Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual Version 4.0

Prepared for

Centers for Medicare & Medicaid Services
Contract No. 75FCMC18D0015

Quality Measure, Assessment Instrument Development, Maintenance and Quality Reporting Program Support for the Long-Term Care Hospital (LTCH), Inpatient Rehabilitation Facility (IRF), Skilled Nursing Facility (SNF) QRPs and Nursing Home Compare (NHC)

Prepared by
Acumen, LLC
500 Airport Blvd., Suite 365
Burlingame, CA 94010

Current as of October 1, 2022

[This page intentionally left blank.]

SKILLED NURSING FACILITY QUALITY REPORTING PROGRAM MEASURE CALCULATIONS AND REPORTING USER'S MANUAL VERSION 4.0

Table of Contents

List of Tables

Casper Reporting Tables

Measure Logic Specification Tables

Appendix Tables

[This page intentionally left blank.]

Chapter 1
Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual Organization and Definitions

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) Skilled Nursing Facility (SNF) Quality Reporting Program (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 SNF QRP and additional information pertaining to public reporting is publicly available and can be accessed through the SNF QRP website.[3] The next section outlines the organization of this manual and provides an overview of the information found in each chapter.

Section 1.1 Organization

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 and defining key terms that are used throughout subsequent chapters. **Chapters 2** through **5** provide detailed information about the measures and reporting components. **Chapters 2 and 3** identify the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network Measures (NHSN) quality measures and the Medicare claims-based measures, respectively. **Chapter 4** presents the data selection logic used to construct records and the selection criteria used to create Medicare Part A SNF Stays for the assessment-based quality measures that rely on the Minimum Data Set 3.0 (MDS). **Chapter 5** describes the two Certification and Survey Provider Enhanced Reports (CASPER) for the MDS-based quality measures, consisting of the CASPER Review and Correct reports and the CASPER Quality Measure (QM) reports. The CASPER Review and Correct Report is a single report that contains facility-level quarterly and cumulative rates and its associated resident-level data. The CASPER QM Report is comprised of two reports, one containing facility-level measure information and a second that includes resident-level data for a selected reporting period.

[1] This manual is specific to the SNF QRP. The manual used to calculate measures for the Nursing Home Quality Initiative (NHQI) is separate and can be found in the downloads section of the following website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/NursingHomeQualityInits/NHQIQualityMeasures

[2] Centers for Medicare & Medicaid Services. (February 2016). Quality Measures. Available at: https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/qualitymeasures?redirect=/qualitymeasures/

[3] The SNF QRP website can be found at the following link: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/Skilled-Nursing-Facility-Quality-Reporting-Program/SNF-Quality-Reporting-Program-Overview

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 6** describes the methods used to calculate the MDS-based measures that ***are not*** risk-adjusted, and **Chapter 7** describes the methods used to calculate the MDS-based measures that ***are*** risk- adjusted. **Chapter 8** provides the measure logical specifications for each of the quality measures calculated from the MDS in table format. **Appendix A** and the associated Risk-Adjustment Appendix File includes the intercept and covariate coefficient values that are used to calculate the assessment-based (MDS) risk-adjusted measures.

Section 1.2 SNF Stay Definitions

Facility Type: The SNF QRP QMs are calculated using MDS 3.0 records submitted from the following types of facilities:

- Nursing Home (SNF/NF) (A0200 = [1]); and
- Swing Bed providers (A0200 = [2])

The sample of facilities used for the SNF QRP measures does not include facilities that are certified solely as Nursing Facilities (i.e. not Medicare certified). Swing beds are only those located in non-critical access hospitals.

Medicare Part A Admission Record: Defined as a PPS[4] 5-Day assessment (A0310B = [01]). The PPS 5-Day assessment is the first Medicare-required assessment to be completed when a resident is first admitted or re-admitted to a facility for a Medicare Part A SNF Stay.

Medicare Part A Discharge Record: Defined as a Part A PPS Discharge Assessment (A0310H = [1]). A Part A PPS Discharge record is required when a resident's Medicare Part A SNF Stay ends. A Part A PPS Discharge Assessment (A0310H = [1]) may be combined with an OBRA[5] Discharge Assessment (A0310F = [10, 11]) when the End Date of Most Recent Medicare Stay (A2400C) is on the same day as the Discharge Date (A2000) (i.e., A2400C = A2000) or one day before the Discharge Date (i.e., A2400C = [A2000-1]).

Look-Back Scan: The look-back scan is conducted to review all qualifying Reasons for Assessments (RFAs) within a Medicare Part A SNF Stay to determine whether certain events or conditions occurred during that stay. The look-back period consists of the entire Medicare Part A SNF Stay specific to a resident. All assessments identified below as qualifying RFAs, with target dates within the Medicare Part A SNF Stay (i.e., look back period), are examined since some measures utilize MDS items that record events or conditions that occurred since the prior assessment was performed. Qualifying RFAs for the look-back scan include:

- **Federal OBRA Assessments:** A0310A = [01, 02, 03, 04, 05, 06]; ***or***
- **Medicare Part A PPS 5-Day Assessment:** A0310B = [01]; or

[4] Prospective Payment System (PPS)

[5] Omnibus Budget Reconciliation Act (OBRA)

- **OBRA Discharge Assessments:** A0310F = [10, 11]; ***or***
- **Medicare Part A PPS Discharge Assessment:** A0310H = [1].

Medicare Part A SNF Stay: A Medicare Part A SNF Stay includes consecutive time in the facility starting with the Medicare Part A Admission Record (PPS 5-Day assessment (A0310B = [01])) through the Medicare Part A Discharge Record (Part A PPS Discharge Assessment (A0310H = [1])) or Death in Facility Tracking Record (A0310F = [12]) at the end the SNF stay and all intervening assessments. A Medicare Part A SNF Stay, thus defined, may include interrupted stays lasting 3 calendar days or less.

- **Interrupted Medicare Part A SNF Stay**[6]**:** During a Medicare Part A SNF Stay the resident had an interruption in their Part A SNF stay and resumed the same Part A SNF stay within three consecutive calendar days.

The methodology for selecting the Medicare Part A SNF Stay-level sample is described in **Chapter 4, Section 4.1**. The following two types of stays are defined to help provide instructions on data selection in the measure calculation within the Quality Measure Target Period.

- **Type 1 SNF Stay**: a SNF stay with a matched pair of PPS 5-Day Assessment (A0310B = [01]) and PPS Discharge Assessment (A0310H = [1]) and no Death in Facility Tracking Record (A0310F = [12]) within the SNF Stay.
- **Type 2 SNF Stay**: a SNF stay with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).

Record Type: A grouping of MDS records with similar content that includes Entry Tracking Records (A0310F = [01]), OBRA assessments (A0310A = [01, 02, 03, 04, 05, 06]), Medicare Part A PPS 5-Day assessment (A0310B = [01]), Medicare PPS Discharge assessment (A0310H = [1]), OBRA Discharge Assessments (A0310F = [10, 11]), and Death-in Facility Tracking Records (A0310F = [12]). The selection criteria/logic for record type is provided in **Chapter 4, Section 4.2**.

Target Date: The event date for an MDS record, which is used to determine the sort order of MDS records for a resident's stay. The target date is different based on the type of assessment and are defined as follows:

- **Entry Tracking Record (A0310F = [01]):** target date is equal to the Entry Date (A1600);
- **OBRA Discharge Assessments (A0310F = [10, 11]) or Death-in-Facility Tracking Record (A0310F = [12]):** target date is equal to the Discharge Date (A2000);
- **For all other records (A0310F = [99]):** target date is equal to the Assessment Reference Date (ARD, A2300). Records can consist of Federal OBRA Assessments (A0310A),

[6] Please refer to the following link to access the MDS 3.0 RAI manual v1.17.1 for additional information about Interrupted Medicare Part A SNF Stays: https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/nursinghomequalityinits/mds30raimanual

Medicare Part A PPS Assessments (A0310B), or SNF Part A PPS Discharge Assessments (A0310H = [1]).

Target Period: The span of time that defines the Quality Measure Reporting Period (e.g., a 12-month calendar or fiscal year) for the SNF QRP quality measures. The target period for the SNF QRP quality measures is defined in **Chapter 4, Section 4.1.1**.

Section 1.3 Measure-Specific Definitions

The definitions below refer to the following measures:

- Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631[7]) (CMS ID: S001.03)
- SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)
- SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)
- SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)
- SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

Incomplete Stay: Incomplete Medicare Part A SNF stays are defined based on the measure. Incomplete Medicare Part A SNF stays occur if the resident was discharged to an acute care setting (e.g., acute hospital, psychiatric hospital, or long-term care hospital), had an unplanned discharge, was discharged against medical advice, had a stay that was less than three days, or died while in the facility.

Complete Stay: Complete stays are identified as Medicare Part A SNF stays that are not incomplete stays. All Medicare Part A SNF stays not meeting the criteria for incomplete stays will be considered complete stays.

Please refer to **Chapter 8** for the measure specifications specific to each measure.

Table 1-1 provides a list of the assessment-based (MDS) measures included in the SNF QRP and the corresponding identifier and reference name for each measure.

[7] The Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

Table 1-1
SNF Assessment-Based (MDS) Quality Measure NQF Number, CMS ID, and Measure Reference Name Crosswalk

Quality Measure	NQF #[a]	CMS ID[b]	Measure Reference Name
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay)[c]	0674	S013.02	Application of Falls
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function[d]	2631	S001.03	Application of Functional Assessment/Care Plan
Drug Regimen Review Conducted with Follow-up for Identified Issues – PAC SNF QRP	n/a	S007.02	DRR
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury	n/a	S038.02	Pressure Ulcer/Injury
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents[e]	2635	S024.04	Discharge Self-Care Score
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents[f]	2636	S025.04	Discharge Mobility Score
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents[g]	2633	S022.04	Change in Self-Care Score
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents[h]	2634	S023.04	Change in Mobility Score

[a] NQF: National Quality Forum

[b] Reflects changes in CMS measure identifiers based on updated measure specifications.

[c] This measure is NQF-endorsed for long-stay residents in nursing homes (https://www.qualityforum.org/QPS/0674) and an application of this quality measure is finalized for reporting by SNFs under the SNF QRP (*Federal Register* 80(4 August 2015): 46440-46444).

[d] This measure is an application of measure L009.03 and is finalized for reporting by SNFs under the SNF QRP (*Federal Register* 80(4 August 2015): 46389-46477). This measure is not NQF endorsed.

[e] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2635) and finalized for reporting by SNFs under the SNF QRP (*Federal Register* 82 (4 August 2017): 36530-36636).

[f] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2636) and finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[g] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2633) and an application of this quality measure is finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[h] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2634) and an application of this quality measure is finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[This page intentionally left blank.]

Chapter 2
National Healthcare Safety Network Measures

An overview of the NHSN measures and annual reports containing quality measure information can be accessed on the CDC NHSN website. Additionally, quality measure information and quality reporting program details related to the NHSN can be found in the FY 2022 SNF PPS final rule. Below is the CDC NHSN quality measure included in the SNF QRP as of October 1, 2022 and a hyperlink that provides detailed information about the measure on the CDC website, including measure descriptions and definitions, data collection methods, specifications (e.g. numerator, denominator, Standardized Infection Ratio (SIR) calculations), and reporting requirements:

- **National Healthcare Safety Network (NHSN) COVID-19 Vaccination Coverage among Healthcare Personnel (CMS ID: S040.01)**
    - This measure identifies the percentage of healthcare personnel (HCP) eligible to work in the SNF setting for at least one day during the reporting period who receive a complete COVID-19 vaccination course, regardless of clinical responsibility or patient contact.
        - CDC NHSN: HCP COVID-19 Vaccine

[This page intentionally left blank.]

Chapter 3
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 residents. Each measure is calculated using unique specifications and methodologies specific to the quality measure. Information regarding measure specifications and reporting details is publicly available and can be accessed on the SNF Quality Reporting Measures Information website.[8] Below are the Medicare claims-based measures included in the SNF QRP and hyperlinks that provide information about each measure, including measure descriptions and definitions, specifications (e.g., numerator, denominator, exclusions, calculations), care setting, and risk-adjustment.

- **Potentially Preventable 30-Day Post-Discharge Readmission Measure for Skilled Nursing Facility Quality Reporting Program (CMS ID: S004.01)**
    - This measure estimates the risk-standardized rate of unplanned, potentially preventable readmissions for residents (Medicare fee-for-service [FFS] beneficiaries) who receive services in skilled nursing facilities.
        - Medicare Claims-Based: Potentially Preventable Readmissions
- **Discharge to Community - Post Acute Care (PAC) Skilled Nursing Facility Quality Reporting Program (NQF #3481) (CMS ID: S005.02)**
    - This measure reports a SNF's risk-standardized rate of Medicare FFS residents who are discharged to the community following a SNF 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, with or without home health services.
        - Note: This measure has been updated to exclude residents who had a long-term nursing facility (NF) stay in the 180 days preceding their hospitalization and SNF stay, with no intervening community discharge between the long-term NF stay and qualifying hospitalization.
        - Medicare Claims-Based: Discharge to Community-Post Acute Care
- **Medicare Spending Per Beneficiary (MSPB) - Post-Acute Care (PAC) Skilled Nursing Facility Quality Reporting Program (CMS ID: S006.01)**
    - This measure evaluates SNF providers' resource use relative to the use of the national median SNF provider. Specifically, the measure assesses the cost to Medicare for services performed by the SNF provider during an MSPB-PAC SNF episode. The measure is calculated as the ratio of the price-standardized, risk-

[8] The SNF Quality Reporting Program Measures and Technical Information website can be found at the following link: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/Skilled-Nursing-Facility-Quality-Reporting-Program/SNF-Quality-Reporting-Program-Measures-and-Technical-Information

adjusted MSPB-PAC amount for each SNF divided by the episode-weighted median MSPB-PAC amount across all SNF providers.

    - Medicare Claims-Based: Medicare Spending Per Beneficiary

- **Skilled Nursing Facility (SNF) Healthcare-Associated Infections (HAI) Requiring Hospitalization Quality Measure (CMS ID: S039.01)**
    - This measure estimates the risk-standardized rate of HAIs that are acquired during SNF care and result in hospitalizations, as identified using the principal diagnosis on the Medicare inpatient (IP) claims of SNF residents. The hospitalization must occur during the period beginning on day four after SNF admission and within three days after SNF discharge. Since HAIs are not considered never-events, the measure's objective is to identify SNFs that have higher HAI rates than their peers.
        - Medicare Claims-Based: SNF Healthcare-Associated Infections

Chapter 4
Record Selection for Assessment-Based (MDS) Quality Measures

Section 4.1 Selection Logic for Key Data Elements Used to Construct Records

This section describes the process for using items from the MDS 3.0 to identify and categorize Medicare Part A SNF stays.[9] This section contains the following parts:

- Define the Quality Measure Target Period that will be used for the quality measure calculations for the SNF QRP.
- Create a unique identifier for each resident in the data, define the record types of the associated assesssments, and sort the assessments using these variables.
- Use date items from the MDS assessment data to determine the SNF Stay Start Date and SNF Stay End Date for each SNF stay. This is an iterative process that will be performed until the SNF Stay Start Dates and End Dates for all SNF stays during the Quality Measure Target Period have been identified.
- Use these SNF Stay Start Dates and End Dates to determine which assessments are associated with each stay.
- Categorize each SNF stay as one of two mutually exclusive SNF stay types, defined in **Chapter 1, Section 1.2**. The SNF stay types will be used to determine if a stay is included in the calculations for each of the quality measures in the SNF QRP. Note, the classification of SNF stay types is unchanged with interrupted stays lasting 3 calendar days or less.

Section 4.1.1 Define the Quality Measure Target Period

Define the Quality Measure Target Period that will be used for the quality measure calculations for the SNF QRP.

1. Define the Quality Measure Target Period.

   Note: The Quality Measure Target Period for all MDS-based quality measures in the SNF QRP is a 12-month calendar or fiscal year (i.e., four quarters).

   Example: The 12-month Quality Measure Target Period for CY2019 is January 1, 2019 – December 31, 2019.

[9] Please note that critical access hospitals with swing beds are exempt from the SNF PPS and are not required to submit quality data under the SNF QRP by means of the MDS per the requirements set forth by the IMPACT Act.

2. Include MDS assessments in the Quality Measure Target Period if their Target Dates fall on or after the beginning of the Target Period and on or before the end of the Target Period.

   Note: If there is a PPS Discharge Assessment (A0310H = [1]) that is combined with an OBRA Discharge Assessment and the End date of most recent Medicare stay (A2400C) on this PPS Discharge Assessment (A0310H = [1]) is the last day of the Target Period, the Target Date of this assessment will be on or one day after the end of the Target Period. This PPS Discharge Assessment (A0310H = [1]) should be included in the set of assessments for this iteration.

   Example: If the Quality Measure Target Period is January 1, 2019 – December 31, 2019, all MDS assessments should be included with a Target Date on or after January 1, 2019 and on or before December 31, 2019, or January 1, 2020 for PPS Discharge Assessments combined with OBRA Discharge Assessments.

Section 4.1.2 Create Resident Identifiers, Define Record Types, and Sort Associated Assessments

Create a unique identifier for each resident in the data, define the record types of the associated assessments, and sort the data using these variables.

1. Create a variable that uniquely identifies residents, defined as "'*State ID'*_'*Facility ID'*_'*Resident ID*'" using the following items from the MDS:
   a. State ID: the 2-digit state abbreviation code
   b. Facility ID: the facility identification number for SNFs
   c. Resident Internal ID: the resident identification number assigned by the QIES system
2. Define the record types of the associated assessments as follows:
   a. If A0310B = 01 (PPS 5-Day Assessment), then record_type = [2]
   b. Else If A0310H = 1 (PPS Discharge Assessment), then record_type = [3]
   c. Else If A0310F =12 (Death in Facility Tracking Record), then record_type = [4]
   d. Else record_type = [1]
3. Sort assessments in reverse chronological order using the identifier created in **Section 4.1.2 Step 1**, the record type defined in **Section 4.1.2 Step 2**, and three additional MDS items in the following order:
   a. *Unique resident identifier*.
   b. *Start date of most recent Medicare stay (A2400B)(descending)*.
   c. *MDS Target date (descending).* For a discharge assessment (A0310F = [10, 11]) or a Death in Facility Tracking Record (A0310F = [12]), the Target Date is the Discharge Date (A2000). For an entry or re-entry record (A0310F = [01]), the

Target Date is the Entry Date (A1600). For any other assessment type (A0310F = [99]), the Target Date is the Assessment Reference Date (ARD, A2300).

d. *Record type (descending).*

e. *Assessment Internal ID (descending).* The assessment internal ID is the internal identification number assigned to each assessment record in the MDS.[10]

Section 4.1.3 Identify SNF Stays

Definitions of SNF Stay Types. As defined in **Chapter 1**, **Section 1.2,** there are two different mutually exclusive stay types. The stay type will be used to determine if the stay is included in the calculations for quality measures in the SNF QRP (**Chapters 6** through **8**). Note, the classification of SNF stay types is unchanged with interrupted stays lasting 3 calendar days or less.

1. **Type 1 SNF Stay**: a SNF stay with a matched pair of PPS 5-Day Assessment (A0310B = [01]) and PPS Discharge Assessment (A0310H = [1]) and no Death in Facility Tracking Record (A0310F = [12]) within the SNF Stay Time Window (defined in **Step 2.1** below). Type 1 SNF stays may include one or more interruptions.
2. **Type 2 SNF Stay**: a SNF stay with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]). Type 2 SNF stays may include one or more interruptions. Death in Facility Tracking Records (A0310F = [12]) with A2400A = [0] (and, therefore, A2400B = [^] and A2400C = [^]), should not be used to mark the end of a Type 2 SNF stay.

Identify SNF Stays. Use date items from the MDS assessment data to determine the SNF Stay Start Date and SNF Stay End Date for each SNF stay. This is an iterative process that will be performed until the SNF Stay Start Dates and End Dates for all SNF stays during the Quality Measure Target Period have been identified.

1. Use the Quality Measure Target Period defined above to determine the search window start date and search window end date in the first iteration. The search window in the first iteration will be the same for all resident IDs in the data and is equal to the Quality Measure Target Period. For the first iteration, use the first day in the Quality Measure Target Period as the search window start date, and use the last day of the Quality Measure Target Period as the search window end date. Instructions for defining the search window in subsequent iterations are provided below in **Section 4.1.3 Step 3**.

   Example: If the Quality Measure Target Period is January 1, 2019 – December 31, 2019, the search window for the first iteration is January 1, 2019 through December 31, 2019, or January 1, 2020 for PPS Discharge Assessments combined with OBRA Discharge Assessments.

[10] Assessments that occur later in the sequence should be submitted and processed later than other records. The record processing timestamp would be a slightly better field to use for this purpose; however, it is available only to users who have direct access to the Minimum Data Set 3.0 (MDS 3.0) Assessment Submission and Processing (ASAP) database. The assessment internal ID was, therefore, adopted as a reasonable substitute for the timestamp so that all users would have access to the same sorting fields.

2. Within the search window, look for the PPS Discharge Assessment[11] (A0310H = [1]) or PPS 5-Day Assessment (A0310B = [01]) with the most recent Target Date.[12]

   Note: The following items from the MDS 3.0 will be used to define the SNF Stay Start Date and SNF Stay End Date for each SNF stay in **Steps 2.1** and **2.2** below:

   - Start date of most recent Medicare stay (A2400B)
   - End date of most recent Medicare stay (A2400C)
   - Discharge Date (A2000)

   Each of these items is coded as an 8-digit date (i.e., MM-DD-YYYY). To be considered "complete," all 8 digits must be filled with a numeric value.

   2.1. If the most recent of the two record types, with the higher sorting order, is a PPS Discharge Assessment (A0310H = [1]):

      - Use the Start date of most recent Medicare stay (A2400B) on this assessment as the SNF Stay Start Date for this SNF stay.
      - Use the End date of most recent Medicare stay (A2400C) on this assessment as the SNF Stay End Date for this SNF stay.
      - The SNF Stay Time Window is defined as the date in A2400B to the date in A2400C on the identified PPS Discharge Assessment.
      - Sort all qualifying RFAs with the same unique resident identifier if the Target Dates of the assessments occur within the SNF Stay Time Window.
      - Within the SNF Stay Time Window, look for a matched PPS 5-Day Assessment (A0310B = [01]). To be matched with the identified PPS Discharge Assessment (A0310H = [1]), the following criteria must be met:
        - Unique resident identifier is the same
        - Assessment type is PPS 5-Day Assessment (A0310B = [01])
        - The Target Date is within the SNF Stay Time Window
        - Start date of most recent Medicare stay (A2400B) is the same on the PPS 5-Day Assessment (A0310B = [01]) and the PPS Discharge Assessment (A0310H = [1]).

[11] The PPS Discharge Assessment can occur on its own or in combination with another type of assessment. For the purpose of stay file construction, any assessment record with A0310H = [1] is treated as a PPS Discharge Assessment, regardless of what other assessment types may be present on that assessment record.

[12] For a PPS Discharge Assessment (A0310H = [1]), the Target Date is equal to the Discharge Date (A2000) when the PPS Discharge Assessment is combined with an OBRA Discharge assessment (A0310F = [10, 11]). The Target Date of a standalone PPS Discharge assessment is the Assessment Reference Date (ARD, A2300). For a PPS 5-Day Assessment (A0310B = [01]), the Target Date is equal to the Assessment Reference Date (ARD, A2300).

Note: Because the Medicare Part A benefit resumes after an interruption, this criterion applies to qualifying RFAs within the SNF Stay Time Window with and without interruptions (A0310G1 = [0, 1]).

2.1.1. If there is a matched PPS 5-Day Assessment (A0310B = [01]) within the SNF Stay Time Window, this stay is identified as a **Type 1 SNF Stay**. The admission assessment for this stay is the matched PPS 5-Day Assessment (A0310B = [01]) and the discharge assessment is the matched PPS Discharge Assessment (A0310H = [1]):

- SNF Stay Start Date = A2400B on the PPS Discharge Assessment (A0310H = [1])
- SNF Stay End Date = A2400C on the PPS Discharge Assessment (A0310H = [1])

Note: Because the Medicare Part A benefit resumes after an interruption, the SNF Stay Start Date is equal to A2400B on the PPS Discharge Assessment (A0310H = [1]) and the SNF Stay End Date is equal to A2400C on the PPS Discharge Assessment (A0310H = [1]) for stays with an interruption (A0310G1 = [1]) and stays without an interruption (A0310G1 = [0]).

2.1.2. If this **Type 1 SNF Stay** has a Death in Facility Tracking Record (A0310F = [12]) within the SNF Stay Time Window that indicates the resident had a Medicare-covered stay since the most recent entry (A2400A = [1]), this stay should be reclassified as a **Type 2 SNF Stay**:

- SNF Stay Start Date = A2400B on the PPS 5-Day Assessment (A0310B = [01])
- SNF Stay End Date = A2000 on the Death in Facility Tracking Record (A0310F = [12])

2.1.3. If there is no matched PPS 5-Day Assessment (A0310B = [01]) within the SNF Stay Time Window, then it is not currently included in any quality measures in the SNF QRP.

2.2. If the most recent of the two record types, with the higher sorting order, is a PPS 5-Day Assessment (A0310B = [01]):

- Use the Start date of most recent Medicare stay (A2400B) on this assessment as the SNF Stay Start Date.
- Look for a more recent Death in Facility Tracking Record (A0310F = [12] in the search window, with a higher sorting order than the PPS 5-Day Assessment (A0310B = [01]), that meets the following criteria:
  - *Unique resident identifier* is the same identifier as on the identified PPS 5-Day Assessment,
  - The resident had a Medicare-covered stay since the most recent entry (A2400A = [1]), and

- The Start date of most recent Medicare stay (A2400B) is the same as on this PPS 5-Day Assessment.

2.2.1. If a more recent Death in Facility Tracking Record (A0310F = [12]) meeting the criteria is identified, then compare the End date of most recent Medicare stay (A2400C) and the Discharge Date (A2000) on this Death in Facility Tracking Record (A0310F = [12]).

2.2.1.1. If the End date of most recent Medicare stay (A2400C) is before the Discharge Date (A2000), the stay is not currently included in any quality measures in the SNF QRP.

2.2.1.2. If the End date of most recent Medicare stay (A2400C) is on or after the Discharge Date (A2000) or is missing, the stay is identified as a **Type 2 SNF Stay**.

- SNF Stay Start Date = A2400B on the PPS 5-Day Assessment (A0310B = [01])
- SNF Stay End Date = A2000 on the Death in Facility Tracking Record (A0310F = [12]).

Note: Because the Medicare Part A benefit resumes after an interruption, the SNF Stay Start Date is equal to A2400B on the PPS 5-Day Assessment (A0310B = [01]) and the SNF Stay End Date is equal to A2000 on the Death and Facility Tracking Record (A0310F = [12]) for stays with an interruption (A0310G1 = [1]) and stays without an interruption (A0310G1 = [0]).

2.2.2. If a more recent Death in Facility Tracking Record (A0310F = [12]) meeting the criteria is **not** found, then the stay is not currently included in any quality measures in the SNF QRP.

Note: Because the Medicare Part A benefit and assessment schedule resume after an interruption (A0310G1= [1]), all qualifying RFAs within the SNF Stay Time Window should have the same value for A2400B, used to create the SNF Stay Start Date, and A2400C, used to create the SNF Stay End Date, when these items are active and completed on the qualifying RFA.

2.3. If neither a PPS Discharge Assessment (A0310H = [1]) nor a PPS 5-Day Assessment (A0310B = [01]) is found within the search window, there is no SNF stay in this iteration.

3. Determine the search window start date and search window end date for the next iteration. The search window start date is always the same as the Quality Measure Target Period start date. Use the SNF Stay Start Date in the current iteration minus one day (i.e., A2400B minus 1) as the search window end date in the next iteration.

Note: The search window in the first iteration is always equal to the Quality Measure Target Period and is the same for all resident IDs in the data. The search window end date in the next iteration is determined from the SNF Stay Start Date in the current iteration;

therefore, in each subsequent iteration, there will be a different search window end date for each resident ID.

Example: If the Target Period is January 1, 2019 – December 31, 2019 and, for the first identified SNF Stay, the SNF Stay Start Date is July 1, 2019, then the search window for the search iteration is January 1, 2019 through June 30, 2019 (i.e., July 1, 2019 minus 1 day).

4. Return to **Step 2**. Repeat **Steps 2-3** until the last search window starts and ends on the first day of the Target Period.

Section 4.2 Selection Criteria to Create Medicare Part A SNF Stay-Level Records

This section presents record selection criteria for Medicare Part A SNF Stays for quality measure calculations. The measures identified below operate on a 12-month (four quarters) **Quality Measure Target Period.**

Measures included in this section:

- Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)
- Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631[13]) (CMS ID: S001.03)
- Drug Regimen Review Conducted with Follow-up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)
- Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)
- SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)
- SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)
- SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)
- SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

The eligible Medicare Part A SNF Stay-level records for these quality measures are selected as follows:

[13] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

1. Select all Medicare Part A SNF Stays that end within the Quality Measure Target Period, based on the target date (A2300) of the Medicare Part A Discharge Record (A0310H = [1]) or the target date (A2000) of the Death in Facility Tracking Record (A0310F = [12]).

   If there is a PPS Discharge Assessment (A0310H = [1]) that is combined with an OBRA Discharge Assessment and the End date of most recent Medicare stay (A2400C) on this PPS Discharge Assessment (A0310H = [1]) is the last day of this search window, the Target Date of this assessment will be on or one day after the search window end date.

2. For each resident within each SNF: follow steps described in **Section 4.1** to select records and identify Medicare Part A SNF stays.
3. Apply the respective quality measure specifications in **Chapter 8** to the eligible resident Medicare Part A SNF Stay-level records from the target period.
   a. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02), ***Table 8-1***
   b. Application of Percent of Long-Term Care Hospital (LTCH) Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addressed Function (NQF #2631[14]) (CMS ID: S001.03), ***Table 8-2***
   c. Drug Regimen Review Conducted with Follow-up for Identified Issues – PAC SNF QRP (CMS ID: S007.02), ***Table 8-3***
   d. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02), ***Table 8-4***
   e. SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04), ***Table 8-5***
   f. SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04), ***Table 8-6***
   g. SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04), ***Table 8-7***
   h. SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04), ***Table 8-8***
4. Refer to the respective tables in **Chapter 5** for data included in the CASPER Review and Correct reports and the CASPER QM reports.
   a. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)
      i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates
      ii. CASPER QM reports ***Table 5-5***

[14] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

b. Application of Percent of Long Term Care Hospital (LTCH) Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631[15]) (CMS ID: S001.03)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

c. Drug Regimen Review Conducted with Follow-up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

d. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

e. SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

f. SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

g. SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

h. SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

   i. CASPER Review & Correct reports are provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates

   ii. CASPER QM Reports ***Table 5-5***

[15] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

5. Round off the percent value to the nearest first decimal. If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged. Drop all the digits following the first decimal place.

Chapter 5
Certification and Survey Provider Enhanced Reports (CASPER) Data Selection for Assessment-Based (MDS) 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 SNF QRP and are specific to those quality measures calculated using the MDS. Information about the CASPER reports can be found on the CMS website at the following link: CASPER Reports

- **The CASPER Review and Correct Reports** contain facility-level and resident-level measure information and are updated on a quarterly basis with data refreshed weekly as data become available.
    - These reports allow providers to obtain facility-level performance data and its associated resident-level 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 have access to 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).
- **The CASPER QM Reports** are refreshed monthly and separated into two reports: one containing measure information at the facility level and another at the resident level, for a single reporting period. The intent of these reports is to enable tracking of quality measure data regardless of quarterly submission deadline ("freeze") dates.
    - The assessment-based (MDS) measures are updated monthly, at the facility and resident level, as data become available. The performance data contain the current quarter (may be partial) and the past three quarters.
    - The claims-based measures are updated annually at the facility-level only.

The CASPER Review and Correct Reports and the CASPER QM Reports can help identify data errors that affect performance scores. They also allow the providers to utilize the data for quality improvement purposes.

Section 5.1 of this chapter contains the data selection for the assessment-based (MDS) quality measures for the CASPER Review and Correct Reports.

Section 5.2 of this chapter presents data selection information that can be applied to both the CASPER Resident-level QM Reports and the CASPER Facility-level QM Reports, since the criteria and reporting periods for the CASPER QM Reports are consistent across the facility- and resident-level reports.

Section 5.1 CASPER Review and Correct Reports

Below are the specifications for the CASPER Review and Correct Reports for quality measures presented in **Chapter 4, Section 4.2**:

1. Quarterly reports contain quarterly rates and a cumulative rate.
    a. The quarterly quality measure data will be displayed using up to one quarter of data.
    b. The cumulative quality measure data will be displayed using all data in the target period.
        i. **For all measures, excluding the Change in Self-Care and Change in Mobility measures:** the cumulative rate is derived by including all Medicare Part A SNF stays in the numerator for the target period, which do not meet the exclusion criteria, and dividing by all Medicare Part A SNF stays included in the denominator for the target period.
        ii. **For the Change in Self-Care and Change in Mobility measures:** the cumulative quality measure score is derived by including all Medicare Part A SNF stays for the target period, which do not meet the exclusion criteria, and calculating the change scores for each Medicare Part A SNF stay. For instructions on calculating the change scores, please see **Chapter 7, Section 7.6**.
    c. Data submission deadline: data must be submitted by 11:59 p.m. ET on the 15th of August, November, February, or May after the end of each respective quarter. However, if the 15th of the month falls on a Friday, weekend, or federal holiday, the data submission deadline is delayed until 11:59 p.m. ET on the next business day.
        i. For example, the data submission deadline for Quarter 1 (January 1 through March 31) data collection would normally be 11:59 p.m. ET, August 15, which is the 15th day of the month, 4.5 months after the end of the data collection period. However, in FY 2021, August 15th falls on a Sunday; therefore, the deadline for this data submission is extended until the next business day which would be 11:59 p.m. ET on August 16, 2021.
    d. The measure calculations for the quarterly rates and the cumulative rates are refreshed weekly.
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. Resident-level data will be displayed for each reporting quarter in the report.[16]
4. The illustration of the reporting timeline for the CASPER Review and Correct Reports for the following quality measures is provided in ***Table 5-3*** for the quarterly rates and ***Table 5-4*** for the cumulative rates:

[16] Resident-level data became available for the Review and Correct reports in April 2019.

a. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)

b. Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631[17]) (CMS ID: S001.03)

c. Drug Regimen Review Conducted With Follow-Up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)

d. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)

e. SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)

f. SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)

g. SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)

h. SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

Data calculation rule: The calculations include resident Medicare Part A SNF Stays with discharge dates through the end of the quarter.

Table 5-1 defines the discharge dates included for each calendar year quarter. ***Table 5-2*** displays whether the quality measure was considered new or existing for CASPER reporting in the user-requested year. For new measures, data is accumulated until 4 quarters have been collected and then rolling quarters occur for subsequent years. For existing measures, data is displayed based on rolling quarters.

[17] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

Table 5-1
Discharge Dates for Each Quarter Defined by Calendar Year

Calendar Year Quarter	Discharge Dates Included in the Report
Quarter 1	January 1 through March 31
Quarter 2	April 1 through June 30
Quarter 3	July 1 through September 30
Quarter 4	October 1 through December 31

Table 5-2
Measure Types by User-Requested Year for all Assessment-Based (MDS) Quality Measures

Quality Measures	Measure Type by User-Requested Year	
	2022	2023
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)	Existing	Existing
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631[a]) (CMS ID: S001.03)	Existing	Existing
Drug Regimen Review Conducted with Follow-up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)	Existing	Existing
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)	Existing	Existing
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)	Existing	Existing
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)	Existing	Existing
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)	Existing	Existing
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)	Existing	Existing

[a] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

Table 5-3
CASPER Review and Correct Reports: Quarterly Rates Included in Each Requested Quarter End Date[a]

Requested Calendar Year Quarter End	Measure Type	Quarter(s) Included from Previous Year[c]	Quarter(s) Included from User-Requested Year
Quarter 1, YYYY	New	–	Quarter 1
	Existing	Quarter 2 Quarter 3 Quarter 4	Quarter 1
Quarter 2, YYYY	New	–	Quarter 1 Quarter 2
	Existing	Quarter 3 Quarter 4	Quarter 1 Quarter 2
Quarter 3, YYYY	New	–	Quarter 1 Quarter 2 Quarter 3
	Existing	Quarter 4	Quarter 1 Quarter 2 Quarter 3
Quarter 4, YYYY	New	–	Quarter 1 Quarter 2 Quarter 3 Quarter 4
	Existing	–	Quarter 1 Quarter 2 Quarter 3 Quarter 4

[a] See ***Table 5-1*** for discharge dates included for each quarter and ***Table 5-2*** to determine the measure type for each quality measure.

[b] YYYY = User-Requested Year

[c] Calendar year prior to the User-Requested Year

Example of quarterly rates included in the CASPER Review and Correct Reports for an *existing* measure: If the requested calendar year quarter end date is Quarter 1, 2020 (end date of March 31st), the four quarters of data that will be provided in this request will include the following: Q2 2019 (April through June), Q3 2019 (July – September), Q4 2019 (October – December), and Q1 2020 (January – March).

Example of quarterly rates included in the CASPER Review and Correct Reports for a *new* measure: If the requested calendar year quarter end date is Quarter 1, 2020 (end date of March 31st), the only quarter of data that will be provided in this request will include the following: Q1 2020 (January – March).

Table 5-4
CASPER Review and Correct Reports: Data Included in the Cumulative Rate for Each Requested Quarter End Date

Requested Calendar Year Quarter End	Measure Type	Data Included from Previous Year[b]	Data Included from User-Requested Year
Quarter 1, YYYY	New	–	Quarter 1
	Existing	Quarter 2 through Quarter 4	Quarter 1
Quarter 2, YYYY	New	–	Quarter 1 through Quarter 2
	Existing	Quarter 3 through Quarter 4	Quarter 1 through Quarter 2
Quarter 3, YYYY	New	–	Quarter 1 through Quarter 3
	Existing	Quarter 4	Quarter 1 through Quarter 3
Quarter 4, YYYY	New	–	Quarter 1 through Quarter 4
	Existing	–	Quarter 1 through Quarter 4

[a] YYYY = User-Requested Year

[b] Calendar year prior to the User-Requested Year

Section 5.2 CASPER Quality Measure (QM) Reports

Below are the specifications for the CASPER QM Reports for measures presented in **Chapter 4, Section 4.2.**

1. Measures are calculated consistent with the methods in the previous section, **Chapter 5, Section 5.1, "CASPER Review and Correct Reports"**.
    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 5-5***:
    a. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)
    b. Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631[18]) (CMS ID: S001.03)
    c. Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)
    d. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)
    e. SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)

[18] This measure (S001.03) is an application of measure L009.03 and is not NQF endorsed.

f. SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)

g. SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)

h. SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

Data calculation rule: The calculations include resident Medicare Part A SNF Stays with discharge dates through the end of the month.

Table 5-5
CASPER QM Reports: Data Included in the Cumulative Rate for Each Requested Report End Dates

Requested Report End Date[a]	CASPER QM Report Calculation Month	Data Included from Previous Year[b,c]	Data Included from User-Requested Year
03/31/YYYY (Quarter 1, YYYY)	February	April through December	January
	March	April through December	January through February
	April	April through December	January through March
06/30/YYYY (Quarter 2, YYYY)	May	July through December	January through April
	June	July through December	January through May
	July	July through December	January through June
09/30/YYYY (Quarter 3, YYYY)	August	October through December	January through July
	September	October through December	January through August
	October	October through December	January through September
12/31/YYYY (Quarter 4, YYYY)	November	–	January through October
	December	–	January through November
	January	–	January through December

[a] YYYY = User-Requested Year

[b] If there is less than 12 months of data as of requested report end date, then use the earliest month of data available.

[c] Calendar year prior to the User-Requested Year

[This page intentionally left blank.]

Chapter 6
Calculations for Unadjusted Observed Scores on Assessment-Based (MDS) Measures

Section 6.1 Introduction

For the Review and Correct Reports, only the facility-level observed score is computed; the facility's risk-adjusted score is not reported. This chapter presents technical details regarding the calculation of the unadjusted scores on the MDS-based SNF QRP quality measures. The detailed quality measure logical specifications are presented in **Chapter 8** of this manual. **Prior to the measure specification steps presented in Chapter 8, please refer to Chapter 4 on instructions to define the Medicare Part A SNF stays for the QM sample and for the record selection criteria.**

Section 6.2 Steps Used in Quality Measure Calculations

This section outlines the steps used to calculate the observed facility-level scores on MDS-based quality measures.

Measure Calculation Steps:

1. **Medicare Part A SNF Stay File Creation.** Using the methodology described in **Chapter 4**, identify Medicare Part A SNF Stays and create the SNF stay file.
2. **Identify Excluded Medicare Part A SNF Stays.** For each quality measure with exclusions, Medicare Part A SNF stays are excluded if the measure exclusion criteria are met.
3. **Determine the denominator count**. For each quality measure, count the total number of Medicare Part A SNF Stays that don't meet the exclusion criteria for each facility.
4. **Determine the numerator count.** For each quality measure, among the Medicare Part A SNF stays in the denominator, count the total number of Medicare Part A SNF Stays that meet the criteria for the measure numerator in each facility.
5. **Calculate the facility-level observed score.** Divide the numerator by the denominator for each quality measure and each SNF. Multiply by 100 to obtain a percent value.
6. **Round the percent value to one decimal place**.
    a. If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.
    b. Drop all the digits following the first decimal place.
7. **Final Facility-level output File.** The final facility-level output files contain the following:
    a. Facility denominator count for each quality measure
    b. Facility numerator count for each quality measure

c. Facility-level observed quality measure score

Chapter 7
Calculations for Assessment-Based (MDS) Measures That Are Risk-Adjusted

Section 7.1 Introduction

This chapter presents technical details regarding calculating the risk-adjusted scores on the MDS-based SNF QRP quality measures. The detailed quality measure logical specifications are presented in **Chapter 8** of this manual.

Currently, five assessment-based quality measures for the SNF QRP are risk-adjusted using resident-level covariates for public reporting:

- Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)
- SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)
- SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMD ID: S025.04)
- SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)
- SNF Functional Outcome measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

Detailed specifications for resident-level covariates for the risk-adjusted measures are presented in **Chapter 8**, Quality Measure Logical Specifications.

Section 7.2 to **Section 7.4** outline the steps and methods used to calculate the risk-adjusted measure score for Changes in Skin Integrity Post- Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02). **Section 7.5** presents the steps specific to the measure calculations used for SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04) and SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04). **Section 7.6** presents the steps specific to the measure calculations for SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04) and SNF Functional Outcome measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

Section 7.2 Steps Used in QM Calculations

This section outlines the steps used to calculate the risk-adjusted assessment-based SNF QRP quality measure Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02).

Measure Calculation Steps:

1. **Medicare Part A SNF Stay file creation.** Using the methodology described in **Chapter 4**, identify Medicare Part A SNF Stays and create the SNF stay file.
2. **Calculate the facility-level observed score.** To calculate the facility-level observed score, complete **Steps 1-5** from **Chapter 6, Section 6.2**.
3. **Create stay-level covariates.** If the covariate criteria are met, then assign the covariate a value of [1] for the stay. Otherwise, assign the covariate a value of [0].
4. **Run the Logistic Regressions**.
    a. Input: Medicare Part A SNF Stay file.
    b. Dependent variable: Does the Medicare Part A SNF stay meet the criteria for the measure? (Yes = [1]; No = [0]).
    c. Predictors: Stay-level covariates.
    d. Calculation of logistic regressions: (See **Section 7.3, "Calculation of the Expected Quality Measure Score"** in this chapter).
    e. Output values: Logistic regression constant term and stay-level covariate coefficients for each of the quality measures. The resulting values are given in ***Table A-2*** of **Appendix A** and the associated Risk-Adjustment Appendix File.
5. **Calculate the stay-level expected quality measure scores.** Stay-level expected quality measure scores are calculated for each stay in the Medicare Part A SNF Stay samples. (See **Section 7.3, "Calculation of the Expected Quality Measure Score"** in this chapter for formulas).
    a. Input: Logistic regression constant term and stay-level covariate coefficients from the previous step for each risk-adjusted quality measure.
    b. Output values: Stay-level expected quality measure scores for each stay, for each of the risk-adjusted quality measures.
6. **Calculate national average quality measure scores**[19]. National average observed quality measure scores are needed for calculating the facility-level risk-adjusted quality measure scores below. The national average observed quality measure scores are calculated for each risk-adjusted quality measure:
    a. Denominator: For each quality measure, count the total number of Medicare Part A SNF Stays that don't meet the exclusion criteria.
    b. Numerator: For each quality measure, from the denominator sample, count the total number of Medicare Part A SNF Stays that meet the criteria for numerator inclusion for the quality measure.
    c. National average observed quality measure score: Divide the numerator by the denominator. The national average observed quality measure scores, required for these calculations, are presented in ***Table A-1*** of **Appendix A** and the associated Risk-Adjustment Appendix File.

[19] The national average observed scores are calculated using the Medicare Part A SNF stay as the unit of analysis.

7. **Calculate facility-level expected quality measure scores.** This is done by averaging the stay-level expected QM scores for each quality measure within each SNF.
8. **Calculate facility-level risk-adjusted quality measure scores**.
    a. Input for each of the risk-adjusted quality measures:
        i. Facility-level observed quality measure scores
        ii. Facility-level expected quality measure scores
        iii. National average observed quality measure score
    b. Calculation: (See **Section 7.4, "Calculation of the Risk-Adjusted quality measure Score"** of this chapter for formulas used in this calculation)
    c. Output: Facility-level risk-adjusted quality measure scores for the risk-adjusted quality measure
9. **Final facility-level output file.** The final facility-level output files contain the following:
    a. Facility denominator counts
    b. Facility-level risk-adjusted quality measure scores (reported for the risk-adjusted quality measure scores)

Section 7.3 Calculation of the Expected Quality Measure Score

This section outlines the steps used to calculate the risk-adjusted assessment-based SNF QRP quality measure Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02).

The stay-level expected score for a quality measure is an estimate of the likelihood that a stay will meet the criteria for the quality measure. This estimate is based on consideration of the stay-level covariates associated with the quality measure.

For the quality measures that are risk-adjusted with stay-level covariates, the stay-level expected quality measure score is calculated as an intermediate step to obtaining the risk-adjusted quality measure score for the facility. This section describes the technical details referred to in **Section 7.2** of this chapter.

Calculating Stay-level Expected QM Scores

For quality measures that use logistic regression in the risk adjustment, a stay-level logistic regression model is estimated. The stay-level observed quality measure score is the dependent variable. The predictor variables are one or more stay-level covariates associated with the quality measure. Calculation of the quality measure and covariate scores are described in **Section 7.2** (**Step 5**) of this chapter.

Each logistic regression had the following form:

[1] $QM\ triggered\ (yes = 1, no = 0) = \beta_0 + \beta_1 * COV_1 + \beta_2 * COV_2 + \cdots + \beta_N * COV_N$

Where:

- $\boldsymbol{\beta_0}$ = the logistic regression constant
- $\boldsymbol{\beta_1}$ = the logistic regression coefficient for the first covariate
- $\boldsymbol{COV_1}$ = the stay-level score for the first covariate
- $\boldsymbol{\beta_2}$ = the logistic regression coefficient for the second covariate, where applicable
- $\boldsymbol{COV_2}$ = the stay-level score for the second covariate, where applicable
- $\boldsymbol{\beta_N}$ = the logistic regression coefficient for the N^{th} covariate, where applicable
- $\boldsymbol{COV_N}$ = the stay-level score for the N^{th} covariate, where applicable
- *Note, "*N*" represents the total number of covariates in the model.

Each stay's expected QM score could then be calculated with the following formula:

[2] $Stay\ level\ expected\ QM\ score = 1/[1 + e^{-x}]$

Where:

- $\boldsymbol{e}$ = the base of natural logarithms
- $\boldsymbol{x}$ = a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [1], above). Note: A covariate score will be equal to [1] if the covariate criterion is met for that stay, and equal to [0] if the criterion is not met.

As an example, consider the actual calculation used for the expected score for the measure *Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)*. The covariates for that QM are obtained from the PPS 5-Day assessment (A0310B = [1]) and are the following:

- Indicator of requiring limited or more assistance in bed mobility self-performance
- Indicator of bowel incontinence at least occasionally
- Have diabetes or peripheral vascular disease or peripheral arterial disease
- Indicator of Low Body Mass Index, based on Height and Weight

The equation used for this example (with the parameters from ***Table A-2***[20]) is:

[3] $\mathrm{QM}Score = 1/[1 + e^{-(\beta_0+\beta_1*bedmob+\beta_2*bowel+\beta_3*diabetes+\beta_4*BMI)}]$

Where:

- $\boldsymbol{\beta_0}$ = the logistic regression constant

[20] The regression constant (intercept) and coefficient values have been rounded to four decimal places. When applying these values to the equation to calculate QM scores, these intercept and coefficient values should be used; do not round to fewer than four decimal places. This is to ensure consistency and accuracy of measure calculations.

- β_1 = the logistic regression coefficient for bed mobility
- ***Bedmob*** = the stay-level covariate indicating the need for limited or more assistance in bed mobility
- β_2 = the logistic regression coefficient for bowel incontinence at least occasionally
- ***bowel*** = the stay-level covariate indicating bowel incontinence at least occasionally
- β_3 = the logistic regression coefficient for diabetes or peripheral vascular disease or peripheral arterial disease
- ***diabetes*** = the stay-level covariate indicating diabetes or peripheral vascular disease or peripheral arterial disease
- β_4 = the logistic regression coefficient for low body mass index
- ***BMI*** = the stay-level covariate indicating low body mass index

The values for the covariate parameter for each of the *k* risk-adjustment coefficients (β_k) used for calculating the stay-level expected quality measure scores are presented in ***Table A-2*** of **Appendix A** and the associated Risk-Adjustment Appendix File.

Calculating Facility-level Expected Quality Measure Scores

Once an expected quality measure score has been calculated for all stays, the facility-level expected quality measure score is simply the average of all stay-level scores for each of the risk-adjusted quality measures.

Section 7.4 Calculation of the Risk-Adjusted Quality Measure Score

This section outlines the steps used to calculate the risk-adjusted assessment-based SNF QRP quality measure Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02).

The risk-adjusted quality measure score is a facility-level quality measure score adjusted for the specific risk for that quality measure in the SNF. The risk-adjusted quality measure score can be thought of as an estimate of what the SNF's quality measure rate would be if the facility had residents who were of average risk.

The facility-level risk-adjusted score is calculated on the basis of:

- The facility-level observed quality measure score;
- The facility-level expected quality measure score; ***and***
- The national average observed quality measure score.

The actual calculation of the risk-adjusted score uses the following equation:

[4] $Adj = \frac{1}{1+e^{-y}}$

Where:

- ***e*** = the base of natural logarithms
- ***Adj*** = the facility-level risk-adjusted quality measure score
- ***y*** = the product of Formula **[5]**, below

$$[5]\ y = ln\left(\frac{Obs}{1-Obs}\right) - ln\left(\frac{Exp}{1-Exp}\right) + ln\left(\frac{Nat}{1-Nat}\right)$$

Where:

- ***Obs*** = the facility-level observed quality measure score
- ***Exp*** = the facility-level expected quality measure score
- ***Nat*** = the national observed quality measure score
- ***ln*** = the natural logarithm

*Note: Because there is limited public accessibility to national assessment data, this document provides a national average observed score based on the reporting period of the regression intercept and coefficients. The national average observed score can be seen in **Table A-1** of **Appendix A** and the associated Risk-Adjustment Appendix File. Please note that, depending on the reporting period and time of calculation, the national average observed score used in the CASPER QM Report, Provider Preview Report, and on public display on the Compare Website may vary from the national average observed score provided in these documents.*

Note that the risk-adjusted quality measure rate (*Adj*) is calculated differently in two special cases:

1. If the facility-level observed score (*Obs*) equals 0, then the facility-level risk-adjusted score (*Adj)* is set to 0.00 (without using the equation).
2. If the facility-level observed score (*Obs*) equals 1, then the facility-level risk-adjusted score (*Adj)* is set to 1.00 (without using the equation).

The adjusted quality measure score equation will produce risk-adjusted scores in the range of 0 to 1. These risk-adjusted scores can then be converted to percentages for ease of interpretation by multiplying the risk-adjusted score (*Adj*) by 100 and rounding the percent value to one decimal place.

1. If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.
2. Drop all the digits following the first decimal place.

These risk-adjusted score calculations are applied to quality measures that use expected scores based on stay-level covariates (See **Section 7.3** of this chapter). The national average observed quality measure rates, required for these calculations, are presented in ***Table A-1*** of **Appendix A** and the associated Risk-Adjustment Appendix File.

Section 7.5 Measure Calculations Used in Discharge Function Measures

This section presents the steps specific to the measure calculations used for SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04) and SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMD ID: S025.04)

1. **Calculate the observed discharge score** (items and valid codes are identified in ***Table 8-5*** and ***Table 8-6***) for each stay.
   1.1. To obtain the score, use the recoding procedure (identified in ***Table 8-5*** and ***Table 8-6***).
   1.2. Sum the scores of the items to create a discharge score for each Medicare Part A SNF stay record.
2. **Identify excluded stays**, as defined in ***Table 8-5*** and ***Table 8-6***, and **determine the included records**, or the total number of Medicare Part A SNF Stays that did not meet the exclusion criteria.
3. **Calculate the expected discharge score for each stay**.

   For each stay-level record: use the intercept and regression coefficients to calculate the expected discharge score using the formula below:

   $$[\mathbf{1}]\ Expected\ score = \beta_0 + \beta_1(COV_1) + \ldots + \beta_n(COV_n)$$

   Where:

   - ***Expected score*** estimates an expected discharge score
   - $\boldsymbol{\beta_0}$ is the regression intercept
   - $\boldsymbol{\beta_1}$ ***through*** $\boldsymbol{\beta_n}$ are the regression coefficients for the covariates (see Risk-Adjustment Appendix File).
     - Note that any expected score greater than the maximum would be recoded to be the maximum score.

See **Appendix A**, ***Table A-4***, and the associated Risk-Adjustment Appendix File for the regression intercept and coefficients as well as detailed MDS coding for each risk adjustor.[21] The regression intercept and regression coefficients are values obtained through Generalized Linear Model regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression intercepts and coefficients based on the target period stated in ***Table A-4*** and the associated Risk-Adjustment Appendix File.

4. **Calculate the difference between the observed and expected scores**. For each Medicare Part A SNF stay record, compare each stay's observed discharge score (**Step 1.2**) and expected discharge score (**Step 3**) and classify the difference as one of the following:

[21] The regression constant (intercept) and coefficient values have been rounded to four decimal places. When applying these values to the equation to calculate facility-level QM scores, these intercept and coefficient values should be used; do not round to fewer than four decimal places. This is to ensure consistency and accuracy of measure calculations.

4.1. Observed discharge score is equal to or higher than the expected discharge score.

4.2. Observed discharge score is lower than the expected discharge score.

5. **Determine the denominator count**. Determine the total number of Medicare Part A SNF stays that do not meet the exclusion criteria.
6. **Determine the numerator count**. The numerator for this quality measure is the number of Medicare Part A SNF Stays with an observed discharge score that is the same as or higher than the expected discharge score (**Step 4.1**).
7. **Calculate the facility-level discharge percent**. Divide the facility's numerator count by its denominator count and multiply that value by 100 to obtain the facility-level percent; that is, divide the result of **Step 6** by the result of **Step 5** and then multiply by 100 to obtain a percent value.
8. **Round the percent value to one decimal place**.

   8.1. If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.

   8.2. Drop all the digits following the first decimal place.

Section 7.6 Measure Calculations Used in Change Function Measures

This section presents the steps specific to the measure calculations for SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04) and SNF Functional Outcome measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)

1. **Calculate the observed scores (admission and discharge)** items and valid codes are identified in ***Table 8-7*** and ***Table 8-8***.

   1.1. To obtain the score, use the recoding procedure (identified in ***Table 8-7*** and ***Table 8-8***).

   1.2. Sum the scores of the items to create a score for each Medicare Part A SNF stay record.

2. **Identify excluded stays**, as defined in ***Table 8-7*** and ***Table 8-8***.
3. **Determine the included records.** Determine the total number of Medicare Part A SNF Stays that did not meet the exclusion criteria. Note that this measure does not have a simple form for the numerator and denominator.
4. **Calculate the observed change in scores for each stay-level record.** For each stay-level record included, calculate the difference between the admission score and the discharge score. If a stay's score decreased from admission to discharge, the difference will be a negative value.
5. **Calculate the facility-level average observed change in score**. Calculate an average observed change in score for each SNF as the mean of the observed change in scores for all stays in the facility that are not excluded (**Step 4**).

6. **Calculate the national average change in score**[22] as the mean of the observed change in scores for all Medicare Part A SNF stays calculated from **Steps 1-4** in **Chapter 7, Section 7.6**. This will be used in **Step 9** to calculate the risk-adjusted average change in score.
7. **Calculate the expected change in score**.
   7.1. For each stay-level record, use the intercept and regression coefficients to calculate the expected change in score using the formula below:

$$[1]\ Expected\ change\ score = \beta_0 + \beta_1(COV_1) + \ldots + \beta_n(COV_n)$$

   Where:

   - ***Expected change in score*** identifies the expected change in score for each SNF stay.
   - β_0 is the regression intercept.
   - β_1 ***through*** β_n are the regression coefficients for the covariates (see Risk-Adjustment Appendix File).

See **Appendix A**, ***Table A-4***, and the associated Risk-Adjustment Appendix File for the regression intercept and coefficients as well as detailed MDS coding for each risk adjustor.[23] The regression intercept and regression coefficients are values obtained through Generalized Linear Model regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression intercepts and coefficients based on the target period stated in ***Table A-4*** and the associated Risk-Adjustment Appendix File.

8. **Calculate the facility-level average expected change in score**. Calculate an average expected change in score for each SNF as the mean of the expected change in scores for all stay in the facility.
9. **Calculate the risk-adjusted average change score**.
   9.1. Calculate the difference between the facility-level observed change in score (**Step 5**) and the facility-level expected change in score (**Step 8**) to create an observed minus expected difference.
      - A value that is 0 indicates the observed score and expected score are equal.
      - A value that is greater than 0 indicates that the observed change in score is higher (better) than the expected score.
      - A value that is less than 0 indicates that the observed change in score is lower (worse) than the expected score.
   9.2. Add each SNF´s difference value (**Step 9.1**) to the national average change in score (**Step 6**). This is the SNF's risk-adjusted mean change in score.
10. **Round the value to one decimal place**.

[22] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

[23] The regression constant (intercept) and coefficient values are rounded to four decimal places. When applying these values to the equation to calculate facility-level QM scores, these intercept and coefficient values should be used; do not round to fewer than four decimal places. This is to ensure consistency and accuracy of measure calculations.

10.1. If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.

10.2. Drop all the digits following the first decimal place.

Chapter 8
Measure Logical Specifications for Assessment-Based (MDS) Quality Measures

Table 8-1
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: S013.02)

Measure Description
This quality measure reports the percentage of Medicare Part A SNF Stays where one or more falls with major injury (defined as bone fractures, joint dislocations, closed head injuries with altered consciousness, or subdural hematoma) were reported during the SNF stay.
Measure Specifications[a]
If a resident has multiple Medicare Part A SNF Stays during the target 12 months, then all stays are included in this measure. ***Numerator*** The total number of Medicare Part A SNF Stays (Type 1 SNF Stays only) in the denominator with one or more look-back scan assessments that indicate one or more falls that resulted in major injury (J1900C = [1, 2]). ***Denominator*** The total number of Medicare Part A SNF Stays (Type 1 SNF Stays only) with one or more assessments that are eligible for a look-back scan[b] (except those with exclusions). ***Exclusions*** Medicare Part A SNF Stays are excluded if: 1. The number of falls with major injury was not coded; i.e., J1900C (Falls with Major Injury) = [-]. 2. The resident died during the SNF stay (i.e. Type 2 SNF Stays). a. Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).
Covariates
None.

[a] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

[b] Please refer to **Chapter 1, Section 1.2** for a list of assessments that are included in the look-back scan.

Table 8-2
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF#2631) (CMS ID: S001.03)[a]

Measure Description
This quality measure reports the percentage of Medicare Part A SNF Stays with an admission and discharge functional assessment and a care plan that addresses function.
Measure Specifications[b]
If a resident has multiple Medicare Part A SNF stays during the target 12 months, then all stays are included in this measure. ***Incomplete and Complete Medicare Part A SNF Stays (Type 1 SNF Stays or Type 2 SNF Stays):*** **Incomplete SNF Medicare Part A SNF Stays:** Residents with incomplete stays (*incomplete = [1]*) are identified based on the following criteria using the specified data elements: 1. Unplanned discharge, which would include discharge against medical advice, indicated by A0310G (Type of Discharge) = 2 (Unplanned discharge) [as indicated on an OBRA Discharge (RFA: A0310F = [10, 11]) at the end of the SNF stay that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)]. OR 2. Discharge to acute hospital, psychiatric hospital, long-term care hospital indicated by A2100 = [03, 04, 09], [as indicated on an MDS Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)]. OR 3. SNF PPS Part A stay less than 3 days ((A2400C minus A2400B) < 3 days) OR 4. The resident died during the SNF stay (i.e., Type 2 SNF Stays). Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]). **Complete Medicare Part A SNF Stays:** Medicare Part A SNF Stays not meeting the definition of incomplete stays are considered complete Medicare Part A SNF Stays (*incomplete* = [0]). ***Numerator:*** For complete Medicare Part A SNF Stays (*incomplete = [0]*) in the denominator, three criteria are required for inclusion in the numerator: (i) complete admission functional assessment data on the PPS 5-Day assessment, ***and*** (ii) a discharge goal for at least one self-care or mobility item on the PPS 5-Day assessment, ***and*** (iii) complete discharge functional assessment data on the Part A PPS Discharge Assessment. For incomplete Medicare Part A SNF Stays (*incomplete = [1]*) in the denominator, collection of discharge functional status might not be feasible. Therefore, two criteria are required for inclusion in the numerator: (i) complete admission functional assessment data on the PPS 5-Day assessment, ***and*** (ii) a discharge goal for at least one self-care or mobility item on the PPS 5-Day assessment.

(continued)

Table 8-2 (continued)
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF#2631) (CMS ID: S001.03)[a]

Measure Specifications[b]

Specifications for complete admission functional assessment data:

For admission functional assessment data to be complete, each condition listed below **must** be met.

1. GG0130A1. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
2. GG0130B1. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
3. GG0130C1. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
4. GG0170B1. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
5. GG0170C1. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
6. GG0170D1. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
7. GG0170E1. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
8. GG0170F1. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
9. GG0170I1. Walk 10 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***

For residents who are walking as indicated by a valid functional code [01, 02, 03, 04, 05, 06] for GG0170I1, include items:

10. GG0170J1. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] ***and***
11. GG0170K1. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]

For residents who are not walking as indicated by GG0170I1 = 07, 09, 10, or 88, GG0170J1 and GG0170K1 are skipped (^).

For residents who use a wheelchair as indicated by GG170Q1=1, include items:

12. GG0170R1. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] ***and***
13. GG0170RR1. Indicate the type of wheelchair or scooter used = [1, 2] ***and***
14. GG0170S1. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] ***and***
15. GG0170SS1. Indicate the type of wheelchair or scooter used = [1, 2]

For residents who do not use a wheelchair as indicated by GG0170Q1=0, GG0170R1, GG0170RR1, GG0170S1, and GG0170SS1 are skipped (^).

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. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
2. GG0130B2. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
3. GG0130C2. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
4. GG0130E2 Shower/bathe self = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
5. GG0130F2 Upper body dressing = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
6. GG0130G2 Lower body dressing = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
7. GG0130H2 Putting on/taking off footwear = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
8. GG0170A2 Roll left and right = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
9. GG0170B2. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
10. GG0170C2. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***

(continued)

Table 8-2 (continued)
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF#2631) (CMS ID: S001.03)[a]

Measure Specifications[b]
11. GG0170D2. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
12. GG0170E2. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
13. GG0170F2. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
14. GG0170G2 Car transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
15. GG 0170I2 walk 10 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
16. GG0170J2. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
17. GG0170K2. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
18. GG0170L2. Walking 10 feet on uneven surfaces = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
19. GG0170M2. 1 step (curb) = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
20. GG0170N2. 4 steps = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
21. GG0170O2. 12 steps = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
22. GG0170P2. Picking up object = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
23. GG0170R2. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***or***
24. GG0170S2. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88].
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 to residents with complete stays (discharge functional assessment data is not required for incomplete stays).
1. GG0130A3. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
2. GG0130B3. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
3. GG0130C3. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
4. GG0170B3. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
5. GG0170C3. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
6. GG0170D3. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
7. GG0170E3. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
8. GG0170F3. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
9. GG0170I3. Walk 10 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
For residents who are walking as indicated by a valid functional code [01, 02, 03, 04, 05, 06] for GG0170I3, include items:
10. GG0170J3. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; ***and***
11. GG0170K3. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88].
For residents who are not walking, as indicated by GG0170I3= 07, 09, 10, or 88, GG0170J3 and GG0170K3 are skipped (^).
For residents who use a wheelchair as indicated by GG170Q3=1, include items:
12. GG0170R3. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] ***and***
13. GG0170RR3. Indicate the type of wheelchair or scooter used = [1, 2] ***and***
14. GG0170S3. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]) ***and***
15. GG0170SS3. Indicate the type of wheelchair or scooter used = [1, 2].

(continued)

Table 8-2 (continued)
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF#2631) (CMS ID: S001.03)[a]

Measure Specifications[b]
For residents who do not use a wheelchair as indicated by GG0170Q3=0, GG0170R3, GG0170RR3, GG0170S3, and GG0170SS3 are skipped (^). ***Denominator*** The total number of Medicare Part A SNF stays (**Type 1 SNF Stays** and **Type 2 SNF Stays**) with a Medicare Part A SNF Stay End Date (A2400C) during the measure target period. ***Exclusions*** There are no denominator exclusions for this measure.
Covariates
None.

[a] This measure is an application of measure L009.03 and is finalized for reporting by SNFs under the SNF QRP (*Federal Register* 80(4 August 2015): 46389-46477). This measure is not NQF endorsed.

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Table 8-3
Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC SNF QRP (CMS ID: S007.02)[a]

Measure Description
This measure reports the percentage of Medicare Part A SNF Stays in which a drug regimen review was conducted at the time of admission and timely follow-up with a physician occurred each time potential clinically significant medication issues were identified throughout the stay.
Measure Specifications[b]
If a resident has multiple Medicare Part A SNF Stays during the target 12 months, then all stays are included in this measure. ***Numerator*** The total number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only) in the denominator meeting each of the following two criteria: 1. The facility conducted a drug regimen review on admission which resulted in one of the three following scenarios: a. No potential or actual clinically significant medication issues were found during the review (N2001 = [0]); OR b. Potential or actual clinically significant medication issues were found during the review (N2001 = [1]) and then a physician (or physician-designee) was contacted and prescribed/recommended actions were completed by midnight of the next calendar day (N2003 = [1]); OR c. The resident was not taking any medications (N2001 = [9]). 2. Appropriate follow-up occurred each time a potential or actual clinically significant medication issue was identified during the stay (N2005 = [1]); or no potential or actual clinically significant medications issues were identified since the admission or resident was not taking any medications (N2005 = [9]). ***Denominator*** The total number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only) during the reporting period. ***Exclusions*** Medicare Part A SNF Stays are excluded if: 1. The resident died during the SNF stay (i.e. **Type 2 SNF Stays**). a. Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).
Covariates
None.

[a] This measure was finalized for reporting by SNFs under the SNF QRP (*Federal Register* 81 (5 August 2016): 52034-52039).

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Table 8-4
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)

Measure Description
This measure reports the percentage of Medicare Part A SNF Stays with Stage 2-4 pressure ulcers, or unstageable pressure ulcers due to slough/eschar, non-removable dressing/device, or deep tissue injury, that are new or worsened since admission. The measure is calculated by reviewing a resident's MDS pressure ulcer discharge assessment data for reports of Stage 2-4 pressure ulcers, or unstageable pressure ulcers due to slough/eschar, non-removable dressing/device, or deep tissue injury, that were not present or were at a lesser stage at the time of admission.

Measure Specifications[a]

If a resident has multiple Medicare Part A SNF Stays during the target 12 months, then all stays are included in this measure.

Numerator
The numerator is the number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only) in the denominator for which the discharge assessment indicates one or more new or worsened Stage 2-4 pressure ulcers, or unstageable pressure ulcers due to slough/eschar, non-removable dressing/device, or deep tissue injury, compared to admission.

1. Stage 2 (M0300B1) - (M0300B2) > 0, OR
2. Stage 3 (M0300C1) - (M0300C2) > 0, OR
3. Stage 4 (M0300D1) - (M0300D2) > 0, OR
4. Unstageable – Non-removable dressing/device (M0300E1) – (M0300E2) > 0, OR
5. Unstageable – Slough and/or eschar (M0300F1) – (M0300F2) > 0, OR
6. Unstageable – Deep tissue injury (M0300G1) – (M0300G2) > 0

Denominator
The denominator is the number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only) in the selected time window for SNF residents ending during the selected time window, except those that meet the exclusion criteria.

Exclusions
Medicare Part A SNF Stays are excluded if:

1. Data on new or worsened Stage 2, 3, 4, and unstageable pressure ulcers, including deep tissue injuries, are missing [-] at discharge, i.e.:
   a. (M0300B1 = [-] or M0300B2 = [-]) and (M0300C1 = [-] or M0300C2 = [-]) and (M0300D1 = [-] or (M0300D2 = [-]) and (M0300E1 = [-] or M0300E2 = [-]) and (M0300F1 = [-] or M0300F2 = [-]) and (M0300G1 = [-] or M0300G2 = [-])
2. The resident died during the SNF stay (i.e., **Type 2 SNF Stays**).
   a. Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).

(continued)

Table 8-4 (continued)
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)

Covariates
1. Functional Mobility Admission Performance: Coding of dependent or substantial/maximal assistance for the functional mobility item Lying to Sitting on Side of Bed at admission: a. Covariate = [1] (yes) if GG0170C1 = [01, 02, 07, 09, 10, 88] ([01] = Dependent, [02] =Substantial/maximal assistance, [07] = Resident refused, [09] = Not applicable, [10] = Not attempted due to environmental limitations, [88] = Not attempted due to medical condition or safety concerns) b. Covariate = [0] (no) if GG0170C1 = [03, 04, 05, 06, -] ([03] =Partial/moderate assistance, [04] =Supervision or touching assistance, [05] =Setup or clean-up assistance, [06] = Independent, [-] =No response available)
2. Bowel Incontinence: Bowel Continence (H0400) at admission a. Covariate = [1] (yes) if H0400 = [1, 2, 3] ([1] = Occasionally incontinent, [2] = Frequently incontinent, [3] = Always incontinent) b. Covariate = [0] (no) if H0400 = [0, 9, -] ([0] = Always continent, [9] = Not rated, [-] = Not assessed/no information)
3. Peripheral Vascular Disease / Peripheral Arterial Disease or Diabetes Mellitus: a. Covariate = [1] (yes) if any of the following are true: i. Active Peripheral Vascular Disease (PVD) or Peripheral Arterial Disease (PAD) in the last 7 days (I0900 = [1] (checked)) ii. Active Diabetes Mellitus (DM) in the last 7 days (I2900 = [1] (checked)) b. Covariate = [0] (no) if I0900 = [0, -] AND I2900 = [0, -] ([0] = No, [-] = No response available)
4. Low body mass index (BMI), based on height (K0200A) and weight (K0200B): a. Covariate = [1] (yes) if BMI ≥ [12.0] AND ≤ [19.0] b. Covariate = [0] (no) if BMI < [12.0] OR BMI > [19.0] c. Covariate = [0] (no) if K0200A = [0, 00, -] OR K0200B = [-] ([-] = not assessed/no information) Where: BMI = (weight * 703 / height^2) = ([K0200B] * 703) / (K0200A^2) and the resulting value is rounded to one decimal place[b].

[a] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

[b] To round off the percent value to one decimal place, if the digit in the second decimal place is greater than 5, add 1 to the digit in the first decimal place, otherwise leave the digit in the first decimal place unchanged. Drop all the digits following the digit in the first decimal place.

Table 8-5
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)[a]

Measure Description
This measure estimates the percentage of Medicare Part A SNF Stays that meet or exceed an expected discharge self-care score.

Measure Specifications[b]

If a resident has multiple Medicare Part A SNF stays during the target 12 months, then all stays are included in this measure.

Self-Care items and Rating scale:
The Self-Care assessment items used for discharge Self-Care score calculations are:

- GG0130A3. Eating
- GG0130B3. Oral hygiene
- GG0130C3. Toileting hygiene
- GG0130E3. Shower/bathe self
- GG0130F3. Upper body dressing
- GG0130G3. Lower body dressing
- GG0130H3. Putting on/taking off footwear

Valid codes and code definitions for the coding of the discharge Self-Care items are:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Resident refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern
- - Not assessed/no information

To obtain the discharge self-care score, use the following procedure:

- If code is between 01 and 06, then use code as the score.
- If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score.
- If the self-care item is skipped (^), dashed (-) or missing, recode to 01 and use this code as the score.

Sum the scores of the discharge self-care items to create a discharge self-care score for each Medicare Part A SNF stay record. Scores can range from 7 to 42, with a higher score indicating greater independence.

(continued)

Table 8-5 (continued)
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)[a]

Measure Specifications[b]

Numerator
The total number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only) in the denominator, except those that meet the exclusion criteria, with a discharge self-care score that is equal to or higher than the calculated expected discharge self-care score.

Denominator
The total number of Medicare Part A SNF Stays (**Type 1 SNF Stays** only), except those that meet the exclusion criteria.

Exclusions
Medicare Part A SNF Stays are excluded if:

1. The Medicare Part A SNF Stay is an incomplete stay: Residents with incomplete stays (*incomplete = [1]*) are identified based on the following criteria using the specified data elements:
   a. Unplanned discharge, which would include discharge against medical advice, indicated by A0310G (Type of Discharge) = 2 (Unplanned discharge) [as indicated on an OBRA Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   b. Discharge to acute hospital, psychiatric hospital, long-term care hospital indicated by A2100 = [03, 04, 09]. [as indicated on an MDS Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   c. SNF PPS Part A stay less than 3 days ((A2400C minus A2400B) < 3 days)
   OR
   d. The resident died during the SNF stay (i.e., **Type 2 SNF Stays**). Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).
2. The resident has the following medical conditions at the time of admission (i.e., on the 5-Day PPS assessment):
   a. Coma, persistent vegetative state, complete tetraplegia, locked-in syndrome, or severe anoxic brain damage, cerebral edema or compression of brain, as identified by: B0100 (Comatose) = 1 or ICD-10 codes (see **Appendix A**, ***Table A-3***).
3. The resident is younger than age 18:
   a. A1600 (Entry Date) – A0900 (Birth Date) is less than 18 years.
   b. Age is calculated in years based on the truncated difference between admission date (A1600) and birth date (A0900); i.e., the difference is not rounded to the nearest whole number
4. The resident is discharged to hospice or received hospice while a resident:
   a. A2100 (Discharge status) = [07] or O0100K2 (Hospice while a Resident) = [1]
5. The resident did not receive physical or occupational therapy services at the time of admission (i.e., on the 5- Day PPS assessment):
   a. (Sum of O0400B1 + O0400B2 + O0400B3 = [0]) and (sum of O0400C1 + O0400C2 + O0400C3= [0])

(continued)

Table 8-5 (continued)
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents (NQF #2635) (CMS ID: S024.04)[a]

Covariates
Data for each covariate are derived from the admission assessment included in the target Medicare Part A SNF stay.   **1. Age group**   **2. Admission self-care score – continuous score**   **3. Admission self-care score – squared form**   **4. Primary medical condition category**   **5. Interaction between primary medical condition category and admission self-care score**   **6. Prior surgery**   **7. Prior functioning: self-care**   **8. Prior functioning: indoor mobility (ambulation)**   **9. Prior mobility device use**   **10. Stage 2 pressure ulcer**   **11. Stage 3, 4, or unstageable pressure ulcer/injury**   **12. Cognitive abilities**   **13. Communication Impairment**   **14. Urinary Continence**   **15. Bowel Continence**   **16. Tube feeding or total parenteral nutrition**   **17. Comorbidities**   See covariate details in **Appendix A**, ***Table A-4*** and the associated Risk-Adjustment Appendix File**.**

[a] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2635) and finalized for reporting by SNFs under the SNF QRP (*Federal Register* 82 (4 August 2017): 36530-36636).

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Table 8-6
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)[a]

Measure Description
This measure estimates the percentage of Medicare Part A SNF Stays that meet or exceed an expected discharge mobility score.

Measure Specifications[b]

If a resident has multiple Medicare Part A SNF stays during the target 12 months, then all stays are included in this measure.

Mobility items and Rating scale:
The Mobility assessment items used for discharge Mobility score calculations are:

- GG0170A3. Roll left and right
- GG0170B3. Sit to lying
- GG0170C3. Lying to sitting on side of bed
- GG0170D3. Sit to stand
- GG0170E3. Chair/bed-to-chair transfer
- GG0170F3. Toilet transfer
- GG0170G3. Car transfer
- GG0170I3. Walk 10 feet
- GG0170J3. Walk 50 feet with two turns
- GG0170K3. Walk 150 feet
- GG0170L3. Walking 10 feet on uneven surfaces
- GG0170M3. 1 step (curb)
- GG0170N3. 4 steps
- GG0170O3. 12 steps
- GG0170P3. Picking up object

Valid codes and code definitions for the coding of the discharge Mobility items are:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Resident refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern
- - – Not assessed/no information

(continued)

Table 8-6 (continued)
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)[a]

Measure Specifications[b]
To obtain the discharge mobility score, use the following procedure • If code is between 01 and 06, then use code as the score. • If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score. • If the mobility item is skipped (^), dashed (-), or missing, recode to 01 and use this code as the score. Sum the scores of the discharge mobility items to create a discharge mobility score for each Medicare Part A SNF stay. Scores can range from 15 – 90, with a higher score indicating greater independence. ***Numerator*** The total number of Medicare Part A SNF stays (**Type 1 SNF Stays** only) in the denominator, except those that meet the exclusion criteria, with a discharge mobility score that is equal to or higher than the calculated expected discharge mobility score. ***Denominator*** The total number of Medicare Part A SNF stays (**Type 1 SNF Stays** only), except those that meet the exclusion criteria. ***Exclusions*** Medicare Part A SNF Stays are excluded if: 1. The Medicare Part A SNF Stay is an incomplete stay: Residents with incomplete stays (*incomplete = [1]*) are identified based on the following criteria using the specified data elements: a. Unplanned discharge, which would include discharge against medical advice, indicated by A0310G (Type of Discharge) = 2 (Unplanned discharge) [as indicated on an OBRA Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)]. OR b. Discharge to acute hospital, psychiatric hospital, long-term care hospital indicated by A2100 = [03, 04, 09]. [as indicated on an MDS Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)]. OR c. SNF PPS Part A stay less than 3 days ((A2400C minus A2400B) < 3 days) OR d. The resident died during the SNF stay (i.e., **Type 2 SNF Stays**). Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]). 2. The resident has the following medical conditions at the time of admission (i.e., on the 5-Day PPS assessment): a. Coma, persistent vegetative state, complete tetraplegia, locked-in syndrome, or severe anoxic brain damage, cerebral edema or compression of brain, as identified by: B0100 (Comatose) = 1 or ICD-10 codes (see **Appendix A**, ***Table A-3***). 3. The resident is younger than age 18: a. A1600 (Entry Date) – A0900 (Birth Date) is less than 18 years. b. Age is calculated in years based on the truncated difference between admission date (A1600) and birth date (A0900); i.e., the difference is not rounded to the nearest whole number 4. The resident is discharged to hospice or received hospice while a resident: a. A2100 (Discharge status) = [07] or O0100K2 (Hospice while a Resident) = [1]. 5. The resident did not receive physical or occupational therapy services at the time of admission (i.e., on the 5-Day PPS assessment): a. (Sum of O0400B1 + O0400B2 + O0400B3 = [0]) and (sum of O0400C1 + O0400C2 + O0400C3= [0])

(continued)

Table 8-6 (continued)
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents (NQF #2636) (CMS ID: S025.04)[a]

Covariates
Data for each covariate are derived from the admission assessment included in the target Medicare Part A SNF stays.
1. Age group **2. Admission mobility score – continuous score** **3. Admission mobility score – squared form** **4. Primary medical condition category** **5. Interaction between primary medical condition category and admission mobility** **6. Prior surgery** **7. Prior functioning: indoor mobility (ambulation)** **8. Prior functioning: stairs** **9. Prior functioning: functional cognition** **10. Prior mobility device use** **11. Stage 2 pressure ulcer** **12. Stage 3, 4, or unstageable pressure ulcer/injury** **13. Cognitive abilities** **14. Communication impairment** **15. Urinary Continence** **16. Bowel Continence** **17. Tube feeding or total parenteral nutrition** **18. History of falls** **19. Comorbidities**
See covariate details in **Appendix A,** ***Table A-4*** and the associated Risk-Adjustment Appendix File**.**

[a] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2636) and finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Table 8-7
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)[a]

Measure Description
This measure estimates the risk-adjusted mean change in self-care score between admission and discharge for Medicare Part A SNF Stays.
Measure Specifications[b]
If a resident has multiple Medicare Part A SNF stays during the target 12 months, then all stays are included in this measure. ***Self-Care items and Rating scale:*** The Self-Care assessment items used for admission Self-Care score calculations are: • GG0130A1. Eating • GG0130B1. Oral hygiene • GG0130C1. Toileting hygiene • GG0130E1. Shower/bathe self • GG0130F1. Upper body dressing • GG0130G1. Lower body dressing • GG0130H1. Putting on/taking off footwear Valid codes and code definitions for the coding of the admission Self-Care items are: • 06 – Independent • 05 – Setup or clean-up assistance • 04 – Supervision or touching assistance • 03 – Partial/moderate assistance • 02 – Substantial/maximal assistance • 01 – Dependent • 07 – Resident refused • 09 – Not applicable • 10 – Not attempted due to environmental limitations • 88 – Not attempted due to medical condition or safety concerns • - – Not assessed/no information To obtain the admission self-care score, use the following procedure: • If code is between 01 and 06, then use the code as the score. • If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score. • If the self-care item is dashed (-) or missing, recode to 01 and use this code as the score. Sum the scores of the admission self-care items to create an admission self-care score for each stay-level record. Scores can range from 7 to 42, with a higher score indicating greater independence.

(continued)

Table 8-7 (continued)
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)[a]

Measure Specifications[b]
The Self-Care assessment items used for discharge Self-Care score calculations are: • GG0130A3. Eating • GG0130B3. Oral hygiene • GG0130C3. Toileting hygiene • GG0130E3. Shower/bathe self • GG0130F3. Upper body dressing • GG0130G3. Lower body dressing • GG0130H3. Putting on/taking off footwear Valid codes and code definitions for the coding of the discharge Self-Care items are: • 06 – Independent • 05 – Setup or clean-up assistance • 04 – Supervision or touching assistance • 03 – Partial/moderate assistance • 02 – Substantial/maximal assistance • 01 – Dependent • 07 – Resident refused • 09 – Not applicable • 10 – Not attempted due to environmental limitations • 88 – Not attempted due to medical condition or safety concerns • ^ – Skip pattern • - – Not assessed/no information To obtain the discharge self-care score, use the following procedure: • If code is between 01 and 06, then use code as the score. • If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score. • If the self-care item is skipped (^), dashed (-), or missing, recode to 01 and use this code as the score. Sum the scores of the discharge self-care items to create a discharge self-care score for each stay-level record. Scores can range from 7 to 42, with a higher score indicating greater independence. ***Numerator*** The measure does not have a simple form for the numerator and denominator. This measure estimates the risk-adjusted change in self-care score between admission and discharge among Medicare Part A SNF stays, except those that meet the exclusion criteria. The change in self-care score is calculated as the difference between the discharge self-care score and the admission self-care score. ***Denominator*** The total number of Medicare Part A SNF stays (**Type 1 SNF Stays** only), except those that meet the exclusion criteria. ***Exclusions*** Medicare Part A SNF Stays are excluded if:

(continued)

Table 8-7 (continued)
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)[a]

Measure Specifications[b]

1. The Medicare Part A SNF Stay was an incomplete stay: Residents with incomplete stays (*incomplete = [1]*) are identified based on the following criteria using the specified data elements:
   a. Unplanned discharge, which would include discharge against medical advice, indicated by A0310G (Type of Discharge) = 2 (Unplanned discharge) [as indicated on an OBRA Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   b. Discharge to acute hospital, psychiatric hospital, long-term care hospital indicated by A2100 = [03, 04, 09]. [as indicated on an MDS Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   c. SNF PPS Part A stay less than 3 days ((A2400C minus A2400B) < 3 days)
   OR
   d. The resident died during the SNF stay (i.e., **Type 2 SNF Stays**). Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).
2. The resident is independent with all self-care activities at the time of admission (i.e., on the 5-Day PPS assessment):
   a. Items used to identify these resident records are as follows: Eating (Item GG0130A1), Oral hygiene (Item GG0130B1), Toileting hygiene (Item GG0130C1), Shower/Bathe self (Item GG0130E1), Upper body dressing (Item GG0130F1), Lower body dressing (Item GG0130G1), Putting on/taking off footwear (Item GG0130H1).
   b. All seven self-care items must = [6] on the 5-day PPS assessment for this exclusion to apply
3. The resident has the following medical conditions at the time of admission (i.e., on the 5-Day PPS assessment):
   a. Coma, persistent vegetative state, complete tetraplegia, locked-in syndrome, or severe anoxic brain damage, cerebral edema or compression of brain, as identified by: B0100 (Comatose) = 1 or ICD-10 codes (see **Appendix A**, ***Table A-3***).
4. The resident is younger than age 18:
   a. A1600 (Entry Date) – A0900 (Birth Date) is less than 18 years.
   b. Age is calculated in years based on the truncated difference between admission date (A1600) and birth date (A0900); i.e., the difference is not rounded to the nearest whole number
5. The resident is discharged to hospice or received hospice while a resident:
   a. A2100 (Discharge status) = [07] or O0100K2 (Hospice while a Resident) = [1].
6. The resident did not receive physical or occupational therapy services (i.e., on the 5-Day PPS assessment):
   a. (Sum of O0400B1 + O0400B2 + O0400B3 = [0]) and (sum of O0400C1 + O0400C2 + O0400C3= [0])

(continued)

Table 8-7 (continued)
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents (NQF #2633) (CMS ID: S022.04)[a]

Covariates
Data for each covariate are derived from the admission assessment included in the target Medicare Part A SNF stays.   **1. Age group**   **2. Admission self-care score – continuous score**   **3. Admission self-care score – squared form**   **4. Primary medical condition category**   **5. Interaction between primary medical condition category and admission self-care score**   **6. Prior surgery**   **7. Prior functioning: self-care**   **8. Prior functioning: indoor mobility (ambulation)**   **9. Prior mobility device use**   **10. Stage 2 pressure ulcer**   **11. Stage 3, 4, or unstageable pressure ulcer/injury**   **12. Cognitive abilities**   **13. Communication impairment**   **14. Urinary Continence**   **15. Bowel Continence**   **16. Tube feeding or total parenteral nutrition**   **17. Comorbidities**   See covariate details in **Appendix A**, ***Table A-4*** and the associated Risk-Adjustment Appendix File**.**

[a] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2633) and an application of this quality measure is finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Table 8-8
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)[a]

Measure Description
This measure estimates the risk-adjusted mean change in mobility score between admission and discharge for Medicare Part A SNF Stays.
Measure Specifications[b]
If a resident has multiple Medicare Part A SNF stays during the target 12 months, then all stays are included in this measure. ***Mobility items and Rating scale:*** The Mobility assessment items used for admission Mobility score calculations are: • GG0170A1. Roll left and right • GG0170B1. Sit to lying • GG0170C1. Lying to sitting on side of bed • GG0170D1. Sit to stand • GG0170E1. Chair/bed-to-chair transfer • GG0170F1. Toilet transfer • GG0170G1. Car transfer • GG0170I1. Walk 10 feet • GG0170J1. Walk 50 feet with two turns • GG0170K1. Walk 150 feet • GG0170L1. Walking 10 feet on uneven surfaces • GG0170M1. 1 step (curb) • GG0170N1. 4 steps • GG0170O1. 12 steps. • GG0170P1. Picking up object Valid codes and code definitions for the coding of the admission Mobility items are: • 06 – Independent • 05 – Setup or clean-up assistance • 04 – Supervision or touching assistance • 03 – Partial/moderate assistance • 02 – Substantial/maximal assistance • 01 – Dependent • 07 – Resident refused • 09 – Not applicable • 10 – Not attempted due to environmental limitations • 88 – Not attempted due to medical condition or safety concerns • ^ – Skip pattern: only valid for items GG0170J1 through GG0170L1; GG0170N1, GG0170O1 • - – Not assessed/no information

(continued)

Table 8-8 (continued)
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)[a]

Measure Specifications[b]
To obtain the admission mobility score, use the following procedure • If code is between 01 and 06, then use code as the score • If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score. • If the mobility item is skipped (^), dashed (-), or missing, recode to 01 and use this code as the score. Sum the scores of the admission mobility items to create an admission mobility score for each Medicare Part A SNF stay. Scores can range from 15 – 90, with a higher score indicating greater independence. The Mobility assessment items used for discharge Mobility score calculations are: • GG0170A3. Roll left and right • GG0170B3. Sit to lying • GG0170C3. Lying to sitting on side of bed • GG0170D3. Sit to stand • GG0170E3. Chair/bed-to-chair transfer • GG0170F3. Toilet transfer • GG0170G3. Car transfer • GG0170I3. Walk 10 feet • GG0170J3. Walk 50 feet with two turns • GG0170K3. Walk 150 feet • GG0170L3. Walking 10 feet on uneven surfaces • GG0170M3. 1 step (curb) • GG0170N3 4 steps • GG0170O3 12 steps • GG0170P3. Picking up object Valid codes and code definitions for the coding of the discharge Mobility items are: • 06 – Independent • 05 – Setup or clean-up assistance • 04 – Supervision or touching assistance • 03 – Partial/moderate assistance • 02 – Substantial/maximal assistance • 01 – Dependent • 07 – Resident refused • 09 – Not applicable • 10 – Not attempted due to environmental limitations • 88 – Not attempted due to medical condition or safety concerns • ^ – Skip pattern • – – Not assessed/no information To obtain the discharge mobility score, use the following procedure: • If code is between 01 and 06, then use code as the score. • If code is 07, 09, 10, or 88, then recode to 01 and use this code as the score. • If the mobility item is skipped (^), dashed (-), or missing, recode to 01 and use this code as the score.

(continued)

Table 8-8 (continued)
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)[a]

Measure Specifications[b]

Sum the scores of the discharge mobility items to create a discharge mobility score for each Medicare Part A SNF stay. Scores can range from 15 – 90, with a higher score indicating greater independence.

Numerator
The measure does not have a simple form for the numerator and denominator. This measure estimates the risk-adjusted change in mobility score between admission and discharge among Medicare Part A SNF stays, except those that meet the exclusion criteria. The change in mobility score is calculated as the difference between the discharge mobility score and the admission mobility score.

Denominator
The total number of Medicare Part A SNF stays (**Type 1 SNF Stays** only), except those that meet the exclusion criteria.

Exclusions
Medicare Part A SNF Stays are excluded if:

1. The Medicare Part A SNF Stay is an incomplete stay: Residents with incomplete stays (*incomplete = [1]*) are identified based on the following criteria using the specified data elements:
   a. Unplanned discharge, which would include discharge against medical advice, indicated by A0310G (Type of Discharge) = 2 (Unplanned discharge) [as indicated on an OBRA Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   b. Discharge to acute hospital, psychiatric hospital, long-term care hospital indicated by A2100 = [03, 04, 09]. [as indicated on an MDS Discharge (RFA: A0310F = [10, 11]) that has a discharge date (A2000) that is on the same day or the day after the End Date of Most Recent Medicare Stay (A2400C)].
   OR
   c. SNF PPS Part A stay less than 3 days ((A2400C minus A2400B) < 3 days)
   OR
   d. The resident died during the SNF stay (i.e., **Type 2 SNF Stays**). Type 2 SNF Stays are SNF stays with a PPS 5-Day Assessment (A0310B = [01]) and a matched Death in Facility Tracking Record (A0310F = [12]).
2. The resident is independent on all mobility activities at the time of the admission (i.e., on the 5-Day PPS assessment): Items used to identify these resident records are as follows: Roll left and right (Item GG0170A1), Sit to lying (Item GG0170B1), Lying to sitting on side of bed (Item GG0170C1), Sit to stand (Item GG0170D1), Chair/bed-to-chair transfer (Item GG0170E1), Toilet transfer (Item GG0170F1), Car transfer (Item GG0170G1), Walk 10 feet (Item GG0170I1), Walk 50 feet with two turns (Item GG0170J1), Walk 150 feet (Item GG0170K1), Walking 10 feet on uneven surfaces (Item GG0170L1), 1 step (curb) (Item GG0170M1), 4 steps (Item GG0170N1), 12 steps (Item GG0170O1), Picking up object (GG0170P1).
   a. All fifteen mobility items must = [6] on the 5-day PPS assessment for this exclusion to apply.
3. The resident has the following medical conditions at the time of the admission (i.e., on the 5-Day PPS assessment):
   a. Coma, persistent vegetative state, complete tetraplegia, locked-in syndrome, or severe anoxic brain damage, cerebral edema or compression of brain, as identified by: B0100 (Comatose) = 1 or ICD-10 codes (see **Appendix A**, ***Table A-3***).

(continued)

Table 8-8 (continued)
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents (NQF #2634) (CMS ID: S023.04)[a]

Measure Specifications[b]
4. The resident is younger than age 18: a. A1600 (Entry Date) – A0900 (Birth Date) is less than 18 years. b. Age is calculated in years based on the truncated difference between admission date (A1600) and birth date (A0900); i.e., the difference is not rounded to the nearest whole number 5. The resident is discharged to hospice or received hospice while a resident: a. A2100 (Discharge status) = [07] or O0100K2 (Hospice while a Resident) = [1]. 6. The resident did not receive physical or occupational therapy services at the time of the admission (i.e., on the 5-Day PPS assessment): a. (Sum of O0400B1 + O0400B2 + O0400B3 = [0]) and (sum of O0400C1 + O0400C2 + O0400C3 = [0])
Covariates
Data for each covariate are derived from the admission assessment included in the target Medicare Part A SNF stays. **1. Age group** **2. Admission mobility score – continuous score** **3. Admission mobility score – squared form** **4. Primary medical condition category** **5. Interaction between primary medical condition category and admission mobility score** **6. Prior surgery** **7. Prior functioning: indoor mobility (ambulation)** **8. Prior functioning: stairs** **9. Prior functioning: functional cognition** **10. Prior mobility device use** **11. Stage 2 pressure ulcer** **12. Stage 3, 4, or unstageable pressure ulcer/injury** **13. Cognitive abilities** **14. Communication impairment** **15. Urinary Continence** **16. Bowel Continence** **17. Tube feeding or total parenteral nutrition** **18. History of falls** **19. Comorbidities** See covariate details in **Appendix A**, ***Table A-4*** and the associated Risk-Adjustment Appendix File**.**

[a] This measure is NQF-endorsed for use in the IRF setting (https://www.qualityforum.org/QPS/2634) and an application of this quality measure is finalized for reporting by SNFs under the SNF QRP (Federal Register 82 (4 August 2017): 36530-36636).

[b] The national average observed score is calculated using the Medicare Part A SNF stay as the unit of analysis.

Appendix A: Model Parameters

Appendix A provides the following information:

- Tables listing the covariates and associated MDS items used to calculate each covariate for assessment-based quality measures requiring risk-adjustment (Section A.1).
- Overview of the Risk-Adjustment Appendix File for the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual (Risk-Adjustment Appendix File) (Section A.2).
- Procedure on how to use the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual and the associated Risk-Adjustment Appendix File information to apply intercept and coefficient values for measure calculations (Section A.3).

The risk-adjusted quality measures addressed in this Appendix are listed in Table A-1 below. Note that a "✓" indicates that the national average observed score or covariate values are included in the risk-adjustment calculation for that quality measure. An "n/a" indicates that it is not applicable in the risk-adjustment calculation for that quality measure.

Table A-1
MDS Quality Measures Requiring National Average Observed Scores and Covariate Values for Risk-Adjustment

Quality Measure	NQF #	CMS ID	Measure Reference Name	National Average Observed Scores[a]	Covariate Values[a]
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury	N/A	S038.02	Pressure Ulcer/Injury	✓	✓
SNF Functional Outcome Measure: Change in Self-Care Score for Skilled Nursing Facility Residents	2633	S022.04	Change in Self-Care Score	✓	✓
SNF Functional Outcome Measure: Change in Mobility Score for Skilled Nursing Facility Residents	2634	S023.04	Change in Mobility Score	✓	✓
SNF Functional Outcome Measure: Discharge Self-Care Score for Skilled Nursing Facility Residents	2635	S024.04	Discharge Self-Care Score	n/a	✓
SNF Functional Outcome Measure: Discharge Mobility Score for Skilled Nursing Facility Residents	2636	S025.04	Discharge Mobility Score	n/a	✓

[a] National Average Observed Scores and Intercept/Coefficient values provided in Risk-Adjustment Appendix File.

Section A.1: Covariate Tables

This section contains tables listing the covariates and associated MDS items used to calculate each covariate for the assessment-based quality measures requiring risk-adjustment.

Table A-2
Risk-Adjustment Covariates for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: S038.02)

Covariate[a]	MDS Item(s) and Calculations
Model Intercept	—
Impaired Mobility	= 1 if GG0170C1 = [01, 02, 07, 09, 10, 88] = 0 if GG0170C1 = [03, 04, 05, 06, -]
Bowel Incontinence	= 1 if H0400 = [1, 2, 3] = 0 if H0400 = [0, 9, -]
Diabetes or PVD/PAD	= 1 if any of the following are true: • I0900 = [1] • I2900 = [1] = 0 if I0900 = [0, -] AND I2900 = [0, -]
Low BMI	= 1 if BMI ≥ [12.0] AND ≤ [19.0] = 0 if BMI < [12.0] OR BMI > [19.0] = 0 if K0200A = [0, 00, -] OR K0200B = [-] Where: BMI = (weight * 703 / height²) = ([K0200B] * 703) / (K0200A²) and the resulting value is rounded to one decimal place.

[a] Covariates are based on MDS items from the PPS 5-Day assessment.

Table A-3
Primary Medical Condition Category (I0020B) and Active Diagnosis in the Last 7 days (I8000A through I8000J) – ICD-10-CM Codes

Primary Medical Condition Category (Item I0020B and I8000A through I8000J)	ICD-10-CM Codes			
Severe brain damage	G93.9			
Complete tetraplegia	G82.51, G82.53, S14.111A, S14.111D, S14.111S, S14.112A, S14.112D, S14.112S,	S14.113A, S14.113D, S14.113S, S14.114A, S14.114D, S14.114S, S14.115A, S14.115D,	S14.115S, S14.116A, S14.116D, S14.116S, S14.117A, S14.117D, S14.117S,	S14.118A, S14.118D, S14.118S, S14.119A, S14.119D, S14.119S
Locked-in state	G83.5			
Severe anoxic brain damage, edema or compression	G93.1, G93.5, G93.6			

Note that a "✓" under each measure in Table A-4 indicates that the covariate is included in the risk-adjustment calculation for that quality measure. An "n/a" indicates that the covariate is not included in the risk-adjustment calculation for that quality measure. The intercept and coefficient values are available in each of the respective quality measure tabs in the Risk-Adjustment Appendix File.

Table A-4
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Model Intercept	—	—	✓	✓	✓	✓
Age Group	<=54 years	Truncate(Item A1600 – Item A0900) = age; If age <=54 years = 1; else = 0	✓	✓	✓	✓
Age Group	55-64 years	Truncate(Item A1600 – Item A0900) = age; If age 55-64 years = 1; else = 0	✓	✓	✓	✓
Age Group (reference category)	65-74 years (reference)	Truncate(Item A1600 – Item A0900) = age; If age 65-74 years = 1; else = 0	n/a	n/a	n/a	n/a
Age Group	75-84 years	Truncate(Item A1600 – Item A0900) = age; If age 75-84 years = 1; else = 0	✓	✓	✓	✓
Age Group	85-90 years	Truncate(Item A1600 – Item A0900) = age; If age 85-90 years = 1; else = 0	✓	✓	✓	✓
Age Group	>90 years	Truncate(Item A1600 – Item A0900) = age; If age >90 years = 1; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Admission Self-Care - continuous form		Note: use recoded item values (valid codes = 01, 02, 03, 04, 05, 06); Self-Care Scores can range from 7 to 42.[b] Admission Self-Care Score = (GG0130A1 + GG0130B1 + GG0130C1 + GG0130E1 + GG0130F1 + GG0130G1 + GG0130H1)	✓	n/a	✓	n/a
Admission Self-Care - squared form		Note: use recoded values (valid codes = 01, 02, 03, 04, 05, 06); Self-Care Scores can range from 7 to 42.[b] Admission Self-Care Score Squared = (GG0130A1 + GG0130B1 + GG0130C1 + GG0130E1 + GG0130F1 + GG0130G1 + GG0130H1) * (GG0130A1 + GG0130B1 + GG0130C1 + GG0130E1 + GG0130F1 + GG0130G1 + GG0130H1)	✓	n/a	✓	n/a
Admission Mobility - continuous score		Note: use recoded values (valid codes = 01, 02, 03, 04, 05, 06); Mobility Scores can range from 15 to 90.[b] Admission Mobility Score = (GG0170A1 + GG0170B1 + GG0170C1 + GG0170D1 + GG0170E1 + GG0170F1 + GG0170G1 + GG0170I1 + GG0170J1 + GG0170K1 + GG0170L1 + GG0170M1 + GG0170N1 + GG0170O1 + GG0170P1)	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Admission Mobility - squared form		Note: use recoded values (valid codes = 01, 02, 03, 04, 05, 06); Mobility Scores can range from 15 to 90.[b] Admission Mobility Squared = (GG0170A1 + GG0170B1 + GG0170C1 + GG0170D1 + GG0170E1 + GG0170F1 + GG0170G1 + GG0170I1 + GG0170J1 + GG0170K1 + GG0170L1 + GG0170M1 + GG0170N1 + GG0170O1 + GG0170P1) * (GG0170A1 + GG0170B1 + GG0170C1 + GG0170D1 + GG0170E1 + GG0170F1 + GG0170G1 + GG0170I1 + GG0170J1 + GG0170K1 + GG0170L1 + GG0170M1 + GG0170N1 + GG0170O1 + GG0170P1)	n/a	✓	n/a	✓
Primary Medical Condition Category (reference category)	Hip and Knee Replacements (reference category)[c]	= 1 if Item I0020 = [09]; else = 0[c]	n/a	n/a	n/a	n/a
Primary Medical Condition Category	Stroke	= 1 if Item I0020 = [01]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Non-Traumatic Brain Dysfunction and Traumatic Brain Dysfunction	= 1 if Item I0020 = [02 or 03]; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Primary Medical Condition Category	Non-Traumatic Spinal Cord Dysfunction	= 1 if Item I0020 = [04]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Traumatic Spinal Cord Dysfunction	= 1 if Item I0020 = [05]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Progressive Neurological Conditions	= 1 if Item I0020 = [06]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Other Neurological Conditions	= 1 if Item I0020 = [07]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Fractures and Other Multiple Trauma	= 1 if Item I0020 = [10]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Amputation	= 1 if Item I0020 = [08]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Other Orthopedic Conditions	= 1 if Item I0020 = [11]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Debility, Cardiorespiratory Conditions	= 1 if Item I0020 = [12]; else = 0	✓	✓	✓	✓
Primary Medical Condition Category	Medically Complex Conditions	= 1 if Item I0020 = [13]; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission self-care score and primary medical condition category	Hip and Knee Replacements (reference category)	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Hip and Knee Replacements (see above)	n/a	n/a	n/a	n/a
Interaction of admission self-care score and primary medical condition category	Stroke	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Stroke (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Non-Traumatic Brain Dysfunction and Traumatic Brain Dysfunction	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Non-Traumatic and Traumatic Brain Dysfunction (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Non-Traumatic Spinal Cord Dysfunction	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Non-Traumatic Spinal Cord Dysfunction (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Traumatic Spinal Cord Dysfunction	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Traumatic Spinal Cord Dysfunction (see above)	✓	n/a	✓	n/a

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission self-care score and primary medical condition category	Progressive Neurological Conditions	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Progressive Neurological Conditions (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Other Neurological Conditions	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Other Neurological Conditions (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Fractures and Other Multiple Trauma	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Fractures and Other Multiple Trauma (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Amputation	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Amputation (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Other Orthopedic Conditions	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Other Orthopedic Conditions (see above)	✓	n/a	✓	n/a

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission self-care score and primary medical condition category	Debility, Cardiorespiratory Conditions	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Debility, Cardiorespiratory Conditions (see above)	✓	n/a	✓	n/a
Interaction of admission self-care score and primary medical condition category	Medically Complex Conditions	Admission self-care: continuous form (see above) multiplied by Primary medical condition category: Medically Complex Conditions (see above)	✓	n/a	✓	n/a
Interaction of admission mobility score and primary medical condition category	Hip and Knee Replacements (reference category)	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Hip and Knee Replacements (see above)	n/a	n/a	n/a	n/a
Interaction of admission mobility score and primary medical condition category	Stroke	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Stroke (see above)	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission mobility score and primary medical condition category	Non-Traumatic Brain Dysfunction and Traumatic Brain Dysfunction	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Non-Traumatic and Traumatic Brain Dysfunction (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Non-Traumatic Spinal Cord Dysfunction	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Non-Traumatic Spinal Cord Dysfunction (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Traumatic Spinal Cord Dysfunction	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Traumatic Spinal Cord Dysfunction (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Progressive Neurological Conditions	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Progressive Neurological Conditions (see above)	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission mobility score and primary medical condition category	Other Neurological Conditions	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Other Neurological Conditions (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Fractures and Other Multiple Trauma	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Fractures and Other Multiple Trauma (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Amputation	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Amputation (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Other Orthopedic Conditions	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Other Orthopedic Conditions (see above)	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Interaction of admission mobility score and primary medical condition category	Debility, Cardiorespiratory Conditions	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Debility, Cardiorespiratory Conditions (see above)	n/a	✓	n/a	✓
Interaction of admission mobility score and primary medical condition category	Medically Complex Conditions	Admission mobility: continuous form (see above) multiplied by Primary medical condition category: Medically Complex Conditions (see above)	n/a	✓	n/a	✓
Prior surgery	Yes	=1 if J2000 = 1; else = 0	✓	✓	✓	✓
Prior functioning: self-care	Dependent	=1 if GG0100A = 1; else = 0	✓	n/a	✓	n/a
Prior functioning: self-care	Some help	=1 if GG0100A = 2; else = 0	✓	n/a	✓	n/a
Prior functioning: indoor mobility (ambulation)	Dependent, Some help	=1 if GG0100B =1 or GG0100B = 2; else = 0	✓	n/a	✓	n/a
Prior functioning: indoor mobility (ambulation)	Dependent	=1 if GG0100B =1; else = 0	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Prior functioning: indoor mobility (ambulation)	Some help	=1 if GG0100B = 2; else = 0	n/a	✓	n/a	✓
Prior functioning: stairs	Dependent	=1 if GG0100C = 1; else = 0	n/a	✓	n/a	✓
Prior functioning: stairs	Some help	=1 if GG0100C = 2; else = 0	n/a	✓	n/a	✓
Prior functioning: functional cognition	Dependent	=1 if GG0100D = 1; else = 0	n/a	✓	n/a	✓
Prior Mobility Device Use	Walker	=1 if GG0110D = 1; else = 0	✓	✓	✓	✓
Prior Mobility Device Use	Manual Wheelchair or Motorized Wheelchair and/or Scooter	=1 if GG0110A = 1 or GG0110B = 1; else = 0	✓	✓	✓	✓
Prior Mobility Device Use	Mechanical Lift	=1 if GG0110C =1; else = 0	✓	✓	✓	✓
Prior Mobility Device Use	Orthotics/ Prosthetics	=1 if GG0110E = 1; else = 0	✓	✓	✓	✓
Stage 2 Pressure Ulcer - Admission	Present	=1 if Admission M0300B1 ≥ 1; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Stage 3, 4 or Unstageable Pressure Ulcer/Injury - Admission	Present	=1 if Admission M0300C1 ≥ 1 or Admission M0300D1 ≥ 1 or Admission M0300E1 ≥ 1 or Admission M0300F1 ≥ 1 or Admission M0300G1 ≥ 1; else = 0	✓	✓	✓	✓
Cognitive Function: Brief Interview for Mental Status score - Admission	Moderately Impaired	=1 if Admission C0500 = 8, 9, 10, 11, or 12 or ([C0900A = 1 and C0900B = 1] or [C0900B = 1 and C0900C = 1] or [C0900A = 1 and C0900C = 1] or [C0900A = 1 and C0900D = 1] or [C0900B = 1 and C0900D = 1] or [C0900C = 1 and C0900D = 1]); else = 0	✓	✓	✓	✓
Cognitive Function: Brief Interview for Mental Status score - Admission	Severely Impaired	=1 if Admission C0500 ≤ 7 or (C0900Z = 1 or ([C0900A=1 and C0900B = 0, and C0900C = 0, and C0900D = 0] or [C0900B=1 and C0900A = 0, and C0900C = 0, and C0900D = 0] or [C0900C=1 and C0900A = 0, and C0900B = 0, and C0900D = 0] or [C0900D=1 and C0900A = 0, and C0900B = 0, and C0900C = 0]); else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Communication Impairment - Admission	Moderate to Severe	=1 if Admission B0800 = 3 or B0800 = 2 or B0700 = 3 or B0700 = 2; else = 0	✓	✓	✓	✓
Communication Impairment - Admission	Mild	=1 if (Admission B0700 = 1 and B0800 = 1); OR (B0700 = 0 and B0800 = 1) OR (B0700 = 1 and B0800 = 0); else = 0	n/a	✓	n/a	✓
Urinary Continence - Admission	Occasionally incontinent, Frequently incontinent, or Always incontinent	=1 if Admission H0300 = 1 or H0300 = 2 or H0300 = 3; else = 0	✓	✓	✓	✓
Bowel Continence - Admission	Occasionally incontinent, frequently incontinent, or Always incontinent	=1 if Admission H0400 = 1 or H0400 = 2 or H0400 = 3; else = 0	✓	✓	✓	✓
History of Falls - Admission	History of one or more falls in the 6 months prior to admission, including a fracture related to a fall in the 6 months prior to admission	= 1 if Admission J1700A = 1 or J1700B = 1 or J1700C = 1; else = 0	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Total Parenteral/IV Feeding or Tube Feeding - Admission	While a resident	=1 if Admission K0510B2 = 1 or K0510A2 = 1; else = 0	✓	✓	✓	✓
Comorbidity HCC Group 1	Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock (HCC2)	=1 if Admission I2100 (Septicemia) = 1 or =1 if Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category) = see Crosswalk ICD-10 codes to HCC2; else = 0	✓	n/a	✓	n/a
Comorbidity HCC Group 2	Metastatic Cancer and Acute Leukemia (HCC8)	=1 if Admission I0100 (Cancer with or without metastasis) =1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)]= see Crosswalk ICD-10 codes to HCC8; or; else = 0	✓	✓	✓	✓
Comorbidity HCC Group 3	Lymphoma and Other Cancers (HCC10)	=1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC10; else = 0	n/a	✓	n/a	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Comorbidity HCC Group 4	Colorectal, Bladder, and Other Cancers (HCC11)	=1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC11; else = 0	n/a	✓	n/a	✓
Comorbidity HCC Group 5	Diabetes: Diabetes with Chronic Complications (HCC18), Diabetes without Complication (HCC19)	=1 if Admission Item I2900 (Diabetes Mellitus) =1 or =1 [if Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC18, HCC19; else = 0	✓	n/a	✓	n/a
Comorbidity HCC Group 6	Other Significant Endocrine and Metabolic Disorders (HCC23)	=1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC23; else = 0	✓	n/a	✓	n/a
Comorbidity HCC Group 7	Dementia: Dementia With Complications (HCC51), Dementia Without Complications (HCC52)	=1 if Admission I4800 (Non-Alzheimer's Dementia) =1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC51, HCC52; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Comorbidity HCC Group 8	Mental Health Disorders: Schizophrenia (HCC57), Major Depressive, Bipolar, and Paranoid Disorders (HCC58), Reactive and Unspecified Psychosis (HCC59), Personality Disorders (HCC60)	=1 if [Admission I6000 (Schizophrenia) or I5800 (Depression) or I5900 (Bipolar) or I5950 (Psychotic-other than schizophrenia)] =1; or =1 If [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC57, HCC58, HCC59, HCC60; else = 0	n/a	✓	n/a	✓
Comorbidity HCC Group 9	Tetraplegia (excluding complete tetraplegia) (HCC70) and paraplegia (HCC71)	=1 if [Admission I5000 (Paraplegia) or I5100 (quadriplegia)] = 1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)]= see Crosswalk ICD-10 codes to HCC70, HCC71; =0 if Admission I0020 = 04 (Non-traumatic spinal cord dysfunction) or 05 (Traumatic spinal cord dysfunction); else = 0[d]	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Comorbidity HCC Group 10	Multiple Sclerosis (HCC77)	=1 if Admission I5200 (Multiple Sclerosis) =1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC77; =0 if Admission I0020 = 06 (Progressive Neurological Conditions); else = 0	✓	✓	✓	✓
Comorbidity HCC Group 11	Parkinson's and Huntington's Diseases (HCC78)	=1 if [Admission I5250 (Huntington's Disease) or I5300 (Parkinson's)] =1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)]= see Crosswalk ICD-10 codes to HCC78; =0 if Admission I0020 =06 (Progressive Neurological Conditions); else = 0	✓	n/a	✓	n/a
Comorbidity HCC Group 12	Angina Pectoris (HCC88)	=1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC88; =0 if Admission I0020 = 12 Debility, Cardiorespiratory Conditions); else = 0	✓	n/a	✓	n/a

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Comorbidity HCC Group 13	Hemiplegia/ Hemiparesis (HCC103)	=1 if [Admission I4900 (Hemiplegia or Hemiparesis); or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC103; else = 0	✓	✓	✓	✓
Comorbidity HCC Group 14	Aspiration, Bacterial, and Other Pneumonias: Aspiration and Specified Bacterial Pneumonias (HCC114), Pneumococcal Pneumonia, Empyema, Lung Abscess (HCC115)	=1 if Admission I2000 (Pneumonia)=1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC114, HCC115; =0 if Admission I0020 =12 (Debility, Cardiorespiratory Conditions); else = 0	n/a	✓	n/a	✓
Comorbidity HCC Group 15	Dialysis Status (HCC134), Chronic Kidney Disease, Stage 5 (HCC136)	=1 O0100J1 or O0100J2 – (Special treatment, procedures, and programs: Dialysis)] =1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC134, HCC136; else = 0	✓	✓	✓	✓

(continued)

Table A-4 (continued)
Risk-Adjustment Covariates for the Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Measures
(NQF #2633, NQF #2634, NQF #2635, and NQF #2636)

Risk Adjustor	Risk Adjustor Category	MDS Item(s) and Calculations[a]	Change in Self-Care Score (NQF #2633)	Change in Mobility Score (NQF #2634)	Discharge Self-Care Score (NQF #2635)	Discharge Mobility Score (NQF #2636)
Comorbidity HCC Group 16	Chronic Kidney Disease - Stages 1-4, Unspecified: Chronic Kidney Disease, Severe (Stage 4) (HCC137), Chronic Kidney Disease, Moderate (Stage 3) (HCC138), Chronic Kidney Disease, Mild or Unspecified (Stages 1-2 or Unspecified) (HCC139)	=1 if Admission I1500 (Renal Insufficiency, renal failure, or ESRD) = 1; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC137, HCC138, HCC139; else = 0	n/a	✓	n/a	✓
Comorbidity HCC Group 17	Amputations: Traumatic Amputations and Complications (HCC173), Amputation Status, Lower Limb/ Amputation Complications (HCC189)	=1 if [Admission G0600D (Limb prosthesis) = 1 or O0500I (Training and skill practice in Amputation) ≥1]; or =1 if [Admission I8000 (Additional active diagnoses) or I0020B (Primary medical condition category)] = see Crosswalk ICD-10 codes to HCC173, HCC189; =0 if Primary Medical Condition Category I0020 = 08 (Amputation); else = 0	✓	✓	✓	✓

HCC = Hierarchical Condition Category

(continued)

Note: ‘n/a’ in a measure’s coefficient column indicates a 0 value, and the risk adjuster can be left out of the regression model; The logic for calculating most risk adjusters is summarized as “*new variable* = [1] if *old item* = [X]; else = [0]”. Thus, any instances of missing, a caret, or a dash should be coded as 0 for that risk adjuster item and the Medicare Part A SNF Stay would not be dropped.

[a] Calculation steps are run in the order in which they are presented (i.e., top to bottom within each risk-adjustor category) so that exceptions to the coding logic are accurately applied.

[b] When calculating the admission self-care and mobility score risk adjusters, first recode each function item so that a code of 07, 09, 10, or 88 is recoded to 01. Use this code as the score. If the mobility item is dash (-), skipped (^), or missing, recode to 01 and use this code as the score. If code is between 01 and 06, then use code as the score. The self-care – continuous covariate will have a range of scores from 7 to 42, and the mobility – continuous covariate will have a range of 15 to 90 after recoding.

[c] The 14 Primary Diagnosis Groups (Item I0020) should account for all Medicare Part A SNF Stay records. If a record is not included in one of the 14 groups due to missing information, please default to coding = [14] Other Medical Conditions so all records are included in one of the 14 groups. Please note that these groups are mutually exclusive.

[d] Although Complete Tetraplegia is originally part of this HCC, it has been excluded from this comorbidity in our model because it is an exclusion criterion for the SNF Change in Self-Care Score, Change in Mobility Score, Discharge Self-Care Score, and Discharge Mobility Score Quality Measures. Residents with Incomplete or Unspecified Tetraplegia would be included in this category.

Section A.2: Risk-Adjustment Appendix File Overview

The intercept and coefficient values for each of the covariates listed by quality measure in Section A-1 are available in the Risk-Adjustment Appendix File, which can be accessed on the SNF Quality Reporting Measures Information website. This Risk-Adjustment Appendix File, which is used alongside this appendix, contains current and historical intercept and coefficient values and the risk-adjustment schedule including applicable discharge dates for each update to the intercept and coefficient values.

Excel Worksheets in the Risk-Adjustment Appendix File:

Overview*:* Brief description of the document and its content.

Schedule*:* The risk-adjustment schedule for each quality measure.

- *Quality Measure Name*: Full measure name as referenced throughout the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual V2.0. A National Quality Forum (NQF) identification number is provided with the quality measure name, as applicable.
- *Measure Reference Name:* Abbreviated name for the quality measure.
- *Risk-Adjustment Update ID:* Number assigned to the initial and subsequent updates of the coefficient and intercept values for a unique risk-adjusted quality measure.
- *QM User's Manual Specification Version:* Number assigned to the initial and subsequent versions of the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual, located on the title page.
- *QM User's Manual Specification Posting Date:* Month and year of the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual posting on the SNF Quality Reporting Measures Information website.
- *Measure Calculation Application Dates:* Discharge dates associated with the intercept and coefficient values for each Risk-Adjustment Update ID.

National Average: This tab provides a national average observed score for each Risk-Adjustment Update ID to be used for applicable risk-adjusted quality measures. Values are provided because there is limited public accessibility to national assessment data. Please note that, depending on the reporting period and time of calculation, the national average observed score used in the CASPER QM Reports, Provider Preview Reports, and on public display on the Compare Website may vary from the national average observed score provided by the Risk-Adjustment Appendix File.

Quality Measure Specific Tabs*:* Lists each covariate and its associated coefficient value for each risk-adjustment update ID.

Section A.3: Risk-Adjustment Procedure

Below is the procedure on how to use the Skilled Nursing Facility Quality Reporting Program Measure Calculations and Reporting User's Manual and the associated Risk-Adjustment Appendix File information to apply intercept and coefficients values to calculate the risk-adjusted scores. Steps to calculate the risk-adjusted quality measures may vary by each measure. The following procedure contains the general steps:

1. Utilize the record selection guidance as listed in Chapter 4 Record Selection for Assessment-Based (MDS) Quality Measures in this manual.
2. Use the specific calculation steps provided in Chapter 7 Calculations for Assessment-Based (MDS) Measures That Are Risk-Adjusted.
    a. Refer to Appendix A on details to calculate the covariates for each quality measure.
3. Refer to the Risk-Adjustment Appendix File information to apply intercept and coefficient values to measure calculations. Under the Schedule tab, refer to the QM User's Manual Specification Version relevant to the timeframe for which you want to calculate the measure.
4. Use the column "Measure Calculation Application Dates" to select the applicable discharge dates then identify the Risk-Adjustment Update ID associated with those discharge dates.
5. Select the applicable quality measure tab then use the applicable Risk-Adjustment Values Update ID column. Apply the intercept and coefficient values for each covariate.
    a. For quality measures using the national average observed score in the measure calculation, select the National Average tab and use the national average observed score that corresponds to the Risk-Adjustment Values Update ID column used.

Example (Steps 3-5): Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury

- MDS record had a discharge date of 06/15/2019
- In the Schedule tab of the Risk-Adjustment Appendix File, refer to the Pressure Ulcer measure.
    - The discharge date of 06/15/2019 is within the discharge date range for Risk-Adjustment Update ID 1 (10/01/2018– 09/30/2019). Therefore, the user should use the information provided in the Risk-Adjustment ID 1 column.
- Select the Pressure Ulcer tab and apply the intercept and coefficient values in the Risk-Adjustment ID 1 column for each covariate.
- Select the National Average tab and use the Risk-Adjustment Update ID 1 column for the Pressure Ulcer national average observed score.