659	0.0428	0.0258	0.0495	0.0444	-0.0244	0.0546	0.0287	-0.1368	-0.2020	0.1122	0.0923	
4	SOC/ROC and Admission Source	18	SOC_INPT	Excluded category														
		19	SOC_COMM		-0.4674	-0.4129	-0.4577	-0.2931	-0.3500	-0.3469	-0.3979	-0.4925	-0.4482	-0.1252	-0.3556	-0.4913	0.1177	
		20	ROC		-0.4175	-0.3492	-0.4047	-0.1934	-0.1946	-0.3613	-0.3593	-0.3859	-0.3417	-0.2493	-0.0276	-0.3857	-0.7369	
5	Post-acute facility admission source	21	INPT_POSTACUTE		-0.2567	-0.1460	-0.1990		-0.0397	-0.0827	-0.0991	-0.1170	-0.1352	-0.0675		-0.1229	-0.0902	
		22	INPT_NOPOSTACUTE	Excluded category														
6	IV Therapies	23	IVTHER_ANY		0.0661				0.0738					0.0501	-0.1879		-0.3267	
		24	IVTHER_NONE	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 Bowel Incontinence	Improvement in Confusion Frequency	Improvement in Dyspnea	Improvement in Lower Body Dressing	Improvement in Upper Body Dressing	Improvement in Management of Oral Medications	Improvement in Pain Interfering with Activity	Improvement in Status of Surgical Wounds	Improvement in Toilet Transferring	Discharge to Community
7	Risk of Hospitalization	25	RISK_HSTRY_FALLS		-0.1231	-0.0601	-0.0567	0.0626	-0.0661			-0.0333	-0.0786	-0.1003			-0.0498
		26	RISK_WEIGHTLOSS		-0.0471	-0.0803				-0.0957	-0.0391	-0.0735	-0.0403	-0.1333		-0.0300	-0.2126
		27	RISK_MLTPL_HOSPZTN		-0.1078	-0.0954	-0.0822			-0.1233	-0.0621	-0.0925	-0.0786	-0.0745	-0.1369	-0.0782	-0.3340
		28	RISK_ED					0.0579	0.0269					-0.0527	-0.0843		-0.1700
		29	RISK_RCNT_DCLN		0.0329		0.0398		-0.0696				-0.0332			0.0339	-0.0641
		30	RISK_COMPLY			0.0438	-0.0413			-0.0502	0.0546	0.0485	0.0563		-0.1069		
		31	RISK_5PLUS_MDCTN			0.0805			0.0507			0.1239			-0.0831		0.1254
		32	RISK_EXHAUST		0.0666	0.0893	0.0548	0.0990	0.1056		0.0885	0.0806	0.1133	0.0396		0.0661	-0.0311
		33	RISK_OTHR					-0.0677	-0.0504							-0.1395	0.0800
		34	RISK_NONE		0.1223	0.1855	0.1034			0.1795	0.0714	0.1586	0.2070		0.1469	0.3677	
8	Availability of Assistance	35	ASSIST_OCC_NONE	Excluded category													
		36	ASSIST_REGNITE		-0.0625	-0.1172	-0.0582		-0.0112	-0.0596	-0.1150	-0.0983	-0.1630	-0.0445		-0.0695	-0.0215
		37	ASSIST_REGDAY		-0.1669	-0.2186	-0.2257		-0.0676	-0.1081	-0.3280	-0.3031	-0.3085	-0.0130		-0.3026	-0.0395
		38	ASSIST_ARND_CLOCK		-0.1650	-0.2140	-0.1422		-0.0836	-0.0689	-0.2825	-0.2386	-0.3443	-0.0692		-0.2296	-0.0404
	Living Arrangement	39	LIV_ALONE		0.0607	0.1410	0.0923	0.1072	0.0554	0.0361	0.3004	0.2473	0.3037	0.0235	0.0986	0.2326	-0.0205
		40	LIV_OTHERS	Excluded category													
		41	LIV_CONGREGATE		-0.1872	-0.1053	-0.0261	-0.1840	-0.3220	0.0302	-0.0069	0.0147	-1.0024	0.1136	0.2246	0.0197	-0.0255
9	Pain	42	PAIN0	Excluded category													
		43	PAIN1		0.0974	0.1226	0.0524	0.1039	0.1089	0.0513	0.0793	0.0949	0.1640		0.1414	0.0701	-0.0143
		44	PAIN2		0.1107	0.1446	0.0277	0.1157	0.1317	0.0125	0.0966	0.1093	0.2079	0.7380	0.1379	0.0741	-0.0315
		45	PAIN3		0.1805	0.2325	0.0558	0.1225	0.1736	-0.0332	0.1494	0.2105	0.3262	0.7612	0.1404	0.1821	0.0034
		46	PAIN4		0.2703	0.3115	0.1922	0.2529	0.3036	0.0683	0.2136	0.3694	0.5267	1.6770	0.1193	0.4174	0.0319
10	Pressure Ulcers	47	PU_NONE_STG1ONLY	Excluded category													
		48	PU_STG2PLUS_UNSTG		-0.4365	-0.3820	-0.4067	-0.2329	-0.0729	-0.1345	-0.3981	-0.3732	-0.2691	-0.1934		-0.4027	-0.3171
11	Stasis Ulcer	49	STAS_ULCR_NONE	Excluded category													
		50	STAS_ULCR_OBS_1		-0.2339	-0.2114	-0.2569			-0.1261	-0.2401	-0.1509		-0.0993		-0.1386	-0.3834
		51	STAS_ULCR_OBS_2PLUS		-0.3459	-0.4037	-0.3288			-0.2153	-0.3923	-0.2413		-0.2583		-0.2197	-0.5974
12	Surgical Wound	52	SRG_WND_OBS_NONE	Excluded category													
		53	SRG_WND_OBS_EPI		0.2863	0.2988	0.2426	0.1097	0.2176	0.2184	0.2576	0.2971	0.2939	0.0859		0.2727	0.2082
		54	SRG_WND_OBS_GRAN		0.2729	0.3079	0.2415	0.0989	0.1650	0.1709	0.2389	0.2639	0.2638	0.1686	-0.3137	0.2663	0.1927
		55	SRG_WND_OBS_NOHEAL		0.5212	0.4918	0.4675	0.3371	0.3702	0.4112	0.4436	0.5315	0.5315	0.2556		0.5427	0.1616

Risk Factor #	Risk Factor	Covariate #	Covariate Name	Excluded Category Indicator	OASIS-Based Outcome Measure												Discharge to Community
					Improvement in Ambulation/ Locomotion	Improvement in Bathing	Improvement in Bed Transferring	Improvement in Bowel Incontinence	Improvement in Confusion Frequency	Improvement in Dyspnea	Improvement in Lower Body Dressing	Improvement in Upper Body Dressing	Improvement in Management of Oral Medications	Improvement in Pain Interfering with Activity	Improvement in Status of Surgical Wounds	Improvement in Toilet Transferring	
13	Dyspnea	56	DYSP0	Excluded category													
		57	DYSP1		0.1639	0.1458	0.0882	0.1424	0.0828		0.1465	0.1288	0.1380	0.0518	0.0453	0.1342	-0.1305
		58	DYSP2		0.1317	0.1532	-0.0229	0.1269	0.0719	0.9664	0.1301	0.0802	0.1638	0.0749	0.0963	0.0374	-0.3030
		59	DYSP34		0.1242	0.1331	-0.0251	0.2093	0.1753	1.5293	0.0989	0.0437	0.2796	-0.0102	0.0891	0.0421	-0.5736
14	Urinary Status	60	URINCONT_NONE	Excluded category													
		61	URINCONT_INCONT		-0.2348	-0.2074	-0.2717	-0.4294	-0.1815	-0.1820	-0.2396	-0.2298	-0.1791	-0.0399	0.0833	-0.2884	-0.0420
		62	URINCONT_CATH		-0.5480	-0.4822	-0.5414	-0.6003	-0.1700	-0.2470	-0.4806	-0.4745	-0.2543	-0.1233	0.0429	-0.6022	-0.6561
15	Bowel Incontinence	63	BWL_NONE_UK	Excluded category													
		64	BWL_FR1		-0.1246	-0.0946	-0.0973		-0.0388	-0.0430	-0.1332	-0.1255	-0.0293	-0.0259	-0.0467	-0.1191	-0.1071
		65	BWL_FR2		-0.2037	-0.2009	-0.1930	0.1545	-0.1159	-0.1063	-0.2520	-0.2082	-0.1330	-0.0493	-0.1048	-0.2328	-0.1575
		66	BWL_FR345		-0.3241	-0.4005	-0.3606	0.3087	-0.2207	-0.1325	-0.4217	-0.3956	-0.2802	-0.0315	-0.1779	-0.5314	-0.1699
		67	BWL_OSTOMY		-0.0798	-0.1774	-0.0355		-0.0159	0.0434	-0.0656	-0.0755	-0.0504	0.0403	-0.1759	-0.2179	-0.4526
16	Cognitive function	68	COGN0	Excluded category													
		69	COGN1		-0.0253	-0.0632	-0.0978	-0.0895	-0.3381		-0.0635	-0.1003	-0.2237	0.0651		-0.1302	
		70	COGN2		-0.0839	-0.1602	-0.1135	-0.1415	-0.6182		-0.1673	-0.2022	-0.3948	0.1224		-0.2021	
		71	COGN34		-0.2390	-0.3365	-0.2066	-0.2113	-0.9386		-0.3727	-0.4398	-0.6317	0.1273		-0.3566	
17	Confusion	72	CONF0	Excluded category													
		73	CONF1		-0.0887	-0.1082	-0.0829	-0.1038		-0.0945	-0.0788	-0.1090	-0.2250	-0.0081		-0.0993	-0.0593
		74	CONF23		-0.1752	-0.2508	-0.1520	-0.1998	1.3185	-0.0679	-0.2068	-0.2597	-0.4789	0.0156		-0.2289	-0.0777
		75	CONF4		-0.2733	-0.4395	-0.1965	-0.3290	1.9011	0.0105	-0.4125	-0.4937	-0.7962	0.1276		-0.4238	-0.0331
18	Anxiety	76	ANX0	Excluded category													
		77	ANX1		0.0418	0.0327	0.0214	0.0267	-0.0236	-0.0613	0.0468	0.0390	0.0561	-0.0533		0.0270	-0.0221
		78	ANX2		0.1016	0.0734	0.0787	0.1009	0.0143	-0.0650	0.1014	0.1008	0.1312	-0.1213		0.1079	-0.0515
		79	ANX3		0.2493	0.2243	0.2284	0.2686	0.1756	-0.0004	0.2797	0.2597	0.3338	-0.1603		0.2732	-0.0138
19	Depression Screening	80	PHQ2_SCOR_0	Excluded category													
		81	PHQ2_SCOR_12		-0.0933	-0.0822	-0.1062	-0.0121	-0.0149	-0.1174	-0.1037	-0.1075	-0.0526	-0.1404	-0.0783	-0.1001	-0.1444
		82	PHQ2_SCOR_3PLUS		-0.1487	-0.1398	-0.1379	0.0129	-0.0029	-0.1839	-0.1656	-0.1622	-0.0792	-0.2915	-0.0983	-0.1477	-0.2017
		83	PHQ2_NA		-0.2854	-0.3386	-0.2571	-0.1473	-0.2854	-0.1601	-0.3772	-0.3990	-0.3735	-0.1827	-0.1289	-0.3215	-0.0846

Risk Factor #	Risk Factor	Covariate #	Covariate Name	Excluded Category Indicator	OASIS-Based Outcome Measure												
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20	Behavioral Symptoms	84	BEHAV_NONE		0.1304	0.1890	0.1223		0.1082	0.0761	0.1952	0.2099	0.2128	0.1402		0.1968	0.0671
		85	BEHAV_MEM_DEFICIT					-0.1115	-0.2698				-0.1829	0.0878		-0.0319	0.0455
		86	BEHAV_IMPR_DECISN					-0.1376	-0.1750	-0.0956				-0.0637			
		87	BEHAV_OTHR		-0.1267	-0.1858	-0.1156	-0.1817	-0.2604		-0.1735	-0.1747	-0.3272	-0.0731		-0.1362	-0.1056
21	Disruptive Behavior Frequency	88	BEHPFR0	Excluded category													
		89	BEHPFR12		0.2026	0.2547	0.0862	0.1570	0.1701	0.1642	0.1957	0.1596	0.2037	0.2142		0.0615	0.0341
		90	BEHPFR3		0.1930	0.2396	0.1192	0.2469	0.1638	0.1876	0.2147	0.1868	0.2197	0.2372		0.1056	0.0139
		91	BEHPFR4		0.1639	0.1976	0.1477	0.2510	0.1215	0.1703	0.1920	0.1848	0.1829	0.1437		0.1468	0.0407
		92	BEHPFR5		0.1818	0.1862	0.1939	0.2453	0.0697	0.1861	0.2048	0.2040	0.1740	0.1383		0.1839	0.0924
22	Grooming	93	GROOM0	Excluded category													
		94	GROOM1		-0.0053	-0.0075	-0.0655				-0.0997	-0.2218	0.0303	0.0551	0.1337	-0.2192	-0.0248
		95	GROOM2		-0.1016	-0.1146	-0.1783				-0.2290	-0.4557	-0.0434	0.0269	0.2020	-0.3854	-0.0985
		96	GROOM3		-0.1630	-0.2267	-0.2700				-0.3804	-0.7336	-0.1504	-0.0006	0.1293	-0.5271	-0.1383
23	Upper Body Dressing	97	UPPER0	Excluded category													
		98	UPPER1		0.0630	-0.0155	0.0191		0.0336	0.0399	0.0121		0.0072			-0.1152	-0.0121
		99	UPPER2		-0.0507	-0.2134	-0.0908		-0.0445	-0.0878	-0.2603	1.2685	-0.2041			-0.3487	-0.1386
		100	UPPER3		-0.0437	-0.2374	-0.1112		-0.1178	-0.1613	-0.3933	2.6428	-0.2933			-0.4715	-0.1450
24	Lower Body Dressing	101	LOWER0	Excluded category													
		102	LOWER1		0.1560	0.1515	0.1180			0.0665		-0.0412	0.1339			0.0214	0.1326
		103	LOWER2		0.0701	0.0713	-0.0698			0.0581	0.8531	-0.2570	0.1197			-0.0898	0.1383
		104	LOWER3		-0.0424	-0.0129	-0.1605			0.0549	2.3778	-0.3172	0.1134			-0.1333	0.1293
25	Bathing	105	BATH0	Excluded category													
		106	BATH1		-0.1743		-0.1421		-0.0262	-0.0268	-0.0785	-0.1034	-0.0106	-0.0475			0.1098
		107	BATH2		-0.1802	1.1960	-0.1284		-0.0328	-0.0242	-0.1235	-0.1722	-0.1027	-0.0436			0.0733
		108	BATH3		-0.3361	1.8939	-0.2124		-0.0415	-0.0061	-0.2509	-0.2691	-0.1706	-0.0862			0.0006
		109	BATH4		-0.1682	2.4146	-0.0686		0.0965	0.1618	-0.0049	0.0034	0.1066	0.0403			0.0583
		110	BATH5		-0.3086	2.8104	-0.1324		0.0650	0.1213	-0.2603	-0.1856	-0.0253	-0.0752			-0.0038
		111	BATH6		-0.5178	3.0383	-0.4675		-0.1614	-0.1425	-0.6768	-0.6668	-0.4805	-0.2289			-0.0999

Risk Factor #	Risk Factor	Covariate #	Covariate Name	Excluded Category Indicator	OASIS-Based Outcome Measure												
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26	Toilet Transferring	112	TLTTRN0	Excluded category													
		113	TLTTRN1		0.2656	0.2112	0.1373		0.0966	0.1512	0.1106	0.0570	0.1519	0.1549			0.1094
		114	TLTTRN2		0.2722	0.3200	0.0409		0.1798	0.1633	0.1483	0.0738	0.2059	0.2198		1.7551	0.0333
		115	TLTTRN34		0.1693	0.1219	-0.2097		0.1460	0.1090	0.0085	-0.0647	0.1403	0.1966		2.0061	0.0285
27	Toilet Hygiene	116	TLTHYG0	Excluded category													
		117	TLTHYG1		0.0378	0.0629	-0.0264	0.0253	0.0730		-0.0323	-0.0980	0.0866	0.1121	0.1145	-0.2653	
		118	TLTHYG2		-0.0775	-0.0298	-0.1409	-0.1143	0.0590		-0.1889	-0.2433	0.0473	0.0931	0.1836	-0.4476	
		119	TLTHYG3		-0.2217	-0.2461	-0.3483	-0.5203	-0.0911		-0.5061	-0.5042	-0.1658	0.1002	0.1935	-0.7323	
28	Transferring	120	TRNFR0	Excluded category													
		121	TRNFR1		-0.3626	-0.0936			0.0810	-0.0211	-0.1353	-0.0628	0.0764	-0.0685		-0.1872	-0.0090
		122	TRNFR2		-0.3044	0.0180	2.4313		0.1742	0.0745	-0.1100	-0.0345	0.2088	-0.0188		-0.2652	-0.0135
		123	TRNFR345		-0.3362	-0.0360	3.0747		0.2753	0.0841	-0.1915	-0.1133	0.2242	0.0220		-0.4867	-0.0481
29	Ambulation	124	AMB0	Excluded category													
		125	AMB1			-0.2429	-0.5474	-0.0014	0.0357	-0.0998	-0.1417	-0.0339	-0.0061	-0.1824	0.0430	-0.0702	0.0290
		126	AMB2		0.4161	-0.5154	-0.9584	-0.0651	0.0444	-0.1576	-0.2651	-0.1090	-0.0812	-0.2995	-0.0176	-0.1823	-0.0969
		127	AMB3		2.2677	-0.4080	-0.7580	0.0655	0.1163	0.0272	-0.1309	0.0724	0.0517	-0.2127	-0.0154	-0.0100	-0.0256
		128	AMB456		1.5124	-1.3271	-1.8594	-0.3908	-0.0307	-0.3364	-1.0388	-0.7420	-0.4629	-0.5278	-0.2531	-1.0151	-0.2697
30	Feeding or Eating	129	EAT0	Excluded category													
		130	EAT1		-0.0439	-0.0437	-0.0974	-0.0870	-0.0139	0.0123	-0.0869	-0.1602	-0.0564	0.0797		-0.1999	-0.0108
		131	EAT2		-0.1553	-0.2209	-0.3032	-0.2470	-0.0762	0.0102	-0.2792	-0.4378	-0.2319	0.1367		-0.4228	-0.0254
		132	EAT345		-0.3010	-0.5712	-0.4290	-0.4683	-0.1997	-0.1189	-0.4971	-0.7198	-0.6833	0.0147		-0.6829	-0.1018
31	Oral Medication Management	133	ORMED0	Excluded category													
		134	ORMED1		0.0399	-0.0698			-0.0755	0.0385	-0.0771	-0.1184		0.0904		-0.1241	-0.1016
		135	ORMED2		0.0878	-0.1085			-0.1982	0.1118	-0.0823	-0.1522	1.1230	0.1759		-0.1740	-0.0881
		136	ORMED3		-0.0280	-0.2871			-0.3077	0.1650	-0.2287	-0.2646	1.2751	0.1524		-0.2067	-0.0624
32	Injectable Medication Management	137	INJECT0	Excluded category													
		138	INJECTANY		-0.1116	-0.0928	-0.1021		-0.0259	-0.0933	-0.1014	-0.0769	-0.1218	-0.0841	-0.0825	-0.0704	-0.2542

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 Bowel Incontinence	Improvement in Confusion Frequency	Improvement in Dyspnea	Improvement in Lower Body Dressing	Improvement in Upper Body Dressing	Improvement in Management of Oral Medications	Improvement in Pain Interfering with Activity	Improvement in Status of Surgical Wounds	Improvement in Toilet Transferring	Discharge to Community
33	Supervision and Safety Assistance	139	SPRVSN_NONE_NEEDED	Excluded category													
		140	SPRVSN_CG_PROVIDES		-0.0691	-0.1055	-0.0796		-0.1724	-0.0520	-0.1298	-0.1501	-0.2436	0.0018		-0.1657	-0.0237
		141	SPRVSN_NEED_TRAINING		0.1823	0.1509	0.0649		-0.0525	0.0896	0.1092	0.0575	0.0596	0.1651		-0.0521	0.0728
		142	SPRVSN_CG_UNCERTAIN_NONE		-0.0546	-0.0849	-0.1291		-0.1028	-0.1464	-0.1118	-0.1508	0.0179	-0.1851		-0.1367	-0.2958
34	Therapy	143	THER_NONE	Excluded category													
		144	THER_LOW_LT5		-0.0240	0.0152	0.0598	0.0709	0.0573	0.1414	0.0635	0.0902	-0.0060	-0.0277	-0.0264	0.1035	0.1144
		145	THER_MED_5_13		0.1824	0.2540	0.3182	0.1838	0.1103	0.3488	0.3095	0.3920	0.1085	0.0776	0.3156	0.4201	0.2717
		146	THER_HIGH_GT13		0.2425	0.3484	0.3357	0.3191	0.1628	0.2894	0.3967	0.4295	0.0851	0.1272	0.5192	0.4433	0.0143
35	Home Care Condition Codes	147	HC_DX_INFECT		0.0616	0.0657	0.0761		0.0385	0.0996	0.1102	0.0707	0.0534	0.0377		0.0557	0.0587
		148	HC_DX_NEOPLASM		-0.1639	-0.2746	-0.1423	-0.1439	-0.1117	-0.2565	-0.2120	-0.2984	-0.1985	-0.1513	-0.1980	-0.2523	-0.5629
		149	HC_DX_BLOOD				-0.0314										-0.1373
		150	HC_DX_ENDOCRINE		-0.0420	-0.0302	-0.0507	-0.0365		-0.0349	-0.0259	-0.0306	-0.0288	0.0236	-0.1072	-0.0415	-0.0331
		151	HC_DX_MENTAL		0.0359	-0.0334	0.0424	-0.0800	-0.3096	0.1083		-0.0468	-0.2218	0.0460		-0.0472	0.1092
		152	HC_DX_NERVOUS		-0.2407	-0.1705	-0.1651	-0.1262	-0.1414		-0.1858	-0.1862	-0.1669	-0.1261		-0.1708	0.0880
		153	HC_DX_EYE		-0.0703							-0.0647	-0.1617	0.0630			0.1607
		154	HC_DX_EAR		0.1067	0.1292	0.1342				0.1629	0.1691		0.0904		0.1583	0.2943
		155	HC_DX_CIRCULATORY		0.0882	0.0868	0.0521	0.0587	0.0664	0.0416	0.1162	0.0910	0.0769	0.1104		0.0663	
		156	HC_DX_RESPIRATORY		-0.0324	-0.0567				-0.3665		-0.0259	-0.0389	-0.0698			-0.1195
		157	HC_DX_DIGESTIVE		0.0882	0.0682	0.0302				0.0699	0.0375	0.0433				-0.0567
		158	HC_DX_SKIN		-0.1448	-0.1536	-0.1391			-0.0467	-0.1292	-0.0995		0.0314	-0.1723	-0.1155	-0.2559
		159	HC_DX_MUSCL_SKEL		0.0272	0.0635		-0.0376		0.0582	0.0678	0.0656	0.0408	-0.1174		0.0455	0.1740
		160	HC_DX_GEN_URINARY		-0.0857	-0.0702	-0.0655	-0.0595	-0.0369		-0.0308	-0.0515	-0.0728		-0.2419	-0.0657	-0.1885
161	HC_DX_INT_ABNORM		-0.0332	-0.0346		-0.0905	-0.1020	0.0365			-0.0941	0.0404			0.0932		
162	HC_DX_EXT_INJURY		0.0335	0.0770	0.0780	0.0736	0.0406	0.1469	0.0977	0.0811	0.0983	0.0740		0.1095	0.0932		
163	HC_DX_EXT_MORB			0.0889	0.1369			0.1764	0.1367	0.0846	0.1236	0.1036		0.1608	0.2891		
164	HC_DX_HLTH_FACTORS			0.2223	0.2325	0.0797	0.1395	0.2562	0.2019	0.2579	0.2487	0.1607	0.2447	0.2481	0.2958		
	CONSTANT	165	_CONS		0.3026	0.0573	1.5339	1.4179	0.3705	0.3154	1.5009	1.7498	0.4866	0.0852	1.9354	2.4455	1.6362