Long-Term Care Hospital Quality Reporting Program Measure Calculations and Reporting User's Manual

Version 3.0

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LONG-TERM CARE HOSPITAL QUALITY REPORTING PROGRAM MEASURE CALCULATIONS AND REPORTING USER'S MANUAL

VERSION 3.0

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Long-Term Care Hospital 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) Long-Term Care Hospital (LTCH) Quality Reporting Program (QRP). 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.[1] 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 LTCH QRP and additional information pertaining to public reporting is publicly available and can be accessed through the LTCH QRP website.[2] The next section outlines the organization of the manual and provides an overview of the information found in each section.

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. The remaining chapters are organized by quality measure and provide detailed information about measure specifications 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 claims-based measures, respectively. The quality measures that rely on LTCH Continuity Assessment Record & Evaluation (CARE) Data Set are presented in **Chapter 4** and record selection criteria is explained for each measure. **Chapter 5** describes two Certification and Survey Provider Enhanced Reports (CASPER) data reports for the LTCH CARE Data Set 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 patient-level data. The CASPER QM Reports are comprised of two report types, one containing facility-level measure information and a second that includes patient-level data for a selected reporting period. 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. The chapter concludes with the

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[1] Centers for Medicare & Medicaid Services. (February 2016). Quality Measures. Accessed on January 25, 2017. Available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html

[2] The LTCH QRP website can be found at the following link: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/index.html

transition from LTCH CARE Data Set V3.00 to the LTCH CARE Data Set V4.00. Data collection for LTCH CARE Data Set V4.00 begins on July 1, 2018 and will impact certain quality measure specifications. **Chapter 6** presents the measure calculation methodology specific to the LTCH CARE Data Set quality measures and **Chapter 7** provides the measure logic specifications for each of the quality measures within the LTCH CARE Data Set, in table format. Lastly, **Appendix A** and the associated Risk-Adjustment Appendix File includes the intercept and covariate coefficient values that are used to calculate the assessment-based (LTCH CARE Data Set) risk-adjusted measures.

Section 1.2: LTCH Stay Definitions

Patient Stay Record: A patient stay record is an LTCH CARE Data Set record, which includes both an admission and discharge date and reflects an LTCH stay.

Stay: The period of time between a patient's admission date into a LTCH and discharge date. A stay is also defined as a set of contiguous days in an LTCH. Interrupted stay(s) of 3 calendar days or less are included as part of the patient stay.

The start of a stay is: Any admission assessment (A0250 = [01]).

The end of a stay is the discharge assessment record for the patient with the same admission date as the admission assessment record and the highest discharge Reason For Assessment (RFA) value:

- Any discharge assessment (A0250 = [10,11]), *or*

- Any expired assessment (A0250 = [12]).

Target date: The target date for an assessment is defined as follows:

- For an admission assessment (A0250 Reason for Assessment (RFA) = [01]), the target date is equal to the admission date (A0220). This is the admission target date.

- For a discharge assessment (A0250 Reason for Assessment = [10, 11]) or expired record (A0250 Reason for Assessment = [12]), the target date is equal to the discharge date (A0270). This is the discharge target date on the discharge assessment.

  – For expired assessments, the date of death (A0270) is the discharge date.

  – When there are multiple discharge assessments associated with a single target date, use the discharge assessment with the highest RFA. The date on the highest RFA discharge assessment will be the discharge target date.

    Example: If a patient had multiple assessment records that share the same target date and RFA = 11 unplanned discharge and an RFA = 10 planned discharge, the assessment records for the stay are the admission assessment record and the unplanned discharge assessment record.

Target period: The span of time that defines the measure reporting period (e.g., a calendar year for the quality measure Percent of Residents or Patients with New or Worsened Pressure Ulcers [NQF #0678][3]).

Patient Stay for quality measure sample: A patient stay is defined by a pair of patient assessment records that meet all the following criteria:

- Assessments consist of:
    - Admission assessment (A0250 = [01]). This record is the ***start-of-patient stay*** record.
    - Discharge assessment or expired assessment (A0250 = [10, 11, 12]). This record is the ***end-of-patient stay*** record.

- The target date for the ***end-of-patient stay*** record must be the same as or later than the target date for the ***start-of-patient stay*** record.

- Both the ***start-*** and ***end-of-patient stay*** records must meet the following conditions:
    - Identical admission date (A0220)
    - Same provider
    - Identical Resident Internal ID

- The assessment records included in a ***patient stay for quality measure sample*** could span across quarter(s).

- For quality measure calculation purposes, both the admission and discharge (or expired) assessment included in the ***patient stay*** are assigned to the target period of the discharge date (A0270).
    - Any admission assessment that is not matched to a discharge assessment or any discharge assessments or an expired assessment not matched to an admission assessment is not part of a patient stay and is excluded from the ***quality measure sample***.

- There are no intervening assessment records between the start- and end-of-patient stay records in the patient's sorted assessment records when the end of patient stay record is selected, as instructed above, and the unmatched discharge assessment records for the stay are discarded.

- In the case of multiple discharge assessments (where there is more than one discharge record (planned, unplanned discharge, expired) for the same patient on the same discharge date and with the same admission date in the same facility), use the discharge record as defined as the end-of-stay record above.

Sort order: The patient's assessment records included in the target period must be sorted by the following:

- Provider Internal ID

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[3] NQF: National Quality Forum

- Patient Internal ID

- Target date (descending). This will result in assessment records appearing in reverse chronological order so that the most recent assessment record appears first. This will also ensure that the discharge or expired assessment record appears prior to the admission assessment record.

- Item A0250 Reason for Assessment (RFA) (descending). If more than one assessment record shares a target date, this will cause the expired discharge assessment record to appear first, followed by the unplanned discharge assessment record, followed by the planned discharge assessment record, followed by the admission assessment records. For example, if a patient has more than one type of discharge assessment record (unplanned, planned, expired) that share the same target date, then the patient with one admission and all three types of discharge assessment records would have their records sorted as follows: RFA = 12, expired; then RFA = 11, unplanned discharge; then RFA = 10, planned discharge; then RFA = 01, admission.

Section 1.3: Measure-Specific Definitions

- **Influenza Season:** Influenza season begins on July 1 of a given year and ends on June 30 of the subsequent year (e.g., July 1, 2018 through June 30, 2019 for the 2018-2019 influenza season).[4]

- **Influenza Vaccination Season:** Influenza vaccination season begins on October 1 of a given year and ends on March 31 of the subsequent year (e.g., October 1, 2018 through March 31, 2019 for the 2018-2019 influenza vaccination season).[4]

- **Incomplete Stay:** Incomplete stays are defined for the function measures. We refer readers to **Chapter 6** to review the measure specifications to determine what is considered an incomplete stay for each measure, as applicable.

- **Complete Stay:** Complete stays are identified as patient stays that are not incomplete for the function measures. All patients not meeting the criteria for incomplete stays will be considered complete stays.

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[4] This definition is applicable to the following measures: Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01); Percent of Residents or Patients Who Received the Seasonal Influenza Vaccine (Short Stay) (NQF #0680a) (CMS ID: L003.01); Percent of Residents or Patients Who Were Offered and Declined the Seasonal Influenza Vaccine (Short Stay) (NQF #0680b) (CMS ID: L004.01); Percent of Residents or Patients Who Did Not Receive, Due to Medical Contraindication, the Seasonal Influenza Vaccine (Short Stay) (NQF #0680c) (CMS ID: L005.01).

Table 1-1 below provides a list of the assessment-based measures included in the LTCH QRP and the corresponding reference name for each measure.

Table 1-1
Assessment-Based Quality Measure (LTCH CARE Data Set) NQF Number, CMS ID, and Measure Reference Name Crosswalk

Quality Measure	NQF #	CMS ID	Measure Reference Name
Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) [5]	0678	L001.02	Pressure Ulcer
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury	N/A	L021.01	Pressure Ulcer/Injury
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) [6]	0674	L012.01	Application of Falls
Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support	2632	L011.02	Change in Mobility
Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function	2631	L009.02	Functional Assessment
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function [7]	2631	L010.02	Application of Functional Assessment

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[5] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/0678) (in addition to inpatient rehabilitation facility and skilled nursing facility/nursing home settings) and is finalized for reporting by LTCHs under the FY 2012 IPPS/LTCH PPS final rule (76 FR 51748 through 51750), FY 2014 IPPS/LTCH PPS final rule (78 FR 50861 through 50863), and FY 2016 IPPS/LTCH PPS final rule (80 FR 49731 through 49736). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the SNF/NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[6] 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 LTCHs under the FY 2014 IPPS/LTCH PPS final rule (78 FR 50874 through 50877) and FY 2016 IPPS/LTCH PPS final rule (80 FR 49736 through 49739).

[7] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2631) and is (finalized for reporting by LTCHs under the FY 2016 IPPS/LTCH PPS final rule (80 FR 49739 through 49747).

Quality Measure	NQF #	CMS ID	Measure Reference Name
Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine[8]	0680	L002.01	Patient Influenza Vaccine
Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP	N/A	L020.01	DRR
Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay	N/A	L022.01	Compliance with SBT
Ventilator Liberation Rate	N/A	L023.01	Ventilator Liberation

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[8] This measure is NQF-endorsed for use in the Long-Term Care Hospital (LTCH) setting (https://www.qualityforum.org/QPS/0680) (in addition to inpatient rehabilitation facility and nursing home settings) and is finalized for reporting by LTCHs under the FY 2013 IPPS/LTCH PPS final rule (77FY 2013 IPPS/LTCH PPS final rule (77 FR 53624 through 53627). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

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.[9] Additionally, quality measure information and quality reporting program details can be found in the FY 2017 IPPS/LTCH PPS final rule.[10] Below are the CDC NHSN quality measures included in the LTCH QRP and hyperlinks that provide detailed information about each 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) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure (NQF #0138) (CMS ID: L006.01)**

  – This measure calculates the total number of healthcare-associated CAUTI among patients in bedded inpatient care locations, from the total number of indwelling urinary catheter days for each location under surveillance for CAUTI during the associated data period. This measure is risk-adjusted.

    ○ CDC NHSN: CAUTI

- **National Healthcare Safety Network (NHSN) Central Line-Associated Bloodstream Infection (CLASBI) Outcome Measure (NQF #0139) (CMS ID: L007.01)**

  – This measure calculates the total number of observed healthcare-associated CLASBI among patients in bedded inpatient care locations, from the total number of central line days for each location under surveillance for CLASBI during the associated data period. This measure is risk-adjusted.

    ○ CDC NHSN: CLASBI

- **Facility-Wide Inpatient Hospital-Onset *Methicillin-Resistant Staphylococcus aureus* (MRSA) Bacteremia Outcome Measure (NQF #1716) (CMS ID: L013.01)**

  – This measure calculates the total number of observed hospital-onset unique blood source MRSA LabID events among all inpatients in the facility, from the total number of expected hospital-onset unique blood source MRSA LabID events, determined through the facility's number of inpatient days, bed size, affiliation with medical school, and community-onset MRSA bloodstream infection admission prevalence rate. This measure is risk-adjusted.

    ○ CDC NHSN: MRSA

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[9] The CDC NHSN website can be found at the following link: https://www.cdc.gov/nhsn/index.html

[10] FY 2017 IPPS/LTCH PPS final rule can be found at the following link: https://www.gpo.gov/fdsys/pkg/FR-2016-08-22/pdf/2016-18476.pdf

- **Facility-Wide Inpatient Hospital-Onset *Clostridium difficile* Infection (CDI) Outcome Measure (NQF #1717) (CMS ID: L014.01)**
    - This measure calculates the total number of observed hospital-onset CDI LabID events among all inpatients in the facility, excluding well baby-nurseries and NICUs, from the total number of expected hospital-onset CDI LabID events, determined through the facility's number of inpatient days, bed size, affiliation with a medical school, microbiological test used to identify C. difficile, and community onset CDI admission prevalence rate.
        - [CDC NHSN: CDI](#)

- **Influenza Vaccination Coverage Among Healthcare Personnel (NQF #0431) (CMS ID: L015.01)**
    - This measure identifies the percentage of healthcare personnel who receive the influenza vaccination among the total number of healthcare personnel in the facility for at least one working day between October 1 and March 31 of the following year, regardless of clinical responsibility or patient contact.
        - [CDC NHSN: Healthcare Personnel Vaccination Coverage](#)

- **Ventilator-Associated Event (VAE) Outcome Measure (CMS ID: L016.01)**
    - This measure reports each VAE that is identified by summing daily counts of ventilator days, which are the numbers of patients managed with ventilator appropriate devices, during the month selected for surveillance and reporting the total number of VAEs for the respective month.
        - [CDC NHSN: VAE](#)

Chapter 3
Medicare Claims-Based Measures

CMS utilizes a range of data sources to calculate measures. The measures listed below were developed using Medicare claims data submitted for Medicare Fee-For-Service patients. Each measure is calculated using unique specifications and methodologies specific to the measure. Information regarding measure specifications and reporting details is publicly available and can be accessed on the LTCH Quality Reporting Measures Information website.[11] Below are the Medicare claims-based measures included in the LTCH 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:

- **All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Long Term Care Hospitals (NQF #2512) (CMS ID: L008.01)**[12]

  – This measure estimates the risk-standardized rate of unplanned, all-cause readmissions for patients (Medicare fee-for-service (FFS) beneficiaries) discharged from long-term care hospitals (LTCH) who were readmitted to a short-stay acute-care hospital or LTCH, within 30 days of an LTCH discharge.

    ○ Medicare Claims-Based: All-Cause Unplanned Readmission 🔗

- **Potentially Preventable 30-Day Post-Discharge Readmission Measure for Long-Term Care Hospital Quality Reporting Program (CMS ID: L017.01)**

  – This measure estimates the risk-standardized rate of unplanned, potentially preventable readmissions for patients (Medicare FFS beneficiaries) who receive services in one of the following post-acute care settings: skilled nursing facilities (SNFs), inpatient rehabilitation facilities (IRFs), and long-term care hospitals (LTCH).

    ○ Medicare Claims-Based: Potentially Preventable Readmissions

- **Discharge to Community-Post Acute Care (PAC) Long-Term Care Hospital Quality Reporting Program (CMS ID: L018.01)**

  – This measure reports an LTCH's risk-standardized rate of Medicare FFS patients who are discharged to the community following an LTCH 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

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[11] The LTCH Quality Reporting Measures Information website can be found at the following link: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-Quality-Reporting-Measures-Information.html

[12] As finalized in the FY 2018 LTCH/IPPS Final Rule, the claims measure All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from a Long-Term Care Hospital (NQF #2512) is being removed as of October 2018.

discharge to community. Community, for this measure, is defined as home or self-care, with or without home health services.

- ○ [Medicare Claims-Based: Discharge to Community-Post Acute Care](#)

- **Medicare Spending Per Beneficiary Post-Acute Care (PAC) Long-Term Care Hospital Quality Reporting Program (CMS ID: L019.01)**

  – This measure evaluates LTCH providers' efficiency relative to the efficiency of the national median LTCH provider. Specifically, the measure assesses the cost to Medicare for services performed by the LTCH provider during an MSPB-PAC LTCH episode. The measure is calculated as the ratio of the price-standardized, risk-adjusted MSPB-PAC amount for each LTCH divided by the episode-weighted median MSPB-PAC amount across all LTCH providers.

    - ○ [Medicare Claims-Based: Medicare Spending Per Beneficiary](#)

Chapter 4
Record Selection for Assessment-Based Quality Measures (LTCH CARE Data Set)

Section 4.1: Quality Measures Based on the Calendar Year

This section presents the **record selection** criteria for the assessment-based (LTCH CARE Data Set) quality measures that require patient stay record data to be included in the measure calculation and whose **target period is either 12 months (four quarters) or 24 months (eight quarters)**.

Quality measures included in this section:

- Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)

- Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

- Please refer to **Chapter 6, Section 6.1.A** on the effective date for data collection and implementation date for the CASPER reports.

- Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

- Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)

- 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: L009.02)

- 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) (CMS ID: L010.02)

- Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

- Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

- Ventilator Liberation Rate (CMS ID: L023.01)

The eligible patient stay records for these quality measures are selected as follows:

1. Select all LTCH CARE Data Set stays with a target date (discharge date (A0270)) within the data target period.

2. For each LTCH CARE Data Set record (i.e., LTCH stay), do the following:

   a. Sort the records according to the sort order defined in **Chapter 1**, **Section 1.2**.

b. Select all stays that meet the patient stay for quality measure definition in **Chapter 1**, **Section 1.2** that end with a discharge or expired assessment (A0250 = [10, 11,12]) and whose discharge target date is within the target period. These are *target period patient stay records*. If a patient has multiple patient stay records with a discharge date within the data target period, then include each eligible patient stay in the measure.

3. Apply the respective quality measure calculations from **Chapter 6** to the eligible target period patient stay records. Additionally, **Chapter 7** provides the instructions in table format, which are listed below:

   a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02), *Table 7-1*

   b. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01), *Table 7-2* [13]

   c. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01), *Table 7-3*

   d. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02), *Table 7-4*

   e. Percent of Long-Term Care Hospital (LTCH) Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addressed Function (NQF #2631) (CMS ID: L009.02), *Table 7-5*

   f. 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) (CMS ID: L010.02), *Table 7-6*

   g. Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01), *Table 7-8*

   h. Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01), *Table 7-9*

   i. Ventilator Liberation Rate (CMS ID: L023.01), *Table 7-10*

Section 4.2: Quality Measure: Percent of Residents of Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

This section presents the **record selection** criteria for the LTCH CARE Data Set Patient Influenza Vaccine measure.

Influenza Season: Influenza season begins on July 1 of a given year and ends on June 30 of the subsequent year (e.g., July 1, 2018 through June 30, 2019 for the 2018-2019 influenza season).

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[13] Please refer to Chapter 6, Section 6.1.A on the effective date for data collection and implementation date for the CASPER reports.

Influenza Vaccination Season: Influenza vaccination season begins on October 1 of a given year and ends on March 31 of the subsequent year (e.g., October 1, 2018 through March 31, 2019 for the 2018-2019 influenza vaccination season).

1. The measure includes all patients who were in an LTCH for one or more days during the influenza vaccination season (i.e., October 1 to March 31) AND whose discharge date was within the target period (influenza season (i.e., July 1 to June 30)).

2. For each patient stay within each LTCH from step 1, do the following:

   a. Sort the records according to the sort order as defined in Chapter 1, Section 1.2.

   b. Select all patient stays with a discharge date within the influenza season (i.e., July 1 of a given year to June 30 of the subsequent year).

   c. From the records selected in step b, select the patient stays that meet one of the following conditions so that any patient in the LTCH for one or more days during the influenza vaccination season is included:

      All LTCH CARE Data Set patient stays with an admission date (A0220) *or* a planned or unplanned or expired (A0250 = 10, 11, 12) discharge date (A0270) within the influenza vaccination season; *or* with the admission date (A0220) before the influenza vaccination season and the planned or unplanned or expired (A0250 = 10, 11, 12) discharge date (A0270) after the influenza vaccination season, such that the stay includes one or more days in the LTCH during the influenza vaccination season.

      For example, the record of a patient admitted to an LTCH on March 31 will be selected based on the admission date, as long as the discharge date is within the associated influenza season (i.e., July 1 to June 30). The record of a patient discharged from an LTCH on October 1 will be selected based on the discharge date, regardless of the admission date. The record of a patient admitted on September 30 and discharged on April 1 will be selected because the stay includes one or more days in the LTCH during the influenza vaccination season.

   d. If the patient has multiple patient stay records during the target period, then include all qualifying patient stays in the measure.

   e. If the patient has a stay that contains at least one day in more than one influenza vaccination season, use the data from the most recent influenza vaccination season to calculate the measure.

3. Apply the quality measure definition from **Chapter 7** to the eligible target patient stay records.

   a. Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01), *Table 7-7*

4. Refer to the respective tables in **Chapter 5** for data included in the CASPER Review and Correct Reports and the CASPER QM Reports.

Table 4-1
Target Period for all Assessment-Based Quality Measures (LTCH CARE Data Set)

Quality Measure	Target Period
Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01)	January 1 through December 31
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)[14]	January 1 through December 31
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF 0674) (CMS ID: L012.01)	January 1 through December 31
Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)	January 1 through December 31
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: L009.02)	January 1 through December 31
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: L010.02)	January 1 through December 31
Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)	July 1 through June 30
Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)	January 1 through December 31
Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)	January 1 through December 31
Ventilator Liberation Rate (CMS ID: L023.01)	January 1 through December 31

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[14] Please refer to Chapter 6, Section 6.1.A on the effective date for data collection and implementation date for the CASPER reports.

Chapter 5
Certification and Survey Provider Enhanced Reports (CASPER) Data Selection for Assessment-Based Quality Measures (LTCH CARE Data Set)

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 LTCH QRP and are specific to those quality measures calculated using the LTCH CARE Data Set. 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 patient-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 patient-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 patient-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 (LTCH CARE Data Set) measures are updated monthly, at the facility- and patient-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 CDC NHSN measures are provided 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 contains the data selection for the assessment-based (LTCH CARE Data Set) quality measures for the CASPER Review and Correct Reports. Since the criteria and reporting periods for the CASPER QM Reports are consistent across the facility- and patient-level reports.

Section 5.2 of this chapter presents data selection information that can be applied to both the CASPER Patient-level QM Reports and the CASPER Facility-level QM Reports.

Section 5.3 of this chapter addresses the transition from LTCH CARE Data Set V3.00 to the LTCH CARE Data Set V4.00. Data collection for LTCH CARE Data Set V4.00 begins on July 1, 2018 and will impact certain quality measure specifications.

Section 5.1: CASPER Review and Correct Reports

Below are the specifications for the CASPER Review and Correct Reports for the quality measures presented in **Chapter 4**, **Sections 4.1 and 4.2:**

1. Quarterly reports contain quarterly rates and a cumulative rate.

    a. The quarterly rates will be displayed using up to one quarter of data.

    b. The cumulative rates will be displayed using all data within one target period.

        i. **For all measures, excluding the Change in Mobility measure:** the cumulative rate is derived by including all patient stays in the numerator for the target period, which do not meet the exclusion criteria, and dividing by all patient stays included in the denominator for the target period.

        ii. **For the Change in Mobility measure:** the target population is derived by including all patient stays for the target period, which do not meet the exclusion criteria, and calculating the change scores for each patient stay. For instructions on calculating the change scores, please see **Chapter 6, Section 6.4** for the Change in Mobility measure.

    c. The data will be frozen 4.5 months (15th day of the 5th month) after the end of each quarter (data submission deadline).

        i. e.g., Data will be frozen on August 15th for Quarter 1 (January 1 through March 31) data collection.

    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. Patient-level data will be displayed for each reporting quarter in the report.[15]

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:

    a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)

    b. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

        i. Please refer to **Chapter 6, Section 6.1.A** on the effective date for data collection and implementation date for the CASPER reports.

    c. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

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[15] Patient-level data will be available for the Review and Correct reports starting in 2019.

d. 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: L009.02)

e. 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: L010.02)

f. Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

g. Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

h. Ventilator Liberation Rate (CMS ID: L023.01)

5. The illustration of reporting timeline for the CASPER Review and Correct Reports for the following quality measure is provided in **Table 5-3** for the quarterly rates and **Table 5-5** for the cumulative rates:

a. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)

6. The illustration of reporting timeline for the CASPER Review and Correct Reports for the following quality measure is provided in **Table 5-6** for the quarterly rates and **Table 5-7** for the cumulative rates:

a. Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

7. **Data calculation rule**: The calculations include patient stays with discharge dates through the end of the quarter.

Table 5-1 defines the discharge dates included for each calendar year quarter and influenza season quarter. Note that the influenza season starts on July 1st which means Quarter 1 begins on July 1st as opposed to January 1st. **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. The Change in Mobility and Patient Influenza Vaccine measures have separate tables since they are the exceptions to this rule.

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

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

Table 5-2
Measure Types by User-Requested Year for all Assessment-Based Quality Measures
(LTCH CARE Data Set)

Quality Measure	Measure Type by User-Requested Year		
	2017	2018	2019
Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01)	New	Existing	Existing
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)	—	—	New
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF 0674) (CMS ID: L012.01)	New	Existing	Existing
Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.01)	New	Existing	Existing
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: L009.01)	New	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) (CMS ID: L010.01)	New	Existing	Existing
Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)	New	Existing	Existing
Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)	—	—	New
Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)	—	—	New
Ventilator Liberation Rate (CMS ID: L023.01)	—	—	New

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, 2019 (end date of March 31st), the four quarters of data that will be provided in this request will include the following: Q2 2018 (April through June), Q3 2018 (July – September), Q4 2018 (October – December), and Q1 2019 (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, 2019 (end date of March

31st), the only quarter of data that will be provided in this request will include the following: Q1 2019 (January – March).

Table 5-3
CASPER Review and Correct Reports: Quarterly Rates Included in Each Requested Quarter End Date[16]

Requested Calendar Year Quarter End Date[17]	Measure Type	Quarter(s) Included from Previous Year[18]	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

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

[17] YYYY = User-Requested Year

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

Table 5-4
CASPER Review and Correct Reports: Data Included in the Cumulative Rate for Each Requested Quarter End Date[19]

Requested Calendar Year Quarter End Date[20]	Measure Type	Data Included from Previous Year[21]	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

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

[20] YYYY = User-Requested Year

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

Table 5-5
CASPER Review and Correct Reports: Change in Mobility Data Included in the Cumulative Rate (24-months) for Each Requested Quarter End Date[22]

Requested Calendar Year Quarter End Date[23]	Data Included in the Cumulative Rate
Quarter 1, 2017	Quarter 1, 2017
Quarter 2, 2017	Quarter 1, 2017 through Quarter 2, 2017
Quarter 3, 2017	Quarter 1, 2017 through Quarter 3, 2017
Quarter 4, 2017	Quarter 1, 2017 through Quarter 4, 2017
Quarter 1, 2018	Quarter 1, 2017 through Quarter 1, 2018
Quarter 2, 2018	Quarter 1, 2017 through Quarter 2, 2018
Quarter 3, 2018	Quarter 1, 2017 through Quarter 3, 2018
Quarter 4, 2018	Quarter 1, 2017 through Quarter 4, 2018
Quarter 1, 2019	Quarter 2, 2017 through Quarter 1, 2019
Quarter 2, 2019	Quarter 3, 2017 through Quarter 2, 2019
Quarter 3, 2019	Quarter 4, 2017 through Quarter 3, 2019
Quarter 4, 2019	Quarter 1, 2018 through Quarter 4, 2019

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

[23] YYYY = User-Requested Year

Table 5-6
CASPER Review and Correct Reports: Patient Influenza Vaccine Quarterly Rates Included in Each Requested Quarter End Date[24]

Requested Calendar Year Quarter End Date[25]	Measure Type[26]	Influenza Season Quarter(s) Included in Each Report (Influenza Season)[27]
Quarter 1, YYYY	New or Existing	Quarter 1 (XXXX-YYYY) Quarter 2 (XXXX-YYYY) Quarter 3 (XXXX-YYYY)
Quarter 2, YYYY	New or Existing	Quarter 1 (XXXX-YYYY) Quarter 2 (XXXX-YYYY) Quarter 3 (XXXX-YYYY) Quarter 4 (XXXX-YYYY)
Quarter 3, YYYY	New or Existing	Quarter 1 (YYYY-ZZZZ)
Quarter 4, YYYY	New or Existing	Quarter 1 (YYYY-ZZZZ) Quarter 2 (YYYY-ZZZZ)

Please note that the Influenza season begins on July 1 of a given year and ends on June 30 of the subsequent year. Associated Influenza Vaccination Season begins on October 1 of a given year and ends on March 31 of the subsequent year.

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[24] See *Table 5-1* for discharge dates included for each quarter (influenza season).

[25] YYYY = User-Requested Year

[26] The influenza data is displayed identically when the measure was considered new or existing.

[27] XXXX = The year prior to the user-requested year; ZZZZ = The year after the user-requested year. Note that the XXXX YYYY influenza season ends on June 30th, and the new YYYY-ZZZZ influenza season starts on July 1st.

Table 5-7
CASPER Review and Correct Reports: Patient Influenza Vaccine Data Included in the Cumulative Rate for Each Requested Quarter End Date[28]

Requested Calendar Year Quarter End Date[29]	Measure Type[30]	Influenza Season Quarter(s) Included in Each Report (Influenza Season)[31]
Quarter 1, YYYY	New or Existing	Quarter 1 (XXXX-YYYY) through Quarter 3 (XXXX-YYYY)
Quarter 2, YYYY	New or Existing	Quarter 1 (XXXX-YYYY) through Quarter 4 (XXXX-YYYY)
Quarter 3, YYYY	New or Existing	Quarter 1 (YYYY-ZZZZ)
Quarter 4, YYYY	New or Existing	Quarter 1 (YYYY-ZZZZ) through Quarter 2 (YYYY-ZZZZ)

Please note that the Influenza season begins on July 1 of a given year and ends on June 30 of the subsequent year. Associated Influenza Vaccination Season begins on October 1 of a given year and ends on March 31 of the subsequent year.

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[28] See *Table 5-1* for discharge dates included for each quarter (influenza season).

[29] YYYY = User-Requested Year

[30] The influenza data is displayed identically when the measure was considered new or existing.

[31] XXXX = The year prior to the user-requested year; ZZZZ = The year after the user-requested year. Note that the XXXX-YYYY influenza season ends on June 30th, and the new YYYY-ZZZZ influenza season starts on July 1st.

Section 5.2: CASPER Quality Measure (QM) Reports

Below are the specifications for the CASPER QM Reports for measures presented in **Chapter 4**, **Section 4.1 and 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 reporting timeline for the monthly CASPER QM Reports is provided in *Table 5-8* for the following measures:

    a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)

    b. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

        i. Please refer to **Chapter 6, Section 6.1.A** on the effective date for data collection and implementation date for the CASPER reports.

    c. Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

    d. 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: L009.02)

    e. 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: L010.02)

    f. Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

    g. Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

    h. Ventilator Liberation Rate (CMS ID: L023.01)

3. The illustration of reporting timeline for the monthly CASPER QM Reports is provided in *Table 5-9* for the following measure:

    a. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)

4. The illustration of reporting timeline for the monthly CASPER QM Reports is provided in *Table 5-10* for the following measure:

    a. Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

5. **Data calculation rule:** The calculations include patient stays with discharge dates through the end of the month.

Table 5-8
CASPER QM Reports: Data Included in the Cumulative Rate for Each Requested Report End Date

Requested Report End Date[32]	CASPER QM Report Calculation Month	Data Included from Previous Year[33]	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

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[32] YYYY = User-Requested Year

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

Table 5-9

CASPER QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months) for Each Requested Report End Date

Requested Report End Date[34]	CASPER QM Report Calculation Month	Data Included in the Requested Report End Date
06/30/2016 (Quarter 2, 2016)	May 2016	April 1, 2016 through April 30, 2016
	June 2016	April 1, 2016 through May 31, 2016
	July 2016	April 1, 2016 through June 30, 2016
09/30/2016 (Quarter 3, 2016)	August 2016	April 1, 2016 through July 31, 2016
	September 2016	April 1, 2016 through August 31, 2016
	October 2016	April 1, 2016 through September 30, 2016
12/31/2016 (Quarter 4, 2016)	November 2016	April 1, 2016 through October 31, 2016
	December 2016	April 1, 2016 through November 30, 2016
	January 2017	April 1, 2016 through December 31, 2016
03/31/2017 (Quarter 1, 2017)	February 2017	April 1, 2016 through January 31, 2017
	March 2017	April 1, 2016 through February 28, 2017
	April 2017	April 1, 2016 through March 31, 2017
06/30/2017 (Quarter 2, 2017)	May 2017	April 1, 2016 through April 30, 2017
	June 2017	April 1, 2016 through May 31, 2017
	July 2017	April 1, 2016 through June 30, 2017
09/30/2017 (Quarter 3, 2017)	August 2017	April 1, 2016 through July 31, 2017
	September 2017	April 1, 2016 through August 31, 2017
	October 2017	April 1, 2016 through September 30, 2017
12/31/2017 (Quarter 4, 2017)	November 2017	April 1, 2016 through October 31, 2017
	December 2017	April 1, 2016 through November 30, 2017
	January 2018	April 1, 2016 through December 31, 2017
03/31/2018 (Quarter 1, 2018)	February 2018	April 1, 2016 through January 31, 2018
	March 2018	April 1, 2016 through February 28, 2018
	April 2018	April 1, 2016 through March 31, 2018

(continued)

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[34] YYYY = User-Requested Year

Table 5-9 (continued)
CASPER QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months) for Each Requested Report End Date

Requested Report End Date[35]	CASPER QM Report Calculation Month	Data Included in the Requested Report End Date
06/30/2018 (Quarter 2, 2018)	May 2018	July 1, 2016 through April 30, 2018
	June 2018	July 1, 2016 through May 31, 2018
	July 2018	July 1, 2016 through June 30, 2018
09/30/2018 (Quarter 3, 2018)	August 2018	October 1, 2016 through July 31, 2018
	September 2018	October 1, 2016 through August 31, 2018
	October 2018	October 1, 2016 through September 30, 2018
12/31/2018 (Quarter 4, 2018)	November 2018	January 1, 2017 through October 31, 2018
	December 2018	January 1, 2017 through November 30, 2018
	January 2019	January 1, 2017 through December 31, 2018
03/31/2019 (Quarter 1, 2019)	February 2019	April 1, 2017 through January 31, 2019
	March 2019	April 1, 2017 through February 28, 2019
	April 2019	April 1, 2017 through March 31, 2019
06/30/2019 (Quarter 2, 2019)	May 2019	July 1, 2017 through April 30, 2019
	June 2019	July 1, 2017 through May 31, 2019
	July 2019	July 1, 2017 through June 30, 2019
09/30/2019 (Quarter 3, 2019)	August 2019	October 1, 2017 through July 31, 2019
	September 2019	October 1, 2017 through August 31, 2019
	October 2019	October 1, 2017 through September 30, 2019
12/31/2019 (Quarter 4, 2019)	November 2019	January 1, 2018 through October 31, 2019
	December 2019	January 1, 2018 through November 30, 2019
	January 2020	January 1, 2018 through December 31, 2019

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[35] YYYY = User-Requested Year

Table 5-10
**CASPER QM Reports: Patient Influenza Vaccine Data Included in the Cumulative Rate
for Each Requested Report End Date**

Requested Report End Date[36]	CASPER QM Report Calculation Month	Influenza Season[37]	Data Included from User-Requested Year[37]
03/31/YYYY (Quarter 1, YYYY)	February	July XXXX – June YYYY	July 1, XXXX – January 31, YYYY
	March	July XXXX – June YYYY	July 1, XXXX – February 28, YYYY
	April	July XXXX – June YYYY	July 1, XXXX – March 31, YYYY
06/30/YYYY (Quarter 2, YYYY)	May	July XXXX – June YYYY	July 1, XXXX – April 30, YYYY
	June	July XXXX – June YYYY	July 1, XXXX – May 31, YYYY
	July	July XXXX – June YYYY	July 1, XXXX – June 30, YYYY
09/30/YYYY (Quarter 3, YYYY)	August	July YYYY – June ZZZZ	July 1, YYYY – July 31, ZZZZ
	September	July YYYY – June ZZZZ	July 1, YYYY – August 31, ZZZZ
	October	July YYYY – June ZZZZ	July 1, YYYY – September 30, ZZZZ
12/31/YYYY (Quarter 4, YYYY)	November	July YYYY – June ZZZZ	July 1, YYYY – October 31, ZZZZ
	December	July YYYY – June ZZZZ	July 1, YYYY – November 30, ZZZZ
	January	July YYYY – June ZZZZ	July 1, YYYY – December 31, ZZZZ

Please note that the Influenza season begins on July 1 of a given year and ends on June 30 of the subsequent year. Associated Influenza Vaccination Season begins on October 1 of a given year and ends on March 31 of the subsequent year.

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[36] YYYY = User-Requested Year

[37] XXXX = The year prior to the user-requested year; ZZZZ = The year after the user-requested year. Note that the XXXX-YYYY influenza season ends on June 30th, and the new YYYY-ZZZZ influenza season starts on July 1st.

Section 5.3: Measure Calculations During the Transition from LTCH CARE Data Set V3.00 to LTCH CARE Data Set V4.00

Since the LTCH CARE Data Set have separate admission and discharge assessments, matching is required to create patient stays used for measure calculations. This presents a unique issue during the time of implementation when the old assessment is filled out on admission and the new assessment is filled out on discharge.

For stays with an admission prior to the implementation date of July 1, 2018 and discharges on or after July 1, 2018, the measure calculation will use the old measure specifications regarding items related to the admission assessment and the new measure specifications regarding items related to the discharge assessment. Two examples below illustrate this instruction:

- Patient admitted to LTCH on June 15, 2018 and discharged on July 15, 2018
  - Admission assessment would be LTCH CARE Data Set V3.00
  - Discharge assessment would be LTCH CARE Data Set V4.00
  - Specifications would be based on QM specifications in both the QM User's Manual V2.0 for references to the admission assessment and QM User's Manual V3.0 for references to the discharge assessment.
    - Rationale: The patient was admitted before July 1 using LTCH CARE Data Set V3.00, which is associated with the QM User's Manual V2.0 instructions.

- Patient admitted to LTCH on July 1, 2018 and discharged on July 30, 2018
  - Admission assessment would be LTCH CARE Data Set V4.00
  - Discharge assessment would be LTCH CARE Data Set V4.00
  - Specifications would be based on QM specifications in QM User's Manual V3.0
    - Rationale: Both the admission and discharge assessments use LTCH CARE Data Set V4.00 and the specifications refer to QM User's Manual V3.0.

For the CASPER reports, measure calculations are based on the discharge date. In the two examples above, both patient stays would be included in Quarter 3, 2018 since the discharge dates are between July 1 and September 30.

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Chapter 6
Measure Calculations for Assessment-Based Quality Measures (LTCH CARE Data Set)

The purpose of this chapter is to present the measure calculation criteria for the assessment-based quality measures that are included in the LTCH QRP. In this chapter, each section is specific to an assessment-based quality measure. Within each section the CASPER Review and Correct Report measure calculations are presented first, followed by the CASPER QM Report measure calculations. If the measure is risk-adjusted for the QM Reports, then additional details regarding the risk-adjusted calculations are provided; otherwise, the Review and Correct Report calculations can be used to calculate the QM Report measure calculation. **Prior to the measure specifications steps in Chapter 6, please refer to Chapter 1, Section 1.2 on instructions to define the patient stay for the QM sample and Chapter 4 for the record selection criteria.**

Section 6.1: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)

CASPER Review and Correct Report Measure Calculations for Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01)

For the Review and Correct Reports, only the facility-level observed score is computed; the facility's risk-adjusted score is not reported. Using the definitions in *__Table 7-1__*, the following steps are used to calculate the quality measure. [38]

1. **Identify excluded patient stays** (steps 1.1 through 1.2).

    1.1 Patient stay is excluded if data on new or worsened Stage 2, 3, and 4 pressure ulcers are missing on the planned or unplanned discharge assessment; i.e., M0800A = [-] and M0800B = [-] and M0800C = [-].

    1.2 Patient stay is excluded if the patient died during the LTCH stay; i.e., A0250 = [12].

2. **Determine the denominator count**. Determine the total number of patient stays with both an admission and discharge LTCH CARE Data Set assessment with the discharge date in the measure target period, which do not meet the exclusion criteria.

3. **Determine the numerator count**. Determine the total number of patient stays for which the discharge assessment indicates the presence of one or more new or worsened pressure ulcers (Stage 2 through 4) compared to admission:

    - Stage 2 (M0800A) > 0, *or*
    - Stage 3 (M0800B) > 0, *or*

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[38] Some of the items used in the calculation of this measure will not be included in LTCH CARE Data Set Version 4.00. This measure will be included in review and correct reports until measure is removed per FY 2018 LTCH/IPPS Final Rule.

- Stage 4 (M0800C) > 0

4. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 3 by the result of step 2.

5. Calculate the rounded percent value.

   5.1 Multiply the facility-level observed score by 100 to obtain a percent value

   5.2 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.

   5.3 Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01)

This measure is risk-adjusted for the CASPER QM Reports and therefore an observed (i.e., not risk-adjusted) and a risk-adjusted value are reported. Using the definitions in **_Table 7-1_**, the following steps are used to calculate the measure.

1. **Calculate the facility-level observed score** (steps 1.1 through 1.2).

   1.1 To calculate the facility-level observed score, complete steps 1 – 4 from **Chapter 6**, **Section 6.1**, "CASPER Review and Correct Report Measure Calculations" for NQF #0678.

   1.2 Do not multiply by 100 or round to the nearest first decimal place. All rounding will be done at the end of the measure calculation.

2. Calculate the national average observed score[39] (steps 2.1 through 2.3).

   2.1 After excluding patient stays based on the criteria listed in **_Table 7-1_**, these patient stays become the denominator for the national average observed score.

   2.2 Identify patient stays in the denominator of the national average observed score with pressure ulcers that are new or worsened based on the criteria in **_Table 7-1_**. These records comprise the numerator of the national average observed score.

   2.3 Divide the numerator (2.2) by the denominator (2.1) to calculate the national average observed score.

   *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 by these documents.*

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[39] The national average observed score is calculated using the patient stay as the unit of analysis.

3. Calculate the facility-level expected score for each patient (steps 3.1 through 3.3).

3.1   Determine presence or absence of the pressure ulcer covariates for each patient.

3.2   Using the covariate definitions in **_Table 7-1_**, assign covariate values (COV), either '0' for covariate condition not present or '1' for covariate condition present, for each patient for each of the four covariates as reported on the admission assessment.

3.3   Calculate the expected score for each patient using the following formula:

$$\text{[1] Patient-level expected score} = \frac{1}{[1+e^{-x}]}$$

Where:

- e is the base of natural logarithms

- X is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below)

$$\text{[2] } X = \beta_0 + \beta_1(COV_1) + \beta_2(COV_2) + \beta_3(COV_3) + \beta_4(COV_4)$$

Where:

- X identifies if patient is part of the numerator count (i.e., triggering the quality measure: 1 = yes, 0 = no).

- β_0 is the logistic regression constant or intercept.

- β_1 is the logistic regression coefficient for the first covariate "functional limitation" and COV_1 is the patient-level covariate value.

- β_2 is the logistic regression coefficient for the second covariate "bowel incontinence," and COV_2 is the patient level covariate value.

- β_3 is the logistic regression coefficient for the third covariate "diabetes or peripheral vascular disease/peripheral artery disease (PVD/PAD)" and COV_3 is the patient-level covariate value.

- β_4 is the logistic regression coefficient for the fourth covariate "low body mass index (BMI)" and COV_4 is the patient-level covariate value.

See **Appendix A**, **_Table A-2_** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients.[40] The regression constant and coefficients are values obtained through statistical logistic regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in **_Table A-2_** and the Risk-Adjustment Appendix File.

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[40] 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. Calculate the mean facility-level expected score (step 4.1).

    4.1   Once patient-level expected scores have been calculated, calculate the mean facility-level expected quality measure score as the mean of the facility's patient-level expected scores.

5. Calculate the facility-level risk-adjusted score (steps 5.1 through 5.3).

    5.1   Calculate the facility-level risk-adjusted score based on the:

- Facility-level observed quality measure score (steps 1.1 through 1.2)

- Mean facility-level expected quality measure score (step 4.1)

- National average observed quality measure score (steps 2.1 through 2.4)

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

$$[\textbf{3}]\ \text{Adj}\ =\ \frac{1}{1+\ e^{-y}}$$

Where:

- *e* is the base of natural logarithms

- *Adj* is the facility-level risk-adjusted quality measure score

- *y* is the product of the following formula:

$$[\textbf{4}]\ y = ln\left(\frac{Obs}{1-Obs}\right) - ln\left(\frac{Exp}{1-Exp}\right) + ln\left(\frac{Nat}{1-Nat}\right)$$

Where:

- *Obs* is the facility-level observed quality measure score

- *Exp* is the mean facility-level expected quality measure score

- *Nat* is the national average observed quality measure score

- *Ln* indicates a natural logarithm

    5.2   Multiply the risk-adjusted score (Adj) by 100 and round the percent value to one decimal place.

        5.2.1   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.

        5.2.2   Drop all of the digits following the first decimal place.

    5.3   Facility-level recoding instructions.

        5.3.1   If the facility-level observed score (step 1) equals 0, then the facility-level observed percent and the facility-level risk-adjusted percent values are set to 0.0.

        5.3.2   If the facility-level observed score (step 1) equals 1, then the facility-level observed percent and the facility-level risk-adjusted percent values are set to 100.0.

Section 6.1.A: Transition of the Pressure Ulcer Quality Measures

Data collection for the measure Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01) will stop on June 30, 2018 and data collection for the replacement measure, Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01), will begin on July 1, 2018.[41] The measure Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01) will continue to be publicly reported on the Compare website until new quarterly data is no longer available to report. The replacement measure, Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01), will be publicly reported on the Compare website by October 2020. The two measures will not be publicly reported on the Compare website at the same time. Additionally, the transition for the CASPER reports is similar. See *Table 6-1* for additional information regarding the data collection and CASPER report display schedule:

Table 6-1
Data Collection and CASPER Report Display Schedule for the Pressure Ulcer Measures

Pressure Ulcer Measure	Data Collection	Review and Correct Reports	QM Reports
Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01)	Last Quarter of Data Collection: Q2 2018 (04/01/2018 – 06/30/2018)	Last Quarter End Date Display: Q2 2018 (07/01/2017 – 06/30/2018)	Last Report End Date Display: 06/30/2018 (07/01/2017 – 06/30/2018)
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/ Injury (CMS ID: L021.01)	Initial Quarter of Data Collection: Q3 2018 (07/01/2018 – 09/30/2018)	Initial Quarter End Date Display: Q1 2019 (01/01/2019 – 03/31/2019)	Initial Report End Date Display: 06/30/2019 (07/01/2018 – 06/30/2019)

There are six major differences in the two pressure ulcer measures and associated items. Due to differences between the measures, coefficient values and national mean values differ between the measures. These values will be reported in Appendix A and the associated Risk-Adjustment Appendix File.

1. The measures use different items. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.01) is calculated using discharge M0800 items, while the Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01) is calculated using discharge M0300 items. As of October 1, 2018, the M0800 items will no longer be collected as part of the LTCH CARE Data Set.

2. The new measure is calculated using a subtraction method to determine inclusion in the numerator. Inclusion in the numerator of Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01) is determined by subtracting discharge item

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[41] This measure was finalized in the FY 2018 IPPS/LTCH PPS final rule (82 FR 38433-38439).

pairs for each type of pressure ulcer (e.g., Stage 2 [(M0300B1) - (M0300B2)] >0, Stage 3 [(M0300C1) - (M0300C2)] >0).

3. The new measure includes unstageable pressure ulcers in the measure numerator. The numerator for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01) includes discharge items to include new or worsened unstageable pressure ulcers (i.e., Unstageable – Non-removable dressing/device (M0300E1 and M0300E2); Unstageable – Slough and/or eschar (M0300F1 and M0300F2) and Unstageable – Deep tissue injury (M0300G1 and M0300G2)

4. One of the exclusion criteria for the new measure is different, to reflect changes in the data needed to calculate the measure. For the Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: I001.02) measure, patient stays were excluded if data on new or worsened Stage 2, 3, and 4 were missing at discharge, based on discharge M0800 items. For the Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01) measure, this is expanded to add unstageable pressure ulcers, including deep tissue injuries, missing at discharge, and is based on discharge M0300 items.

5. Measure item names have changed. The items to be collected starting October 1, 2018 reflect current pressure ulcer terminology. The term "injuries" has been added to items: M0300, M0300A, M0300E–M0300E2, and M0300G–M0300G2 and the term "suspected deep tissue injury in evolution" has been replaced with "deep tissue injury" in items M0300G and M0300G1.

6. In both pressure ulcer measures, GG0170C (Lying to Sitting on Side of Bed) at admission was used to determine the functional limitation covariate for each patient stay. Following testing, the response options included in each covariate value (1 [yes], or 0 [no]) are different for the measure Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01).

Section 6.2: Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

CASPER Review and Correct Report Measure Calculations for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

For the Review and Correct Reports, only the facility-level observed score is computed; the facility's risk-adjusted score is not reported. Using the definitions in *Table 7-2*, the following steps are used to calculate the quality measure.

1. **Identify excluded patient stays** (steps 1.1 through 1.2).

   1.1 Patient stay is excluded if data on new or worsened Stage 2, 3, 4, and unstageable pressure ulcers, including deep tissue injuries, are missing on the planned or unplanned discharge assessment; i.e., (M0300B1 = [-] or M0300B2 = [-]) and (M0300C1 = [-] or M0300C2 = [-]) and (M0300D1= [-] or (M0300D2= [-]) and (M0300E1= [-] or M0300E2=[-]) and (M0300F1= [-] or M0300F2=[-]) and (M0300G1= [-] or M0300G2=[-]).

   1.2 Patient stay is excluded if the patient died during the LTCH stay; i.e., A0250 = [12].

2. **Determine the denominator count**. Determine the total number of patient stays with both an admission and discharge LTCH CARE Data Set assessment with the discharge date in the measure target period, which do not meet the exclusion criteria.

3. **Determine the numerator count**. Determine the total number of patient stays for which the discharge assessment indicates the presence of one or more new or worsened pressure ulcers (Stage 2-4, or unstageable pressure ulcers due to slough/eschar, non-removable dressing/device, or deep tissue injury) compared to admission:

   - Stage 2 (M0300B1) - (M0300B2) > 0, OR

   - Stage 3 (M0300C1) - (M0300C2) > 0, OR

   - Stage 4 (M0300D1) - (M0300D2) > 0, OR

   - Unstageable – Non-removable dressing/device (M0300E1) - (M0300E2) > 0, OR

   - Unstageable – Slough and/or eschar (M0300F1) - (M0300F2) > 0, OR

   - Unstageable – Deep tissue injury (M0300G1) - (M0300G2) > 0

4. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 3 by the result of step 2.

5. Calculate the rounded percent value.

   5.1 Multiply the facility-level observed score by 100 to obtain a percent value.

   5.2 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.

   5.3 Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

This measure is risk-adjusted for the CASPER QM Reports and therefore an observed (i.e., not risk-adjusted) and a risk-adjusted value are reported. Using the definitions in *Table 7-2*, the following steps are used to calculate the measure.

1. **Calculate the facility-level observed score** (steps 1.1 through 1.2).

    1.1   To calculate the facility-level observed score, complete steps 1 – 4 from Chapter 6, Section 6.2, "CASPER Review and Correct Report Measure Calculations" for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury.

    1.2   Do not e round to the nearest first decimal place. All rounding will be done at the end of the measure calculation.

2. Calculate the national average observed score[42] (steps 2.1 through 2.3).

    2.1   After excluding patient stays based on the criteria listed in *Table 7-2*, these patient stays become the denominator for the national average observed score.

    2.2   Identify patient stays in the denominator of the national average observed score with pressure ulcers that are new or worsened based on the criteria in *Table 7-2*. These records comprise the numerator of the national average observed score.

    2.3   Divide the numerator (2.2) by the denominator (2.1) to calculate the national average observed score.

    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 by these documents.

3. **Calculate the facility-level expected score for each patient** (steps 3.1 through 3.3).

    3.1   Determine presence or absence of the pressure ulcer covariates for each patient.

    3.2   Using the covariate definitions in *Table 7-2*, assign covariate values (COV), either '0' for covariate condition not present or '1' for covariate condition present, for each patient for each of the four covariates as reported on the admission assessment.

    3.3   Calculate the expected score for each patient using the following formula:

$$[1] \; \textit{Patient-level expected score} = \frac{1}{[1+e^{-x}]}$$

Where:

- *e* is the base of natural logarithms

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[42] The national average observed score is calculated using the patient stay as the unit of analysis.

- **X** is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below)

$$[2]\ X = \beta_0 + \beta_1(COV_1) + \beta_2(COV_2) + \beta_3(COV_3) + \beta_4(COV_4)$$

Where:

- **X** identifies if patient is part of the numerator count (i.e., triggering the quality measure: 1 = yes, 0 = no).

- β_0 is the logistic regression constant or intercept.

- β_1 is the logistic regression coefficient for the first covariate "functional limitation" and COV_1 is the patient-level covariate value.

- β_2 is the logistic regression coefficient for the second covariate "bowel incontinence," and COV_2 is the patient level covariate value.

- β_3 is the logistic regression coefficient for the third covariate "diabetes or peripheral vascular disease/peripheral artery disease (PVD/PAD)" and COV_3 is the patient-level covariate value.

- β_4 is the logistic regression coefficient for the fourth covariate "low body mass index (BMI)" and COV_4 is the patient-level covariate value.

See **Appendix A**, **_Table A-3_** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients.[43] The regression constant and coefficients are values obtained through statistical logistic regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in **_Table A-3_** and the Risk-Adjustment Appendix File.

4. Calculate the mean facility-level expected score (step 4.1).

   4.1 Once patient-level expected scores have been calculated, calculate the mean facility-level expected quality measure score as the mean of the facility's patient-level expected scores.

5. Calculate the facility-level risk-adjusted score (steps 5.1 through 5.3).

   5.1 Calculate the facility-level risk-adjusted score based on the:

   - Facility-level observed quality measure score (steps 1.1 through 1.2)

   - Mean facility-level expected quality measure score (step 4.1)

   - National average observed quality measure score (steps 2.1 through 2.3)

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

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[43] 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.

$$[3]\ Adj\ =\ \frac{1}{1\ +\ e^{-y}}$$

Where:

- *e* is the base of natural logarithms

- *Adj* is the facility-level risk-adjusted quality measure score

- *y* is the product of the following formula:

$$[4]\ y\ =\ ln\left(\frac{Obs}{1-Obs}\right) - ln\left(\frac{Exp}{1-Exp}\right) + ln\left(\frac{Nat}{1-Nat}\right)$$

Where:

- *Obs* is the facility-level observed quality measure score

- *Exp* is the mean facility-level expected quality measure score

- *Nat* is the national average observed quality measure score

- *Ln* indicates a natural logarithm

5.2 Multiply the risk-adjusted score (Adj) by 100 and round the percent value to one decimal place.

    5.2.1 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.

    5.2.2 Drop all of the digits following the first decimal place.

5.3 Facility-level recoding instructions.

    5.3.1 If the facility-level observed score (step 1) equals 0, then the facility-level observed percent and the facility-level risk-adjusted percent values are set to 0.0.

    5.3.2 If the facility-level observed score (step 1) equals 1, then the facility-level observed percent and the facility-level risk-adjusted percent values are set to 100.0.

Section 6.3: Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

CASPER Review and Correct Report Measure Calculations for Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report measure calculation and the CASPER QM report measure calculation. Using the measure specifications from *Table 7-3*, the following steps are used to calculate the measure.

1. **Identify excluded patient stays** (step 1.1): Patient stay is excluded if the number of falls with major injury was not coded (J1900C = [-]) for the planned, unplanned, and expired discharge assessments.

2. **Determine the denominator count**. Determine the total number of patient stays with a planned, unplanned or expired discharge LTCH CARE Data Set assessment; i.e., A0250 = [10, 11 and 12] in the measure target period, which do not meet the exclusion criteria.

3. **Determine the numerator count**. Determine the total number of patient stays with planned, unplanned or expired discharge assessments during the selected time window that recorded one or more falls that resulted in major injury (J1900C = [1] or [2]).

4. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; divide the result of step 3 by the result of step 2 and then multiply by 100 to obtain a percent value.

5. Round the percent value to one decimal place.

   5.1   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.

   5.2   Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01)

As previously stated, this measure is not risk-adjusted or stratified. The steps to calculate the CASPER Review and Correct Report can be applied to calculate the CASPER QM Report. Follow the steps provided above for the CASPER QM Report measure calculations for the Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674) (CMS ID: L012.01).

Section 6.4: Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)

CASPER Review and Correct Report Measure Calculations for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.01)

For the Review and Correct Reports, only the facility-level observed score is computed; the facility's risk-adjusted score is not reported. Using the definitions in *Table 7-4*, the following steps are used to calculate the measure.

1. **Calculate the admission mobility score** (steps 1.1 through 1.2) using the admission Mobility items and valid codes, identified below:

    The eight admission Mobility 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
    - GG0170J1. Walk 50 feet with two turns
    - GG0170K1. Walk 150 feet

    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 – Patient 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 GG0170K1)
    - - – Not assessed/no information

    1.1 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, then recode to 01 and use this code as the score.

    1.2 Sum the scores of the eight admission Mobility items to create an admission mobility score for each patient stay. The admission mobility score can range from 8 – 48, with a

higher score indicating greater functional ability. A score of 48 represents a score of 6 (independence) for all 8 Mobility items.

2. **Calculate the discharge mobility score** (steps 2.1 through 2.2) using the discharge Mobility items and valid codes, identified below:

The eight discharge Mobility 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
- GG0170J3. Walk 50 feet with two turns
- GG0170K3. Walk 150 feet

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 – Patient 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 GG0170J3 through GG0170K3)
- - – Not assessed/no information

2.1 To obtain the 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, then recode to 01 and use this code as the score.

2.2 Sum the scores of the eight discharge Mobility items to create a discharge mobility score for each patient stay. The discharge mobility score can range from 8 – 48, with a higher score indicating greater functional ability. A score of 48 represents a score of 6 (independence) for all 8 Mobility items.

3. **Identify excluded patient stays**. Stays from step 1 are excluded if any of the following are true (step 3.1 through 3.7).

3.1 Incomplete stays:

3.1.1 Patient was discharged (A2110) to hospital emergency department (A2110 = [04]), short-stay acute hospital (A2110 = [05]), or psychiatric hospital or unit (A2110 = [08]).

3.1.2   Patient transferred to another LTCH facility (A2110 = [06]).

3.1.3   Patient left the LTCH against medical advice (A2110 = [12]).

3.1.4   Patient had an unplanned discharge or expired (A0250 = [11, 12]).

3.1.5   Length of stay is less than 3 days: Discharge Date (A0270) – Admission Date (A0220) < 3 days.

3.2   Patient is younger than 21 years: Truncate (Admission Date (A0220) – Birth Date (A0900)). Use exact values in calculating age; do not round to nearest whole number.

3.3   Patient is discharged to hospice (A2110 = [10]).

3.4   Patient is in a coma, persistent vegetative state, complete tetraplegia, or locked-in syndrome.

     3.4.1   Items used to identify these patient records (on admission assessment):

- Comatose (B0100 = [1])
- Complete Tetraplegia (I5101 = [1])
- Locked-In State (I5460 = [1])
- Severe Anoxic Brain Damage, Cerebral Edema, or Compression of Brain (I5470 = [1])

3.5   Patient has a progressive neurological condition, including amyotrophic lateral sclerosis, multiple sclerosis, Parkinson's disease, or Huntington's chorea.

     3.5.1   Items used to identify these patient records (on admission assessment):

- Multiple Sclerosis (I5200 = [1])
- Huntington's Disease (I5250 = [1])
- Parkinson's Disease (I5300 = [1])
- Amyotrophic Lateral Sclerosis (I5450 = [1])

3.6   Patient is coded as independent on all Mobility items on admission.

     3.6.1   Items used to identify these patient records:

- Roll left and right (GG0170A1 = [06])
- Sit to lying (GG0170B1 = [06])
- Lying to sitting on side of bed (GG0170C1 = [06])
- Sit to stand (GG0170D1 = [06])
- Chair/bed-to-chair transfer (GG0170E1 = [06])
- Toilet transfer (GG0170F1 = [06])
- Walk 50 feet with two turns (GG0170J1 = [06])
- Walk 150 feet (GG0170K1 = [06])

4. **Identify and count the included patient stays (target population)**. Calculate the total number of patient stay records with the discharge date in the measure target period and require ventilator support at the time of LTCH admission. Patients who do not require ventilator support are excluded from this measure. Identify patients requiring invasive ventilator support at the time of LTCH admission using the following items:

- Invasive Mechanical Ventilation Support: weaning (O0150A = [1]) or
- Invasive Mechanical Ventilation Support: non-weaning (O0150A = [2])

5. **Calculate the observed change in mobility score for each patient stay**. For each patient stay included records, calculate the difference between the discharge mobility score (step 2) and admission mobility score (step 1) for each patient stay to create a change in mobility score for each patient.

6. **Calculate the facility-level average observed change in mobility score**. Calculate an average observed change in mobility score for each LTCH as the mean of the observed change in mobility scores.

7. Round the percent value to one decimal place.

   7.1   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.

   7.2   Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.01)

This measure is risk-adjusted for the CASPER QM Reports. Using the definitions in *Table 7-4*, the following steps are used to calculate the measure.

1. Calculate the facility-level average observed change in mobility score (steps 1.1 through 1.2).

   1.1   To calculate the facility-level average observed change in mobility score, complete steps 1 – 6 from **Chapter 6**, **Section 6.4**, "CASPER Review and Correct Report Measure Calculations for NQF #2632."

   1.2   Do not round to the nearest first decimal place. All rounding will be done at the end of the measure calculation

2. **Calculate the national average change in mobility score**[44] as the mean of the observed change in mobility scores for all patient stays calculated from steps 1 – 5 from **Chapter 6, Section 6.4**. This will be used in step 4 to calculate the risk-adjusted average change in mobility score.

   *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 by these documents.*

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[44] The national average observed score is calculated using the patient stay as the unit of analysis.

3. **Calculate the facility-level expected change in mobility score** (steps 3.1 through 3.2).

3.1   For each patient stay record, use the intercept and regression coefficients to calculate the expected change in mobility score using the Generalized Linear Model (GLM) formula below

[1] *Expected change in self-care score = $\beta_0 + \beta_1(COV_1) + \ldots + \beta_n(COV_n)$*

Where:

- *Expected change in mobility score* identifies the expected change in mobility score in ventilated patients for each LTCH as the mean of the expected change in mobility scores for all patients included in the measure

- β_0 is the GLM regression constant or 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 constant and coefficients as well as detailed LTCH CARE Data Set coding for each risk adjustor.[45] The regression constant and regression coefficients are values obtained through GLM regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in *Table A-4* and the Risk-Adjustment Appendix File.

3.2   Calculate an average expected change in mobility score for each LTCH as the mean of the expected change in mobility scores for all patients in the facility.

4. Calculate the risk-adjusted average change in mobility score (steps 4.1 through 4.2)

4.1   Divide the facility-level average observed change in mobility score (step 1) by the facility-level average expected change in mobility score (step 3) to create an observed to expected ratio.

4.2   Multiply each LTCH's ratio by the national average change in mobility score (step 2). This is the risk-adjusted average mobility score.

5. Round the percent value to one decimal place.

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

5.2   Drop all of the digits following the first decimal place.

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[45] 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.

Section 6.5: 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: L009.02)

CASPER Review and Correct Report Measure Calculations for 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: L009.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report measure calculation and the CASPER QM Report measure calculation. Using the definitions from *Table 7-5*, the following steps are used to calculate the measure.

1. Identify patient stay records as being complete or incomplete stay records (Steps 1.1 and 1.2).

   1.1   Patients with **incomplete stay records** are identified based on:

      1.1.1   Reason for Assessment (A0250)
              11 = Unplanned discharge
              12 = Expired

      OR

      1.1.2   Discharge Location (A2110)
              04 = Hospital emergency department
              05 = Short-stay acute care hospital (IPPS)
              06 = Long-term care hospital (LTCH)
              08 = Psychiatric hospital or unit
              12 = Discharged Against Medical Advice

      OR

      1.1.3   [A0270. Discharge Date] minus [A0220. Admission Date]) < 3 days.

   1.2   Patient stays not meeting the criteria for incomplete patient stays will be considered **complete patient stays.**

2. Both types of patient stay records are included in the denominator, but the specifications vary by complete or incomplete stays for the numerator.

   2.1   **Complete patient stays**. For patients with complete patient stays, each functional assessment item listed below must have a valid numeric score indicating the patient's status [01 – 06], or a valid code indicating the activity was not attempted (i.e. GG0130A1 = [07, 09, 10, 88]). All three of the following criteria are required for inclusion in the numerator:

      2.1.1   A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (e.g. GG0130A1 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the admission assessment. All admission functional assessment items (refer to 2.3) must be completed; and

2.1.2 A valid numeric score or a valid code indicating the activity was not attempted (e.g. GG0130A2 = [07, 09, 10, 88]) for a discharge goal indicating the patient's expected level of independence, for at least one Self-Care or Mobility item on the admission assessment (refer to 2.4); and

2.1.3 A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (e.g. GG0130A3 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the discharge assessment. All discharge functional assessment items (refer to 2.5) must be completed.

2.2 **Incomplete patient stays**. For patients with incomplete patient stays, collection of discharge functional status data might not be feasible. Each functional assessment item listed below must have a valid numeric score indicating the patient's status [01 – 06], or a valid code indicating the activity was not attempted (e.g. GG0130A1 = [07, 09, 10, 88]). The following two criteria are required for inclusion in the numerator:

2.2.1 A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (i.e. GG0130A1 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the admission assessment. All admission functional assessment items (refer to 2.3) must be completed; and

2.2.2 A valid numeric score or a valid code indicating the activity was not attempted (e.g. GG0130A2 = [07, 09, 10, 88]) for a discharge goal indicating the patient's expected level of independence, for at least one Self-Care or Mobility item on the admission assessment (refer to 2.4).

2.3 Admission Functional Performance items included in this measure:

The Self-Care (GG0130) items are:

- GG0130A1. Eating
- GG0130B1. Oral hygiene
- GG0130C1. Toileting hygiene
- GG0130D1. Wash upper body

The Mobility (GG0170) items 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
- GG0170I1. Walk 10 feet

For patients who are walking, as indicated by GG0170I1 = 01, 02, 03, 04, 05, or 06, include items:

- GG0170J1. Walk 50 feet with two turns
- GG0170K1. Walk 150 feet

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

For patients who use a wheelchair as indicated by GG0170Q1=1, include items:

- GG0170R1. Wheel 50 feet with two turns
- GG0170RR1. Indicate the type of wheelchair/scooter used
- GG0170S1. Wheel 150 feet
- GG0170SS1. Indicate the type of wheelchair/scooter used

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

The following valid scores/codes for the Self-Care (GG0130) and Mobility (GG0170) admission performance items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern

Valid codes that indicate the type of wheelchair used (GG0170RR1):

- 1 – Manual
- 2 – Motorized
- ^ – Skip pattern

2.4   Other admission assessment items included in this measure:

The Hearing, Speech, and Vision (Section B) items are:

For patients who are comatose as indicated by B0100 = 1, BB0700, BB0800, and C1610 are skipped.

- BB0700. Expression of Ideas and Wants
- BB0800. Understanding Verbal Content

Valid codes for Expression of Ideas and Wants (BB0700) are:

- 4 – Expresses without difficulty
- 3 – Expresses with some difficulty
- 2 – Frequently exhibits difficulty with expressing needs and ideas
- 1 – Rarely/Never expresses or is very difficult to understand
- ^ – Skip pattern

Valid codes for Understanding Verbal Content (BB0800) are:

- 4 – Understands
- 3 – Usually understands
- 2 – Sometimes understands
- 1 – Rarely/Never understands
- ^ – Skip pattern

The Signs and Symptoms of Delirium (Section C) items are:

- C1610A. AND C1610B. Acute Onset and Fluctuating Course
- C1610C. Inattention
- C1610D. Disorganized Thinking
- C1610E1. AND C160E2. Altered Level of Consciousness

Valid codes for Signs and Symptoms of Delirium (C1610) items are:

- 0 – No
- 1 – Yes
- ^ – Skip pattern

The Bladder and Bowel (Section H) item is:

- H0350. Bladder Continence

Valid codes for Bladder Continence (H0350) are:

- 0 – Always continent
- 1 – Stress incontinence only
- 2 – Incontinent less than daily
- 3 – Incontinent daily
- 4 – Always incontinent
- 5 – No urine output
- 9 – Not applicable

2.5 Discharge Goal items reported on the admission assessment included in this measure (a minimum of one goal must be reported):

The Self-Care (GG0130) items are:

- GG0130A2. Eating
- GG0130B2. Oral hygiene
- GG0130C2. Toileting hygiene
- GG0130D2. Wash upper body

The Mobility (GG0170) items are:

- GG0170A2. Roll left and right
- GG0170B2. Sit to lying
- GG0170C2. Lying to sitting on side of bed
- GG0170D2. Sit to stand
- GG0170E2. Chair/bed-to-chair transfer
- GG0170F2. Toilet transfer

- GG0170I2. Walk 10 feet
- GG0170J2. Walk 50 feet with two turns
- GG0170K2. Walk 150 feet
- GG0170R2. Wheel 50 feet with two turns
- GG0170S2. Wheel 150 feet

The following valid scores/codes for the Self-Care (GG0130) and Mobility (GG0170) discharge goal items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns

2.6   Discharge Functional Performance items included in this measure:

- The Self-Care (GG0130) items are:
- GG0130A3. Eating
- GG0130B3. Oral hygiene
- GG0130C3. Toileting hygiene
- GG0130D3. Wash upper body

The Mobility (GG0170) items 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
- GG0170I3. Walk 10 feet

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

- GG0170J3. Walk 50 feet with two turns
- GG0170K3. Walk 150 feet

For patients who are not walking as indicated by GG0170I3= 07, 09, 10, or 88, GG0170J3 and GG0170K3 are skipped.

For patients who use a wheelchair as indicated by GG0170Q3=1, include items:

- GG0170S3. Wheel 150 feet
- GG0170SS3. Indicate the type of wheelchair/scooter used

For patients who do not use a wheelchair as indicated by GG0170Q3=0, GG0170R3, GG0170RR3, GG0170S3, and GG0170SS3 are skipped.

The following valid scores/codes for the Self-Care (GG0130) and Mobility (GG0170) discharge performance items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern

Valid codes for indicate the type of wheelchair/scooter used (GG0170RR3):

- 1 – Manual
- 2 – Motorized
- ^ – Skip pattern

2.7   Other discharge assessment items included in this measure:

The Hearing, Speech, and Vision (Section B) items are:

For patient who are comatose as indicated by B0100 = 1, BB0700, BB0800, and C1610 are skipped.

- BB0700. Expression of Ideas and Wants
- BB0800. Understanding Verbal Content

Valid codes for Expression of Ideas and Wants (BB0700) are:

- 4 – Expresses without difficulty
- 3 – Expresses with some difficulty
- 2 – Frequently exhibits difficulty with expressing needs and ideas
- 1 – Rarely/Never expresses or is very difficult to understand
- ^ – Skip pattern

Valid codes for Understanding Verbal Content (BB0800) are:

- 4 – Understands
- 3 – Usually understands
- 2 – Sometimes understands
- 1 – Rarely/Never understands
- ^ – Skip pattern

The Signs and Symptoms of Delirium (Section C) are:

- C1610A and C1610B. Acute Onset and Fluctuating Course
- C1610C. Inattention
- C1610D. Disorganized Thinking
- C1610E1 and C1610E2. Altered Level of Consciousness

Valid codes for Signs and Symptoms of Delirium (C1610) are:

- 0 – No
- 1 – Yes
- ^ – Skip pattern

The Bladder and Bowel (Section H) item is:

- H0350. Bladder Continence

Valid codes for Bladder Continence (H0350) are:

- 0 – Always continent
- 1 – Stress incontinence only
- 2 – Incontinent less than daily
- 3 – Incontinent daily
- 4 – Always incontinent
- 5 – No urine output
- 9 – No applicable

3. **Determine the denominator count**. Count the total number of patient stays with a discharge date in the measure target period.

4. **Determine the numerator count**. The numerator for this quality measure is the number of LTCH stays with complete functional assessment data and at least one self-care or mobility goal. The counts from step 2.1 (complete patient stays) and from step 2.2 (incomplete patient stays) are summed. This sum is the numerator count.

5. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 4 by the result of step 3 and then multiply by 100 to obtain a percent value.

6. Round the percent value to one decimal place.

6.1 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.

6.2 Drop all the digits following the first decimal place.

CASPER QM Report Measure Calculations for 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: L009.01)

As previously stated, this measure is not risk-adjusted or stratified. The steps to calculate the CASPER Review and Correct Report can be applied to calculate the CASPER QM Report. Follow the steps provided above for the CASPER QM Report measure calculation for the 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: L009.01).

Section 6.6: 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: L010.02)

CASPER Review and Correct Report Measure Calculations for 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: L010.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report and the CASPER QM report measure calculation. Using the definitions from *Table 7-6*, the following steps are used to calculate the measure.

1. Identify patient stay records as being complete or incomplete stay records (Steps 1.1 and 1.2).

   1.1 Patients with **incomplete stay records** are identified based on:

      1.1.1 Reason for Assessment (A0250)
            11 = Unplanned discharge
            12 = Expired

      OR

      1.1.2 Discharge Location (A2110)
            04 = Hospital emergency department
            05 = Short-stay acute care hospital (IPPS)
            06 = Long-term care hospital (LTCH)
            08 = Psychiatric hospital or unit
            12 = Discharged Against Medical Advice

      OR

      1.1.3 [A0270. Discharge Date] minus [A0220. Admission Date]) < 3 days.

   1.2 Patient stays not meeting the criteria for incomplete patient stays will be considered **complete patient stays.**

2. Both types of patient stay records are included in the denominator, but the specifications vary by complete or incomplete stays for the numerator.

   2.1 **Complete patient stays**. For patients with complete patient stays, each functional assessment item listed below must have a valid numeric score indicating the patient's status [01 – 06], or a valid code indicating the activity was not attempted (i.e. GG0130A1 = [07, 09, 10, 88]). All three of the following criteria are required for inclusion in the numerator:

      2.1.1 A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (i.e. GG0130A1 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the admission assessment. All admission functional assessment items (refer to 2.3 below) must be completed; and

2.1.2   A valid numeric score or a valid code indicating the activity was not attempted (e.g. GG0130A2 = [07, 09, 10, 88]) for a discharge goal indicating the patient's expected level of independence, for at least one Self-Care or Mobility item on the admission assessment (refer to 2.4 below); and

2.1.3   A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (i.e. GG0130A3 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the discharge assessment. All discharge functional assessment items (refer to 2.5 below) must be completed.

2.2   **Incomplete patient stays**. For patients with incomplete patient stays, collection of discharge functional status data might not be feasible. For the admission assessment, each functional assessment item listed below must have a valid numeric score indicating the patient's status [01 – 06], or a valid code indicating the activity was not attempted (e.g. GG0130A1 = [07, 09, 10, 88]). The following two criteria are required for inclusion in the numerator:

2.2.1   A valid numeric score indicating the patient's functional status [01 – 06], a valid code indicating the activity was not attempted (i.e. GG0130A1 = [07, 09, 10, 88]) for each of the functional assessment items, or a "^" indicating items affected by the skip pattern on the admission assessment. Complete admission functional assessment data (2.3 below); and

2.2.2   A valid numeric score or a valid code indicating the activity was not attempted (e.g. GG0130A2 = [07, 09, 10, 88]) for a discharge goal indicating the patient's expected level of independence, for at least one Self-Care or Mobility item on the admission assessment (refer to 2.4 below).

2.3   Admission Functional Performance items included in this measure:

The Self-Care (GG0130) items are:
- GG0130A1. Eating
- GG0130B1. Oral hygiene
- GG0130C1. Toileting hygiene

The Mobility (GG0170) items are:
- 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
- GG0170I1. Walk 10 feet

For patients who are walking, as indicated by GG0170I1 = 01, 02, 03, 04, 05, or 06, include items:

- GG0170J1. Walk 50 feet with two turns
- GG0170K1. Walk 150 feet

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

For patients who use a wheelchair as indicated by GG0170Q1=1, include items:

- GG0170R1. Wheel 50 feet with two turns
- GG0170RR1. Indicate the type of wheelchair/scooter used
- GG0170S1. Wheel 150 feet
- GG0170SS1. Indicate the type of wheelchair/scooter used

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

The following valid scores/codes for the Self-Care (GG0130) and Mobility (GG0170) admission performance items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern

Valid codes for the type of wheelchair/scooter used (GG0170RR1 and GG0170SS1):

- 1 – Manual
- 2 – Motorized
- ^ – Skip pattern

2.4   Discharge Goal items reported on the admission assessment included in this measure (a minimum of one goal must be reported) are:

The Self-Care (GG0130) items are:
- GG0130A2. Eating
- GG0130B2. Oral hygiene
- GG0130C2. Toileting hygiene
- GG0130D2. Wash upper body

The Mobility (GG0170) items are:
- GG0170A2. Roll left to right
- GG0170B2. Sit to lying
- GG0170C2. Lying to sitting on side of bed
- GG0170D2. Sit to stand
- GG0170E2. Chair/bed-to-chair transfer
- GG0170F2. Toilet transfer
- GG0170I2. Walk 10 feet
- GG0170J2. Walk 50 feet with two turns

- GG0170K2. Walk 150 feet
- GG0170R2. Wheel 50 feet with two turns
- GG0170S2. Wheel 150 feet

The following valid scores/codes for the Self-Care (GG0130) and Mobility (GG0170) discharge goal items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns

2.5 Discharge Functional Performance items included in this measure:

The Self-Care (GG0130) items are:

- GG0130A3. Eating
- GG0130B3. Oral hygiene
- GG0130C3. Toileting hygiene

The Mobility (GG0170) items are:

- 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
- GG0170I3. Walk 10 feet

For patients who are walking, as indicated by GG0170I3 = 01, 02, 03, 04, 05, or 06, include items:
- GG0170J3. Walk 50 feet with two turns
- GG0170K3. Walk 150 feet

For patients who are not walking as indicated by GG0170I3= 07, 09, 10, or 88, GG0170J3 and GG0170K3 are skipped.

For patients who use a wheelchair *as indicated by* GG0170Q3=1, *include items*:
- GG0170R3. Wheel 50 feet with two turns
- GG0170RR3. Indicate the type of wheelchair/scooter used
- GG0170S3. Wheel 150 feet
- GG0170SS3. Indicate the type of wheelchair/scooter used

For patients who do not use a wheelchair as indicated by GG0170Q3=0, GG0170R3, GG0170RR3, GG0170S3, and GG0170SS3 are skipped.

The following valid scores/codes for the Self-Care (GG0130) or Mobility (GG0170) discharge performance items are accepted for this quality measure:

- 06 – Independent
- 05 – Setup or clean-up assistance
- 04 – Supervision or touching assistance
- 03 – Partial/moderate assistance
- 02 – Substantial/maximal assistance
- 01 – Dependent
- 07 – Patient refused
- 09 – Not applicable
- 10 – Not attempted due to environmental limitations
- 88 – Not attempted due to medical condition or safety concerns
- ^ – Skip pattern

Valid codes for the type of wheelchair/scooter used (GG0170RR3 and GG0170SS3):

- 1 – Manual
- 2 – Motorized
- ^ – Skip pattern

3. **Determine the denominator count**. Count the total number of patient stays with a discharge date in the measure target period.

4. **Determine the numerator count**. The numerator for this quality measure is the number of LTCH stays with complete functional assessment data and at least one self-care or mobility goal. The counts from step 2.1 (complete patient stays) and from step 2.2 (incomplete patient stays) are summed. This sum is the numerator count.

5. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 4 by the result of step 3 and then multiply by 100 to obtain a percent value.

6. Round the percent value to one decimal place.

    6.1 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.

    6.2 Drop all the digits following the first decimal place.

CASPER QM Report Measure Calculations for 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: L010.01)

As previously stated, this measure is not risk-adjusted or stratified. The steps to calculate the CASPER Review and Correct Report can be applied to calculate the CASPER QM Report. Follow the steps provided above for the CASPER QM Report measure calculation for 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 (NQF #2631) (CMS ID: L010.01).

Section 6.7 Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

CASPER Review and Correct Report Measure Calculations for Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report measure calculation and the CASPER QM Report measure calculation. Additional steps are required for the CASPER QM Report measure calculations. Using the definitions from *Table 7-7*, the following steps are used to calculate the measure.

1. **Identify excluded patient stays** (steps 1.1 through 1.3).

   1.1 Calculate the patient's age at discharge. Calculate the age in days using the discharge date or the last date of the influenza vaccination season (March 31 of relevant year), whichever comes first in time. Use exact values in calculating age; do not round to nearest whole number.

   1.2 Exclude patient stays based on the following criteria:

      1.2.1 Patient's age is 179 days or less.

      1.2.2 Patient stay that ends with a patient's death (expired assessment (A0250 = [12])). This exclusion applies only to patients with an expired assessment who have a discharge date prior to 4/1/2016.[46]

2. **Determine the denominator count**. Select any patient stays with a discharge date within the influenza season (i.e., July 1 to June 30). From these selected patient stays, determine the total number of records in which the patient stayed 1 or more days in the LTCH during the influenza vaccination season that do not meet the exclusion criteria above.

3. **Determine the numerator count.**

   3.1 Identify the target assessments and determine the numerator count from the patient stays in the denominator.

      3.1.1 Include patient stays in the numerator count if the discharge assessment meets any of the following criteria:

         3.1.1.1 Patient received the influenza vaccine during the most recent influenza vaccination season, either in the facility (O0250A = [1]) or outside the facility (O0250C = [2]).

         3.1.1.2 Patient was offered and declined the influenza vaccine (O0250C = [4]).

         3.1.1.3 Patient was ineligible due to medical contraindication(s) (O0250C = [3]).

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[46] LTCH CARE Data Set V2.01, which was used to collect data prior to April 1, 2016, did not include influenza items on the expired assessment.

3.1.2   Use the discharge assessment as the target assessment to determine if the patient stay meets any of the criteria from step 3.1.1.

3.1.3   If the discharge assessment did not meet the criteria from step 3.1.1, use the admission assessment as the target assessment to determine if the patient stay is included in the numerator count based on the criteria from step 3.1.1.

3.2   Sum the numerator counts from 3.1.2 and 3.1.3 to determine the total number of patient stays that will be included in the facility's numerator count.

Note: Patient stays can qualify for the numerator based on information from the discharge or admission counts described in steps 3.1.2 and 3.1.3, respectively. The total numerator count consists of the sum of all patient stays that qualify for the numerator by use of the discharge or admission assessment.

4. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 3 by the result from step 2 and then multiply by 100 to obtain a percent value.

5. Round the percent value one decimal place.

5.1   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.

5.2   Drop all the digits following the first decimal place.

CASPER QM Report Measure Calculations for Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01)

This measure requires three numerator counts for the CASPER QM Reports. Using the definitions from *Table 7-7*, *7-7a*, *7-7b* and *7-7c*, the following steps are used to calculate the overall measure and relevant sub measures. The relevant sub measures are as follows:

- Percent of Residents or Patients Who Received the Seasonal Influenza Vaccine (Short Stay) (NQF #0680a) (CMS ID: L003.01)

- Percent of Residents or Patients Who Were Offered and Declined the Seasonal Influenza Vaccine (Short Stay) (NQF #0680b) (CMS ID: L004.01)

- Percent of Residents or Patients Who Did Not Receive, Due to Medical Contraindication, the Seasonal Influenza Vaccine (Short Stay) (NQF #0680c) (CMS ID: L005.01)

1. **Calculate the facility-level observed score for the overall measure** (steps 1.1 through 1.2). To calculate the facility-level observed score for the overall measure, complete steps 1 – 5 from **Chapter 6**, **Section 6.7**, "CASPER Review and Correct Report Measure Calculations" for Percent of Residents or Patients Who Were Assessed and Appropriately Given the Seasonal Influenza Vaccine (Short Stay) (NQF #0680) (CMS ID: L002.01).

2. **Calculate the facility-level observed score for each sub measure.**

2.1   Determine the facility's three numerator counts using the target assessment identified in step 3 from **Chapter 6**, **Section 6.7** "CASPER Review and Correct Report Measure Calculations" for NQF #0680 (steps 2.1.1 through 2.1.3).

2.1.1 *Numerator for NQF #0680a*: Determine the total number of patient stay records in the denominator during which patient received the influenza vaccine during the most recent influenza vaccination season, either in the facility (O0250A = [1]) or outside the facility (O0250C = [2]).

2.1.2 *Numerator for NQF #0680b*: Determine the total number of patient stay records in the denominator during which patient was offered and declined the influenza vaccine (O0250C = [4]).

2.1.3 *Numerator for NQF #0680c*: Determine the total number of patient stay records in the denominator during which patient was ineligible due to medical contraindication(s) (O0250C = [3]).

2.2 Calculate the facility-level observed scores for each numerator count (steps 2.2.1 through 2.2.3).

2.2.1 Divide the facility's numerator count for **NQF #0680a** (step 2.1.1) by the denominator count and multiply by 100 to obtain the facility-level observed score associated with NQF #0680a. Refer to *Table 7-7a* for measure calculations.

2.2.2 Divide the facility's numerator count for **NQF #0680b** (step 2.1.2) by the denominator count and multiply by 100 to obtain the facility-level observed score associated with NQF #0680b. Refer to *Table 7-7b* for measure calculations.

2.2.3 Divide the facility's numerator count for **NQF #0680c** (step 2.1.3) by the denominator count and multiply by 100 to obtain the facility-level observed score associated with NQF #0680c. Refer to *Table 7-7c* for measure calculations.

2.3 Round the percent value to one decimal place for each facility-level observed score (steps 2.3.1 through 2.3.2).

2.3.1 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.

2.3.2 Drop all the digits following the first decimal place.

Section 6.8: Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

CASPER Review and Correct Report Measure Calculations for Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report measure calculation and the CASPER QM Report measure calculation. Using the definitions from *Table 7-8*, the following steps are used to calculate the measure.

1. **Determine the denominator count**. Select any patient stays with a planned or unplanned discharge or expired assessment (A0250 = [10,11,12]) during the reporting period.

2. **Determine the numerator count.**

   Include patient stays in the numerator count if both of the following criteria (2.1 and 2.2) are met:

   2.1 The facility conducted a drug regimen review on admission which resulted in one of the three following scenarios:

       2.1.1 No potential and actual clinically significant medication issues were found during the review (N2001 = [0]); or

       2.1.2 Potential and 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

       2.1.3 The patient was not taking any medications (N2001 = [9])

   2.2 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 patient was not taking any medications (N2005 = [9]).

3. **Calculate the facility-level observed score**. Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 2 by the result from step 1 and then multiply by 100 to obtain a percent value.

4. Round the percent value to one decimal place.

   4.1 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

   4.2 Drop all the digits following the first decimal place

CASPER QM Report Measure Calculations for Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)

As previously stated, this measure is not risk-adjusted or stratified. The steps to calculate the CASPER Review and Correct Report can be applied to calculate the CASPER QM Report. Follow the steps provided above for the CASPER QM Report measure calculation for the Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01).

Section 6.9: Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

CASPER Review and Correct Report Measure Calculations for Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

Since this measure is not risk-adjusted or stratified, only the facility-level observed score is computed and the following steps can be applied to both the CASPER Review and Correct Report measure calculation and the CASPER QM Report measure calculation. Using the definitions from *Table 7-9*, the following steps are used to calculate the measure.

1. **Identify excluded patient stays** (steps 1.1 through 1.3).

   1.1   Patient stay is excluded if it is missing data to calculate the measure (O0150A = [-]).

   1.2   Patient stay is excluded if the patient was not on invasive mechanical ventilation support upon admission to the LTCH (O0150A = [0]).

   1.3   Patient stay is excluded if, of patients admitted to the LTCH during the reporting period who were on invasive mechanical ventilation support upon admission to the LTCH, weaning attempts are not expected or anticipated at admission (O0150A = [2]).

This measure consists of two components which will be computed and reported separately:

- Component 1: Percentage of Patients Assessed for Readiness for SBT by Day 2 of the LTCH Stay

- Component 2: Percentage of Patients Ready for SBT Who Received SBT by Day 2 of the LTCH Stay

Component 1, Percentage of Patients Assessed for Readiness for SBT by Day 2 of LTCH Stay

2. **Determine the denominator count for Component 1.** Of patients who were on invasive mechanical ventilation support upon admission to the LTCH, determine the total number of stays of patients for whom weaning attempts were expected or anticipated at admission (O0150A = [1]).

3. **Determine the numerator count for Component 1.** Determine the total number of stays for which the admission assessment indicates assessment for readiness for SBT by day 2 of the LTCH stay and were either deemed medically ready for a SBT by Day 2 of the LTCH stay or deemed medically unready, with documentation of reason(s).

   - O0150B = [1], *and*

   - O0150C = [1] *or* O0150D = [1]

4. **Calculate the facility-level observed score for Component 1.** Divide the facility's Component 1 numerator count by its Component 1 denominator count; that is, divide the result of step 3 by the result of step 2.

5. Calculate the rounded percent value (steps 5.1 through 5.3).

   5.1   Multiply the facility-level observed score for Component 1 by 100 to obtain a percent value.

5.2 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.

5.3 Drop all of the digits following the first decimal place.

Component 2, Percentage of Patients Ready for SBT Who Received SBT by Day 2 of the LTCH Stay

6. **Determine the denominator count for Component 2.** Determine the total number of stays for which the admission assessment indicates completed assessment for readiness for SBT by day 2 of the LTCH stay and were deemed medically ready for a SBT by Day 2 of the LTCH stay. This is a subset of the Component 1 denominator calculated in step 3 above.

   • O0150B = [1], and

   • O0150C = [1]

7. **Determine the numerator count for Component 2.** Determine the total number of stays for which the LTCH admission assessment indicates SBT was performed by day 2 of the LTCH stay, (O0150E = [1]).

8. **Calculate the facility-level observed score for Component 2.** Divide the facility's Component 2 numerator count by its Component 2 denominator count; that is, divide the result of step 7 by the result of step 6.

9. Calculate the rounded percent value (steps 9.1 through 9.3).

   9.1 Multiply the facility-level observed score for Component 2 by 100 to obtain a percent value.

   9.2 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.

   9.3 Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)

As previously stated, this measure is not risk-adjusted or stratified. The steps to calculate the CASPER Review and Correct Report can be applied to calculate the CASPER QM Report. Follow the steps provided above for the CASPER QM Report measure calculation for the Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01).

Section 6.10: Ventilator Liberation Rate (CMS ID: L023.01)

CASPER Review and Correct Report Measure Calculations for Ventilator Liberation Rate (CMS ID: L023.01)

For the Review and Correct Reports, only the facility-level observed score is computed. Using the definitions in *Table 7-10*, the following steps are used to calculate the measure.

1. Identify excluded patient stays (steps 1.1 through 1.3).

    1.1 Patient stay is excluded if it is missing data to calculate the measure (O0150A = [-]).

    1.2 Patient stay is excluded if patient was not on invasive mechanical ventilation support upon admission to the LTCH (O0150A = [0]).

    1.3 Patient stay is excluded if, of patients admitted to the LTCH during the reporting period who were on invasive mechanical ventilation support upon admission to the LTCH, weaning attempts are not expected or anticipated at admission (O0150A = [2]).

2. **Determine the facility-level denominator count.** Determine the total number of stays for which the LTCH admission assessment indicates that weaning attempts are expected or anticipated (O0150A = [1]).

3. **Determine the facility-level numerator count.** Determine the total number of stays for which the LTCH planned or unplanned discharge assessment indicates the patient is alive and fully liberated (weaned), (O0200A = [1]).

4. **Calculate the facility-level observed score.** Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 3 by the result of step 2.

5. Calculate the rounded percent value (steps 5.1 through 5.3).

    5.1 Multiply the facility-level observed score by 100 to obtain a percent value.

    5.2 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.

    5.3 Drop all of the digits following the first decimal place.

CASPER QM Report Measure Calculations for Ventilator Liberation Rate (CMS ID: L023.01)

This measure is risk-adjusted for the CASPER QM Reports and therefore an observed (i.e., not risk-adjusted) and a risk-adjusted value are reported. Using the definitions in *Table 7-10*, the following steps are used to calculate the measure.

1. **Calculate the facility-level observed score** (steps 1.1 through 1.2).

    1.1 To calculate the facility-level observed score, complete steps 1 – 4 from **Chapter 6, Section 6.10**, "CASPER Review and Correct Report Measure Calculations" for this measure.

    1.2 Do not multiply by 100 or round to the nearest first decimal place. All rounding will be done at the end of the measure calculation.

2. **Calculate the national average observed score**[47] as the mean ventilator liberation rate for all patient stays calculated using steps 1 – 3 from **Chapter 6, Section 6.10**. This will be used in step 6 to calculate the facility-level risk-adjusted ventilator liberation rate.

   *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 by these documents.*

3. Calculate the facility-level predicted ventilator liberation rate (steps 3.1 through 3.4).

   3.1 Determine the presence or absence of the measure covariates for each patient.

   3.2 Using the covariate definitions in **Table 7-10**, assign covariate values (COV), either '0' for covariate condition not present or '1' for covariate condition present, for each patient for each of the covariates as reported on the admission assessment.

   3.3 Calculate the predicted score for each patient using the following formula:

   $$[\mathbf{1}] \text{ Predicted score} = \propto + \beta_1(COV_1) + \cdots + \beta_n(COV_n)$$

   $$[\mathbf{2}] \propto = \gamma + \mu$$

   Where:

   - **Predicted score** identifies the predicted probability of ventilator liberation for each patient

   - **α** is the LTCH-specific regression constant or intercept

   - β_1 **through** β_n are the regression coefficients for the covariates (see Risk-Adjustment Appendix File).

   - **γ** is the adjusted average ventilator liberation rate across all LTCHs (see Risk-Adjustment Appendix File)

   - **μ** is the LTCH-specific random effect (unique increment to the intercept associated with the LTCH; see Risk-Adjustment Appendix File)

   See **Appendix A**, **Table A-5** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients as well as detailed LTCH CARE Data Set coding for each covariate, and see **Appendix A**, **Table A-7** and the associated Risk-Adjustment Appendix File for the list of intercepts associated with each LTCH.[48] The regression constant, regression coefficients, and LTCH-specific intercepts are values obtained through hierarchical logistic regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression constants and coefficients based on the

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[47] The national average observed score is calculated using the patient stay as the unit of analysis.

[48] 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.

target period stated in *Table A-5*, *Table A-7*, and the associated Risk-Adjustment Appendix File.

    3.4   Calculate the predicted ventilator liberation rate (pred$_j$) for each LTCH as the mean of the predicted score for all patients in the facility.

4. Calculate the facility-level expected ventilator liberation rate (steps 4.1 through 4.4).

    4.1   Determine the presence or absence of the measure covariates for each patient.

    4.2   Using the covariate definitions in *Table 7-10*, assign covariate values (COV), either '0' for covariate condition not present or '1' for covariate condition present, for each patient for each of the covariates as reported on the admission assessment.

    4.3   Calculate the expected score for each patient using the following formula:

$$[3] \text{ Expected score} = \beta_0 + \beta_1(COV_1) + \ldots + \beta_n(COV_n)$$

Where:

- ***Expected score*** identifies the expected liberation probability of ventilator liberation for each patient

- β_0 is the logistic regression constant or intercept

- β_1 ***through*** β_n re the regression coefficients for the covariates (see Risk-Adjustment Appendix File).

See **Appendix A**, *Table A-6* and the associated Risk-Adjustment Appendix File for the regression constant and coefficients as well as detailed LTCH CARE Data Set coding for each risk adjustor.[49] The regression constant and regression coefficients are values obtained through logistic regression analysis. Please note that the CASPER QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in *Table A-6* and the associated Risk-Adjustment Appendix File.

    4.4   Calculate the expected ventilator liberation rate (exp$_j$) for each LTCH as the mean of the expected score for all patients in the facility.

5. **Calculate the facility-level standardized risk ratio.** Calculate the facility-level standardized risk ratio (SRRj) using the following equation:

$$SRR_j = \frac{pred_j}{exp_j}$$

Where:

- pred$_j$ = the predicted ventilator liberation rate for each LTCH, as calculated in step 3

- exp$_j$ = the expected ventilator liberation rate for each LTCH, as calculated in step 4.

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[49] 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.

6. **Calculate the LTCH risk-adjusted ventilator liberation rate**. Calculate the LTCH risk-adjusted ventilator liberation rate by multiplying the facility-level standardized risk ratio (step 5) by the national average observed score (step 2).

7. Calculate the rounded percent value (steps 7.1 through 7.3).

   7.1 Multiply the LTCH risk-adjusted ventilator liberation rate by 100 to obtain a percent value.

   7.2 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.

   7.3 Drop all of the digits following the first decimal place.

Chapter 7
Measure Logic Specifications for Assessment-Based Quality Measures (LTCH CARE Data Set)

Table 7-1

Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay)
(NQF #0678) (CMS ID: L001.02)[50]

Measure Description
This measure reports the percentage of patient stays with Stage 2, 3, or 4 pressure ulcers that are new or worsened since admission. The measure is calculated by review of a patient's discharge assessment for reports of Stage 2, 3, or 4 pressure ulcers that were not present or were at a lesser stage at the time of admission.

Measure Specifications[51]

Numerator

The numerator is the number of stays for which the discharge assessment (A0250 = [10, 11]) indicates one or more new or worsened Stage 2 – 4 pressure ulcers compared to admission:

1. Stage 2 (M0800A) > 0, *or*
2. Stage 3 (M0800B) > 0, *or*
3. Stage 4 (M0800C) > 0.

Denominator

The denominator is the number of patient stays with both an admission (A0250 = [01]) and planned or unplanned discharge (A0250 = [10, 11]) LTCH CARE Data Set assessment with the discharge date in the measure target period, except those that meet the exclusion criteria.

Exclusions

Patient stay is excluded if:

Data on new or worsened Stage 2, 3, and 4 pressure ulcers are missing on the planned or unplanned discharge assessment:

- M0800A = [-] and M0800B = [-] and M0800C = [-].

Patient died during the LTCH stay:

- A0250 (Reason for Assessment) = [12]

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[50] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/0678) (in addition to inpatient rehabilitation facility and skilled nursing facility/nursing home settings) and is finalized for reporting by LTCHs under the FY 2012 IPPS/LTCH PPS final rule (76 FR 51748 through 51750), FY 2014 IPPS/LTCH PPS final rule (78 FR 50861 through 50863), and FY 2016 IPPS/LTCH PPS final rule (80 FR 49731 through 49736). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the SNF/NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[51] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit pressure ulcer data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Covariates

Data for each covariate is derived from the admission assessment included in the target patient stay records.
 	
 1. **Indicator of supervision/touching assistance or more for the functional Mobility item, Lying to Sitting on Side of Bed on the admission assessment:**
 For patient stays with a target date prior to 4/1/2016:
 a. Covariate = [1] (yes) if GG0160C = [01,02,03,04,07,09,88] ([01] = Dependent, [02] = Substantial/maximal assistance, [03] = Partial/moderate assistance, [04] = Supervision or touching assistance, [07] = Patient refused, [09] = Not applicable, [88] = (activity) not attempted due to medical condition or safety concerns)
 b. Covariate = [0] (no) if GG0160C= [05, 06, -] ([05] = Set-up or clean-up assistance, [06] = Independent, [-] = Not assessed/no information)
 For patient stays with a target date on or after 4/1/2016:
 a. Covariate = [1] (yes) if GG0170C = [01,02,03,04,07,09,88] ([01] = Dependent, [02] = Substantial/maximal assistance, [03] = Partial/moderate assistance, [04] = Supervision or touching assistance, [07] = Patient refused, [09] = Not applicable, [88] = (activity) not attempted due to medical condition or safety concerns)
 b. Covariate = [0] (no) if GG0170C= [05, 06, -] ([05] = Setup or clean-up assistance, [06] = Independent, [-] = Not assessed/no information)
 	
 2. **Indicator of bowel incontinence at least occasionally on the admission assessment:**
 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. **Have diabetes mellitus, peripheral vascular disease or peripheral arterial disease on admission assessment:**
 a. Covariate = [1] (yes) if any of the following are true:
    i. I0900 = [1] (checked)
    ii. I2900 = [1] (checked)
 b. Covariate = [0] (no) if I0900 = [0,-] *and* I2900 = [0,-] ([0] = No, [-] = Not assessed/ no information)
 	
 4. **Indicator of 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 / height²) = ([K0200B] * 703) / (K0200A²) and the resulting value is rounded to one decimal place.[53]

Measure Description
This measure reports the percentage of patient 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 review of a patient's discharge assessment 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

Numerator

The numerator is the number of stays for which the discharge assessment (A0250 = [10, 11]) 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 patient stays with both an admission (A0250 = [01]) and planned or unplanned discharge (A0250 = [10, 11]) LTCH CARE Data Set assessment with the discharge date in the measure target period, except those that meet the exclusion criteria.

Exclusions

Patient stay is excluded if:

- **Data on new or worsened Stage 2, 3, 4, and unstageable pressure ulcers, including deep tissue injuries, are missing [-] on the planned or unplanned discharge assessment:**
  (M0300B1 = [-] or M0300B2 = [-]) and (M0300C1 = [-] or M0300C2 = [-]) and (M0300D1= [-] or M0300D2= [-]) and (M0300E1= [-] or M0300E2 = [-]) and (M0300F1= [-] or M0300F2=[-]) and (M0300G1= [-] or M0300G2=[-]).

- **Patient died during the LTCH stay:**
  A0250 (Reason for Assessment) = [12]

(continued)

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[54] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit pressure ulcer data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-2 (continued)
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury
(CMS ID: L021.01)

Covariates

Data for each covariate is derived from the admission assessment included in the target patient stay records.
 	
 1. **Functional Mobility Admission Performance:**
 Supervision/touching assistance or more for the functional mobility item Lying to Sitting on Side of Bed:
 	
     a. Covariate = [1] (yes) if GG0170C = [01, 02, 07, 09, 10, 88] ([01] = Dependent, [02] =Substantial/maximal assistance, [07] = Patient 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 GG0170C = [03, 04, 05, 06, -] ([03] =Partial/moderate assistance, [04] =Supervision or touching assistance, [05] =Setup or clean-up assistance, [06] = Independent, [-] =Not assessed/no information)
 	
 2. **Bowel Continence:**
     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, [-] = No response available, [^] = Valid skip)
 	
 3. **Peripheral Vascular Disease / Peripheral Arterial Disease or Diabetes Mellitus:**
     a. Covariate = [1] (yes) if any of the following are true:
         i. I0900 = [1] (checked)
         ii. 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) on the Admission assessment:**
     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 / height²) = ([K0200B] * 703) / (K0200A²) and the resulting value is rounded to one decimal place.[55]

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[55] To round the percent value to one decimal place, if the digit in the second decimal place is 5 or greater, 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 7-3
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay)
(NQF #0674) (CMS ID: L012.01)[56]

Measure Description
This quality measure reports the percentage of patients/residents who experience one or more falls with major injury (defined as bone fractures, joint dislocations, closed head injuries with altered consciousness, or subdural hematoma) during the LTCH stay.

Measure Specifications[57]
Numerator
Total number of patient stays in the denominator with planned or unplanned discharge or expired assessment during the selected time window who experienced one or more falls that resulted in major injury: J1900C = [1] or [2].
Denominator
The total number of patient stays with a planned or unplanned discharge or expired assessment (A0250 = [10, 11, 12]) with the discharge date in the measure target period, which do not meet the exclusion criteria.
Exclusions
Patient stay is excluded if the number of falls with major injury was not coded: J1900C (Falls with Major Injury) = [-]

Covariates
None.

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[56] 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 LTCHs under the FY 2014 IPPS/LTCH PPS final rule (78 FR 50874 through 50877) and FY 2016 IPPS/LTCH PPS final rule (80 FR 49736 through 49739).

[57] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit falls data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-4

Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)[58]

Measure Description
This measure estimates the risk-adjusted change in mobility score between admission and discharge among LTCH patients requiring ventilator support at admission. The change in mobility score is calculated as the difference between the discharge mobility score and the admission mobility score. This measure only includes patients requiring invasive mechanical ventilator support on admission.
Measure Specifications[59]
Mobility items and Rating scale: The following Mobility items are collected at admission and discharge: • GG0170A: Roll left and right • GG0170B: Sit to lying • GG0170C: Lying to sitting on side of bed • GG0170D: Sit to stand • GG0170E: Chair/bed-to-chair transfer • GG0170F: Toilet transfer • GG0170J: Walk 50 feet with two turns • GG0170K: Walk 150 feet Each Mobility item is coded using a 6-point scale, as follows: • 06 (Independent) • 05 (Setup or clean-up assistance) • 04 (Supervision or touching assistance) • 03 (Partial/moderate assistance) • 02 (Substantial/maximal assistance) • 01 (Dependent)

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[58] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2632 🔗) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

[59] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-4 (continued)

Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)[60]

Measure Specifications[61]

If an item is not attempted, an 'activity not attempted' code may be used:

- 07 (Patient refused)
- 09 (Not applicable)
- 10 (Not attempted due to environmental limitations)
- ^ (skip)
- - (dash)
- 88 (Not attempted due to medical condition or safety concerns).
- If code is between 01 and 06, then use code as the score
- If code is 07, 09, 88, 10 then recode to 01 and use this code as the score
- If the Mobility item is skipped (^), dashed (–), or missing, then recode to 01 and use this code as the score

Risk-adjusted change in mobility score

The facility-level risk-adjusted change in mobility score is calculated as follows:

(Facility-level observed change score / Facility-level expected change score) * National average change score.

Target Population

Patients with an admission assessment (A0250=01) and a planned discharge assessment (A0250=10) that define a patient stay during the target period, who require invasive ventilator support at the time of admission (O0150A = [1, 2] on the admission assessment).

Exclusions

Patient stay is excluded if:

Patient is younger than 21 years:

- Age (A0220 minus A0900) < 21 years (Age is calculated based on the truncated difference between admission date (A0220) and birth date (A0900); i.e. the difference is not rounded to nearest whole number.)

Patient had an unplanned discharge or expired:

- A0250 (Reason for Assessment) = [11, 12]

Patient was discharged to hospital emergency department, short-stay acute hospital, long-term care hospital, psychiatric hospital or unit, hospice, or against medical advice:

- A2110 (Discharge Location) = [04, 05, 06, 08, 10, 12]

(continued)

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[60] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2632 ⧉) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

[61] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Measure Specifications[63]
Length of stay is less than 3 days:
• A0270 (Discharge Date) minus A0220 (Admission Date) < 3 days
Patient is in a coma, persistent vegetative state, complete tetraplegia, or locked-in syndrome:
• B0100 (Comatose) = [1]
• I5101 (Complete Tetraplegia) = [1]
• I5460 (Locked-In State) = [1]
• I5470 (Severe Anoxic Brain Damage, Cerebral Edema, or Compression of Brain) = [1]
Patient has a progressive neurological condition, including amyotrophic lateral sclerosis, multiple sclerosis, Parkinson's disease, or Huntington's chorea:
• I5200 (Multiple Sclerosis) = [1]
• I5250 (Huntington's Disease) = [1]
• I5300 (Parkinson's Disease) = [1]
• I5450 (Amyotrophic Lateral Sclerosis) = [1]
Patient is independent on <u>all</u> Mobility items at admission:
• GG0170A1 = [06], and
• GG0170B1 = [06], and
• GG0170C1 = [06], and
• GG0170D1 = [06], and
• GG0170E1 = [06], and
• GG0170F1 = [06], and
• GG0170J1 = [06], and
• GG0170K1 = [06]

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[62] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2632) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

[63] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-4 (continued)

Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)[64]

Covariates
Data for each covariate are derived from the admission assessment included in the target patient stay records.

1. **Age groups** (Age is calculated based on the truncated difference between admission date (A0220) and birth date (A0900); i.e. the difference is not rounded to nearest whole number. 65-74 years is the reference category).

   a.   < 55 years

   b.   55-64 years

   c.   65-74 years

   d.   75-84 years

   e.   ≥ 85 years

2. **Moderate to Severe Communication Impairment:**
   a.   = [1] (Yes) if BB0700 (Expression of ideas and wants) = [1, 2] (1= Rarely/Never expresses self or speech is very difficult to understand; 2=Frequently exhibits difficulty with expressing needs and ideas) OR
   b.   = [1] (Yes) if BB0800 (Understanding verbal content) = [1, 2] (1=Rarely/Never Understands; 2=Sometimes Understands: Understands only basic conversations or simple, direct phrases. Frequently requires cues to understand.)
   c.   Else = [0] (No)

3. **Prior Functioning: Indoor Mobility (Ambulation): Dependent**
   a.   = [1] (Yes) if GG0100B = [1] (Dependent)
   b.   Else = [0] (No)

4. **Prior Functioning: Indoor Mobility (Ambulation): Some help**
   a.   = [1] (Yes) if GG0100B = [2] (Needed some help)
   b.   Else = [0] (No)

5. **Prior Device Use: Wheelchair/Scooter**
   a.   = [1] (Yes) if GG0110A (Manual wheelchair) = [1] (checked) or GG0110B (Motorized wheelchair or scooter) = [1] (checked)
   b.   Else = [0] (No)

6. **Prior Device Use: Mechanical Lift**
   a.   = [1] (Yes) if GG0110C (Mechanical lift) = [1] (checked)
   b.   Else = [0] (No)

7. **Primary Medical Condition Category: Chronic respiratory condition:**
   a.   = [1] (Yes) if I0050 = [2]
   b.   Else = [0] (No)

Table 7-4 (continued)

Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.02)[65]

Covariates
8. **Primary Medical Condition Category: Acute onset and chronic respiratory conditions:** 　　a.　= [1] (Yes) if I0050 = [3] 　　b.　Else = [0] (No)
9. **Primary Medical Condition Category: Chronic cardiac condition:** 　　a.　= [1] (Yes) if I0050 = [4] 　　b.　Else = [0] (No)
10. **Primary Medical Condition Category: Other medical condition:** 　　a.　= [1] (Yes) if I0050 = [5] 　　b.　Else = [0] (No)
11. **Presence of a stage 3, 4, or unstageable pressure ulcer/injury:** 　　a.　= [1] (Yes) if ([M0300C1 (Number of stage 3 pressure ulcers) > 0] or [M0300D1 (Number of stage 4 pressure ulcers) > 0] or [M0300E1 (Number of unstageable pressure ulcers due to non-removable dressing/device) > 0] or [M0300F1 (Number of unstageable pressure ulcers due to coverage of wound bed by slough and/or eschar) > 0] or [M0300G1 ((Number of unstageable pressure ulcers with suspected deep tissue injury in evolution) > 0]) 　　b.　Else = [0] (No)
12. **Total Parenteral Nutrition on Admission:** 　　a.　= [1] (Yes) if O0100N (Other Treatments: Total parenteral nutrition) = [1] 　　b.　Else = [0] (No
13. **Comorbidities: Severe and Metastatic Cancers:** 　　a.　= [1] (Yes) if I0103 (Metastatic Cancer) = [1] or I0104 (Severe Cancer) = [1] 　　b.　Else = [0] (No)
14. **Comorbidities: Dialysis and Chronic Kidney Disease, Stage 5:** 　　a.　= [1] (Yes) if O0100J = [1] or I1501 = [1] 　　b.　Else = [0] (No)
15. **Comorbidities: Acute Renal Failure:** 　　a.　= [1] (Yes) if I1502 = [1] 　　b.　Else = [0] (No)

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[65] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2632) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

Covariates

16. **Comorbidities: Major Infections: Septicemia, Sepsis, Systematic Inflammatory Response Syndrome/Shock, Central Nervous System Infections, Opportunistic Infections, Bone/Joint/Muscle Infections/Necrosis**
  a.   = [1] (Yes) if I2101 = [1] or I2600 = [1]
  b.   Else = [0] (No)

17. **Comorbidities: Diabetes Mellitus (DM):**
  a.   = [1] (Yes) if I2900 = [1]
  b.   Else = [0] (No)

18. **Comorbidities: Major Lower Limb Amputation:**
  a.   = [1] (Yes) if I4100 = [1]
  b.   Else = [0] (No)

19. **Comorbidities: Stroke, Hemiplegia or Hemiparesis:**
  a.   = [1] (Yes) if I4501 = [1] or I4900 = [1]
  b.   Else = [0] (No)

20. **Comorbidities: Dementia:**
  a.   = [1] (Yes) if I4801 = [1]
  b.   Else = [0] (No)

21. **Comorbidities: Paraplegia, Incomplete Tetraplegia, Other Spinal Cord Disorder/Injury:**
  a.   [1] (Yes) if I5000 = [1] or I5102 = [1] or I5110 = [1]
  b.   Else = [0] (No)

22. **Comorbidities: Malnutrition (protein or calorie):**
  a.   = [1] (Yes) if I5601 = [1]
  b.   Else = [0] (No)

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[66] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2632) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

Table 7-5

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: L009.02)[67]

Measure Description
This measure reports the percentage of all LTCH patients with an admission and discharge functional assessment and a care plan that addresses function.

Measure Specifications[68]

Incomplete and Complete Patient stays:

Patients with incomplete patient stays are identified based on:

1. A0250 (Reason for Assessment) = 11, 12; or
2. A0270 (Discharge Date) minus A0220 (Admission Date) < 3 days; or
3. A2110 (Discharge Location) = 04, 05, 06, 08, 12

Patients not meeting the definition of incomplete patient stays are considered complete patient stays.

Numerator:

For patients with complete patient stays, three criteria are required for inclusion in the numerator: (i) complete admission functional assessment data, AND (ii) a discharge goal for at least one Self-Care or Mobility item on the admission assessment, AND (iii) complete discharge functional assessment data.

For patients with incomplete patient stays, two criteria are required for inclusion in the numerator: (i) complete admission functional assessment data, AND (ii) a discharge goal for at least one Self-Care or Mobility item on the admission assessment.

Specifications for complete admission functional assessment data:

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

1. [((BB0700. Expression of Ideas and Wants = [1, 2, 3, 4]) and (B0100 = [0])) OR (B0100 = [1])]; and
2. [((BB0800. Understanding Verbal Content = [1, 2, 3, 4]) and (B0100 = [0])) OR (B0100 = [1])]; and
3. C1610A. Acute Onset and Fluctuating Course = [0, 1] OR (B0100 = [1]); and
4. C1610B. Acute Onset and Fluctuating Course = [0, 1] OR (B0100 = [1]); and
5. C1610C. Inattention = [0, 1] OR (B0100 = [1]); and
6. C1610D. Disorganized Thinking = [0, 1] OR (B0100 = [1]); and
7. C1610E1 Altered Level of Consciousness = [0, 1] OR (B0100 = [1]); and

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Table 7-5 (continued)

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: L009.02)[69]

Measure Specifications[70]
8. C1610E2. Altered Level of Consciousness = [0, 1] OR (B0100 = [1]); and

8. C1610E2. Altered Level of Consciousness = [0, 1] OR (B0100 = [1]); and
9. GG0130A1. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
10. GG0130B1. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
11. GG0130C1. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
12. GG0130D1. Wash upper body = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
13. GG0170A1. Roll left and right = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
14. GG0170B1. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
15. GG0170C1. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
16. GG0170D1. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
17. GG0170E1. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
18. GG0170F1. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
19. (GG0170I1. Walk 10 feet = [01, 02, 03, 04, 05, 06] and
    GG0170J1. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170K1. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88])
        OR
    GG0170I1. Walk 10 feet = [07, 09, 10, 88]; and
20. (GG0170R1. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170RR1. Indicate the type of wheelchair/scooter used = [1, 2] and
    GG0170S1. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170SS1. Indicate the type of wheelchair/scooter used = [1, 2])
        OR
    GG0170Q1. Does the patient use a wheelchair/scooter = [0, ^]; and
21. H0350. Bladder Continence = [0, 1, 2, 3, 4, 5, 9].

Specifications for a care plan (discharge goal):

For the care plan (discharge goal) to be complete, at least one of the items listed below should 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. GG0130D2. Wash upper body = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or

(continued)

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[69] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2631 🔗) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50291 through 50298).

[70] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Measure Specifications[72]

5.   GG0170A2. Roll left and right = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
6.   GG0170B2. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
7.   GG0170C2. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
8.   GG0170D2. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
9.   GG0170E2. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
10.   GG0170F2. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
11.   GG0170I2. Walk 10 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
12.   GG0170J2. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
13.   GG0170K2. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
14.   GG0170R2. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
15.   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 met.

1.   [((BB0700. Expression of Ideas and Wants = [1, 2, 3, 4]) and (B0100 = [0])) OR (B0100 = [1])]; and
2.   [((BB0800. Understanding Verbal Content = [1, 2, 3, 4]) and (B0100 = [0])) OR (B0100 = [1])]; and
3.   C1610A. Acute Onset and Fluctuating Course = [0, 1] OR (B0100 = [1]); and
4.   C1610B. Acute Onset and Fluctuating Course = [0, 1] OR (B0100 = [1]); and
5.   C1610C. Inattention = [0, 1] OR (B0100 = [1]); and
6.   C1610D. Disorganized Thinking = [0, 1] OR (B0100 = [1]); and
7.   C1610E1 Altered Level of Consciousness = [0, 1] OR (B0100 = [1]); and
8.   C1610E2. Altered Level of Consciousness = [0, 1] OR (B0100 = [1]); and
9.   GG0130A3. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 88]; and
10.   GG0130B3. Oral hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
11.   GG0130C3. Toileting hygiene = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
12.   GG0130D3. Wash upper body = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
13.   GG0170A3. Roll left and right = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and

(continued)

Measure Specifications[74]

14. GG0170B3. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
15. GG0170C3. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
16. GG0170D3. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
17. GG0170E3. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and
18. GG0170F3. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88], and
19. (GG0170I3. Walk 10 feet = [01, 02, 03, 04, 05, 06] and
    GG0170J3. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170K3. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]
       OR
    GG0170I3. Walk 10 feet = [07, 09, 10, 88]; and
    (GG0170R3. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170RR3. Indicate the type of wheelchair/scooter used = [1, 2] and
    GG0170S3. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170SS3. Indicate the type of wheelchair/scooter used = [1, 2])
       OR
    GG0170Q3. Does the patient use a wheelchair/scooter= [0]; and
    H0350. Bladder Continence = [0, 1, 2, 3, 4, 5, 9].

Denominator

The denominator is the number of LTCH patients discharged during the measure target period.

Exclusions

There are no denominator exclusions for this measure.

Covariates
None.

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[73] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2631 🖉) and is finalized for reporting by LTCHs under the FY 2015 IPPS/LTCH PPS final rule (79 FR 50291 through 50298).

[74] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-6

**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: L010.02)[75]**

Measure Description
This quality measure reports the percentage of all Long-Term Care Hospital (LTCH) patients with an admission and discharge functional assessment and a care plan that addresses function.

Measure Specifications[76]

Incomplete and Complete Patient stays:
Patients with incomplete patient stays are identified based on:
1. A0250 (Reason for Assessment) = 11, 12; or
2. A2110 (Discharge Location) = 04, 05, 06, 08, 12
3. A0270 (Discharge Date) minus A0220 (Admission Date) < 3 days; or

Patients not meeting the definition of incomplete patient stays are considered complete patient stays.

Numerator:
For patients with complete patient stays, three criteria are required for inclusion in the numerator: (i) complete admission functional assessment data, AND (ii) a discharge goal for at least one Self-Care or Mobility item on admission assessment, AND (iii) complete discharge functional assessment data.

For patients with incomplete patient stays, two criteria are required for inclusion in the numerator: (i) complete admission functional assessment data, AND (ii) a discharge goal for at least one Self-Care or Mobility item on admission assessment.

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

(continued)

Table 7-6 (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: L010.02)[77]

Measure Specifications[78]

9. (GG0170I1. Walk 10 feet = [01, 02, 03, 04, 05, 06] and
GG0170J1. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
GG0170K1. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88])
    OR
GG0170I1. Walk 10 feet = [07, 09, 10, 88]; and
10. (GG0170R1. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
GG0170RR1. Indicate the type of wheelchair/scooter used = [1, 2] and
GG0170S1. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
GG0170SS1. Indicate the type of wheelchair/scooter used = [1, 2])
    OR
GG0170Q1. Does the patient us a wheelchair/scooter = [0]

Specifications for a discharge goal (care plan):

For the discharge goal (care plan) to be complete, at least one of the items listed below should 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. GG0130D2. Wash upper body = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
5. GG0170A2. Roll left and right = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
6. GG0170B2. Sit to lying = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
7. GG0170C2. Lying to sitting on side of bed = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
8. GG0170D2. Sit to stand = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
9. GG0170E2. Chair/bed-to-chair transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
10. GG0170F2. Toilet transfer = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
11. GG0170I2. Walk 10 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
12. GG0170J2. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
13. GG0170K2. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
14. GG0170R2. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; or
15. GG0170S2. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88].

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[77] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2631 🖉) and is finalized for reporting by LTCHs under the FY 2016 IPPS/LTCH PPS final rule (80 FR 49739 through 49747).

[78] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Measure Specifications[80]

Specifications for complete discharge functional assessment data:

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

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] and
   GG0170J3. Walk 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
   GG0170K3. Walk 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88])
       OR
   GG0170I3. Walk 10 feet = [07, 09, 10, 88]; and
10. (GG0170R3. Wheel 50 feet with two turns = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170RR3. Indicate the type of wheelchair/scooter used = [1, 2] and
    GG0170S3. Wheel 150 feet = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88] and
    GG0170SS3. Indicate the type of wheelchair/scooter used = [1, 2] and
    GG0170Q3. Does the patient use a wheelchair/scooter = [1])
        OR
    GG0170Q3. Does the patient use a wheelchair/scooter = [0]

Denominator

The denominator is the number of LTCH patients discharged during the measure target period.

Exclusions

There are no denominator exclusions for this measure.

Covariates

None.

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[79] This measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/2631) and is finalized for reporting by LTCHs under the FY 2016 IPPS/LTCH PPS final rule (80 FR 49739 through 49747).

[80] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit functional assessment and care plan data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-7
Percent of Residents or Patients Who Were Assessed and Appropriately Given the
Seasonal Influenza Vaccine (NQF #0680) (CMS ID: L002.01)[81]

Measure Description
This measure reports the percentage of stays in which the patient was assessed and appropriately given the influenza vaccine during the most recent influenza vaccination season.

Measure Specifications[82]

Numerator

Total number of patient stays in the denominator meeting one of the following criteria on the selected influenza vaccination assessment, with each criterion reported and computed separately:

1. Patient received the influenza vaccine during the most recent influenza vaccination season, either in the facility (O0250A = [1]) or outside the facility (O0250C = [2]); or
2. Patient was offered and declined the influenza vaccine (O0250C.= [4]); or
3. Patient was ineligible due to medical contraindication(s) (O0250C = [3]).

Note: The discharge assessment should be used to determine if the patient stay meets any of the criteria for the numerator. If the information on the discharge assessment did not indicate that the patient met any one of the criteria for the numerator (i.e., patient stay did not qualify for numerator count based on coding from the discharge assessment), the admission assessment should be used to determine if the patient stay meets any one of the criteria for the numerator.

Denominator

The denominator consists of patient stays with a discharge date within the current influenza season (i.e., July 1 to June 30) who were in the facility for at least 1 or more days during the influenza vaccination season (i.e., October 1 to March 31), that do not meet any of the exclusion criteria.

Exclusions

Stays for which the patient's age on the selected influenza vaccination assessment is 179 days or less:

- Calculate the patient's age in days using the discharge date (A0270) or the last date of the influenza vaccination season (March 31 of relevant year), whichever comes first in time. Patients who are 180 days old or more by this calculation are included in the measure. Patients who are 179 days old or less by this calculation are excluded from the measure.

Patient stay that ends with patient's death (this exclusion applies only to stays with a discharge date prior to 4/1/2016)

- Expired assessment = (A0250 = [12])

Covariates
None.

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[81] This measure is NQF-endorsed for use in the Long-Term Care Hospital (LTCH) setting (https://www.qualityforum.org/QPS/0680 🗗) (in addition to inpatient rehabilitation facility and nursing home settings) and is finalized for reporting by LTCHs under the FY 2013 IPPS/LTCH PPS final rule (77 FR 53624 through 53627). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[82] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit influenza vaccination data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-7a
Percent of Residents or Patients Who Received the Seasonal Influenza Vaccine (Short Stay)
(NQF #0680a) (CMS ID: L003.01)[83]

Measure Description
This measure reports the percentage of patient stays in which the patient received the influenza vaccination during the most recent influenza vaccination season.
This is one of three numerator components of the overall measure score for NQF #0680.

Measure Specifications[84]

Numerator

Total number of patient stays in the denominator meeting the following criteria on the selected influenza vaccination assessment:

1. Patient received the influenza vaccine during the most recent influenza vaccination season, either in the facility (O0250A = [1]) or outside the facility (O0250C = [2]).

Denominator

The denominator consists of patient stays with a discharge date within the current influenza season (i.e., July 1 to June 30) who were in the facility for at least 1 or more days during the influenza vaccination season (i.e., October 1 to March 31), that do not meet any of the exclusion criteria.

Exclusions

Stays for which the patient's age on selected influenza vaccination assessment is 179 days or less:

- Calculate the age in days using the discharge date (A0270) or the last date of the influenza vaccination season (March 31 of relevant year), whichever comes first in time. Patients who are 180 days old or more by this calculation are included in the measure. Patients who are 179 days old or less by this calculation are excluded from the measure.

Patient stay that ends with patient's death (this exclusion applies only to stays with a discharge date prior to 4/1/2016)

- A0250 (expired assessment) = [12]

Covariates
None.

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[83] This measure is NQF-endorsed for use in the Long-Term Care Hospital (LTCH) setting (https://www.qualityforum.org/QPS/0680 ⧉) (in addition to inpatient rehabilitation facility and nursing home settings) and is finalized for reporting by LTCHs under the FY 2013 IPPS/LTCH PPS final rule (77 FR 53624 through 53627). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[84] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit influenza vaccination data for the LTCH QRP.
A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website:
https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-7b

Percent of Residents or Patients Who Were Offered and Declined the Seasonal Influenza Vaccine (Short Stay)
(NQF #0680b) (CMS ID: L004.01)[85]

Measure Description
This measure reports the percentage of patient stays in which the patients were offered and declined the influenza vaccination during the most recent influenza vaccination season.
This is one of three numerator components of the overall measure score for NQF #0680.

Measure Specifications[86]

Numerator

Total number of patient stays in the denominator meeting the following criterion on the selected influenza vaccination assessment:

1. Patient was offered and declined the influenza vaccine (O0250C = [4]).

Denominator

The denominator consists of patient stays with a discharge date within the current influenza season (i.e., July 1 to June 30) who were in the facility for at least 1 or more days during the influenza vaccination season (i.e., October 1 to March 31), that do not meet any of the exclusion criteria.

Exclusions

Stays for which the patient's age on selected influenza vaccination assessment is 179 days or less:

- Calculate the age in days using the discharge date (A0270) or the last date of the influenza vaccination season (March 31 of relevant year), whichever comes first in time. Patients who are 180 days old or more by this calculation are included in the measure. Patients who are 179 days old or less by this calculation are excluded from the measure.

Patient stay that ends with patient's death (this exclusion applies only to stays with a discharge date prior to 4/1/2016)

- A0250 (expired assessment) = [12]

Covariates
None.

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[85] This measure is NQF-endorsed for use in the Long-Term Care Hospital (LTCH) setting (https://www.qualityforum.org/QPS/0680 ⧉) (in addition to inpatient rehabilitation facility and nursing home settings) and is finalized for reporting by LTCHs under the FY 2013 IPPS/LTCH PPS final rule (77 FR 53624 through 53627). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[86] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit influenza vaccination data for the LTCH QRP.
A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website:
https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-7c

Percent of Residents or Patients Who Did Not Receive, Due to Medical Contraindication, the Seasonal Influenza Vaccine (Short Stay) (NQF #0680c) (CMS ID: L005.01)[87]

Measure Description
This measure reports the percentage of patient stays in which the patents did not receive, due to medical contraindication, the influenza vaccination during the most recent influenza vaccination season.
This is one of three numerator components of the overall measure score for NQF #0680.

Measure Specifications[88]

Numerator

Total number of patient stays in the denominator meeting the following criteria on the selected influenza vaccination assessment:

1. Patient was ineligible due to medical contraindication(s) (O0250C = [3])

Denominator

The denominator consists of patient stays with a discharge date within the current influenza season (i.e., July 1 to June 30) who were in the facility for at least 1 or more days during the influenza vaccination season (i.e., October 1 to March 31), that do not meet any of the exclusion criteria.

Exclusions

Stays for which the patient's age on selected influenza vaccination assessment is 179 days or less:

- Calculate the age in days using the discharge date (A0270) or the last date of the influenza vaccination season (March 31 of relevant year), whichever comes first in time. Patients who are 180 days old or more by this calculation are included in the measure. Patients who are 179 days old or less by this calculation are excluded from the measure.

Patient stay that ends with patient's death (this exclusion applies only to stays with a discharge date prior to 4/1/2016)

- A0250 (expired assessment) = [12]

Covariates
None.

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[87] This measure is NQF-endorsed for use in the Long-Term Care Hospital (LTCH) setting (https://www.qualityforum.org/QPS/0680) (in addition to inpatient rehabilitation facility and nursing home settings) and is finalized for reporting by LTCHs under the FY 2013 IPPS/LTCH PPS final rule (77 FR 53624 through 53627). The use of the words "resident" and "short stay" in the title of this measure refer to the use of this measure in the NH setting. CMS's use of these words does not imply that the LTCH patient is a "resident" or that a stay in an LTCH is a "short stay."

[88] Effective on April 1, 2016, the LTCH CARE Data Set Version 3.00 is used to collect and submit influenza vaccination data for the LTCH QRP.
A copy of the LTCH CARE Data Set Version 3.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-8

Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP
(CMS ID: L020.01)[89]

Measure Description
This measure reports the percentage of patient 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 that stay.

Measure Specifications[90]

Numerator

Total number of patient stays 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 and actual clinically significant medication issues were found during the review (N2001 = [0]); or

   b. Potential and 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 patient 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 patient was not taking any medications (N2005 = [9]).

Denominator

Any patient stays with a planned or unplanned discharge or expired assessment (A0250 = [10, 11, 12]) during the reporting period.

Exclusions

There are no denominator exclusions for this measure.

Covariates
None.

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[89] This measure was finalized for reporting by LTCHs under the FY 2017 IPPS/LTCH PPS final rule (81 FR 25215)

[90] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit DRR data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-9
Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay
(CMS ID: L022.01)[91]

Measure Description
This measure assesses facility-level compliance with Spontaneous Breathing Trial (SBT), including Tracheostomy Collar Trial (TCT) or Continuous Positive Airway Pressure (CPAP) breathing trial, by Day 2 of the Long-Term Care Hospital (LTCH) stay for patients on invasive mechanical ventilation support upon admission, and for whom at admission weaning attempts were expected or anticipated. This measure will be computed and reported separately according to each of the following components: - Component 1: Percentage of Patients Assessed for Readiness for SBT by Day 2 of the LTCH Stay   - Component 2: Percentage of Patients Ready for SBT Who Received SBT by Day 2 of LTCH Stay
Measure Specifications[92]

Numerator
 	
 • Component 1: Patients admitted on invasive mechanical ventilation for whom the LTCH admission assessment (A0250 = [01]) indicates:
 	
      o Completed assessment for readiness for SBT by day 2 of the LTCH stay (O0150B = [1] (yes)) and were either deemed medically ready (O0150C = [1] (yes)) OR
 	
      o Medically unready, with documentation of reason(s) (O0150D = [1] (Yes)).
 	
 • Component 2: Patients admitted on invasive mechanical ventilation for whom the LTCH admission assessment (A0250 = [01]) indicates SBT performed by day 2 of the LTCH stay (O0150E = [1] (yes)).
 	
 Denominator
 	
 • Component 1: Patients who were on invasive mechanical ventilation upon admission to an LTCH, for whom weaning attempts are expected or anticipated (O0150A = [1] (yes, weaning)).
 	
 • Component 2: The subset of patients in the denominator of Component 1, who were assessed and deemed ready for SBT by Day 2 of the LTCH stay (O0150B = [1] (yes) and O0150C = [1] (yes)).
 	
 Exclusions
 	
 Patient stay is excluded from both Component 1 and Component 2 if:
 	
 1. Patient stay is missing data to calculate the measure (O0150A = [-]), OR
 	
 2. Weaning attempts are not expected or anticipated at admission for the patient (O0150A = [0] (No, not invasive mechanical ventilation support), [2] (Yes, non-weaning)).

Table 7-10
Ventilator Liberation Rate (CMS ID: L023.01)[93]

Measure Description
This measure reports facility-level Ventilator Liberation Rate for patients admitted to an LTCH requiring invasive mechanical ventilation support, and for whom weaning attempts were expected or anticipated as reported on the Admission Assessment.

Measure Specifications[94]

Numerator

Patients who were reported as fully liberated (weaned) (O0200A = [1] (fully liberated at discharge)) on the LTCH CARE Data Set Planned or Unplanned Discharge Assessments (A0250 = [10, 11]).

Denominator

Patients who were on mechanical ventilation support for whom at admission weaning attempts were expected or anticipated (O0150A = [1] (yes, weaning)).

Exclusions

Patient stay is excluded if:

- Patient stay is missing data to calculate the measure (O0150A = [-]), OR

- Weaning attempts are not expected or anticipated at admission for the patient (O0150A = [0] (No, not invasive mechanical ventilation support), [2] (Yes, non-weaning)).

(continued)

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[93] This measure is finalized for reporting by LTCHs under the FY 2018 IPPS/LTCH PPS final rule (82 FR 38443 through 38446). The Ventilator Liberation Rate is defined as the percentage of patients who are alive and fully liberated (weaned) at discharge. A patient is considered fully liberated if he or she does not require any invasive mechanical ventilation support for at least 2 consecutive calendar days immediately prior to the date of discharge.

[94] Effective on July 1, 2018, the LTCH CARE Data Set Version 4.00 is used to collect and submit ventilator liberation data for the LTCH QRP. A copy of the LTCH CARE Data Set Version 4.00 is available for download on the CMS LTCH QRP website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/LTCH-CARE-Data-Set-and-LTCH-QRP-Manual.html.

Table 7-10 (continued)
Ventilator Liberation Rate (CMS ID: L023.01)

Covariates

Data for each covariate is derived from the admission assessment included in the target patient stay records.

1. **Age Groups** (Age is calculated based on the truncated difference between admission date (A0220) and birth date (A0900); i.e., the difference is not rounded to the nearest whole number. 65-74 years is the reference category):
   a. <55 years
   b. 55-64 years
   c. 65-74 years
   d. 75-84 years
   e. ≥ 85 years
2. **Prior Functioning: Everyday Activities, Indoor Mobility (Ambulation):**
   a. Covariate = [1] (yes) if GG0100B = [1] (Dependent)
   b. Covariate = [0] (no) if GG0100B = [3, 2, 8, 9] ([3] = independent, [2] = needed some help, [8] = unknown, [9] = not applicable)
3. **Metastatic Cancer**:
   a. Covariate = [1] (yes) if I0103 = 1 (checked)
   b. Else = [0] (No)
4. **Severe Cancer:**
   a. Covariate = [1] (yes) if I0104 = 1 (checked)
   b. Else = [0] (No)
5. **Left Ventricular Assistive Device with Known Ejection Fraction ≤ 30**%:
   a. Covariate = [1] (yes) if I0605 = 1 (checked)
   b. Else = [0] (No)
6. **Progressive Neuromuscular Disease**:
   a. Covariate = [1] (yes) if one or more of the following are true:
      i. I4900 – Hemiplegia or Hemiparesis = 1 (checked)
      ii. I5000 – Paraplegia = 1 (checked)
      iii. I5101 – Complete Tetraplegia = 1 (checked)
      iv. I5102 – Incomplete Tetraplegia = 1 (checked)
      v. I5110 – Other Spinal Cord Disorder/Injury = 1 (checked)
      vi. I5200 – Multiple Sclerosis (MS) = 1 (checked)
      vii. I5450 – Amyotrophic Lateral Sclerosis = 1 (checked)
      viii. I5455 – Other Progressive Neuromuscular Disease = 1 (checked)
   b. Else = [0] (No)

Table 7-10 (continued)
Ventilator Liberation Rate (CMS ID: L023.01)

Covariates

7. **Severe Neurological Injury, Disease, or Dysfunction**:
   a. Covariate = [1] (yes) if one or more of the following are true:
      i. I5470 – Severe Anoxic Brain Damage, Cerebral Edema, or Compression of Brain= 1 (checked)
      ii. I5480 – Other Severe Neurological Injury, Disease, or Dysfunction = 1 (checked)
   b. Else = [0] (No)
8. **Post-Transplant** (lung, heart, liver, kidney, and bone marrow):
   a. Covariate = [1] (yes) if one or more of the following are true:
      i. I7100 – Lung Transplant = 1 (checked)
      ii. I7101 – Heart Transplant = 1 (checked)
      iii. I7102 – Liver Transplant = 1 (checked)
      iv. I7103 – Kidney Transplant = 1 (checked)
      v. I7104 – Bone Marrow Transplant = 1 (checked)
   b. Else = [0] (No)
9. **Vasoactive Medication** (i.e. continuous infusions of vasopressors or inotropes):
   a. Covariate = [1] (yes) if:
      i. O0100H2a – Vasoactive Medications (e.g. continuous infusions of vasopressors or inotropes) = 1 (checked)
   b. Else = [0] (No)
10. **Dialysis**:
    a. Covariate = [1] (yes) if O0100J = 1 (checked)
    b. Else = [0] (No)

Appendix A:
Model Parameters

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Appendix A provides the following information:

- Tables listing the covariates and associated LTCH CARE Data Set 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 Long-Term Care Hospital Quality Reporting Program Measure Calculations and Reporting User's Manual (Risk-Adjustment Appendix File) (Section A.2).

- Procedure on how to use the Long-Term Care Hospital 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_**. Note that an "✓" 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
LTCH CARE Data Set 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*	Covariate Values*
Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay)	0678	I001.02	Pressure Ulcer	✓	✓
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury	N/A	I020.01	Pressure Ulcer/Injury	✓	✓
Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support	2632	L011.02	Change in Mobility	✓	✓
Ventilator Liberation Rate	N/A	L023.01	Ventilator Liberation	✓	✓

*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 LTCH CARE Data Set items used to calculate each covariate for assessment-based quality measures requiring risk-adjustment.

Table A-2
Risk-Adjustment Covariates for the Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678)

Covariate	LTCH CARE Data Set Item(s) and Calculations
Model Intercept	—
Functional Limitation	<u>For patient stays with a target date prior to 04/01/2016:</u> = 1 if GG0160C = [01, 02, 03, 04, 07, 09, 88] = 0 if GG0160C = [05, 06, -] <u>For patient stays with a target date on or after 04/01/2016:</u> = 1 if GG0170C = [01, 02, 03, 04, 07, 09, 88] = 0 if GG0170C = [05, 06, -]
Bowel Incontinence	= 1 if H0400 = [1, 2, 3] = 0 if H0400 = [0, 9, -]
Diabetes or PVD/PAD	= 1 if one or more of the following are true: • I0900A = [1] • I2900A = [1] = 0 if I0900A = [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 / height^2) = ([K0200B] * 703) / (K0200A^2) and the resulting value is rounded to one decimal place.

Table A-3
Risk-Adjustment Covariates for the Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury

Covariate	LTCH CARE Data Set Item(s) and Calculations
Model Intercept	—
Functional Limitation	= 1 if GG0170C = [01, 02, 07, 09, 10, 88] = 0 if GG0170C = [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 / height^2) = ([K0200B] * 703) / (K0200A^2) and the resulting value is rounded to one decimal place.

Table A-4
Risk-Adjustment Covariates for the Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632)

Risk Adjustor	Category	LTCH CARE Data Set Coding
Model Intercept	--	--
Age Group	<55 years	Truncate(A0220 – A0900) = age; If age < 55 years = 1; else = 0
Age Group	55–64 years	Truncate(A0220 – A0900) = age; If age 55-64 years = 1; else = 0
Age Group	65–74 years (reference category)	Truncate(A0220 – A0900) = age; If age 65-74 years = 1; else = 0
Age Group	75–84 years	Truncate(A0220 – A0900) = age; If age 75-84 years = 1; else = 0
Age Group	85+ years	Truncate(A0220 – A0900) = age; If age >= 85 years = 1; else = 0
Communication Impairment	Moderate to Severe	= [1] (Yes) if BB0700 (Expression of ideas and wants) = [1, 2] or [1] (Yes) if BB0800 (Understanding verbal content) = [1, 2] Else = [0] (No)
Prior functioning: indoor ambulation	Dependent	= [1] (Yes) if GG0100B = [1] (Dependent) Else = [0] (No)
Prior functioning: indoor ambulation	Some help	= [1] (Yes) if GG0100B = [2] (Needed some help) Else = [0] (No)
Prior Device Use	Manual Wheelchair or Motorized and/or Scooter	= [1] (Yes) if GG0110A (Manual wheelchair) = [1] or GG0110B (Motorized wheelchair or scooter) = [1] Else = [0] (No)
Prior Device Use	Mechanical Lift	= [1] (Yes) if GG0110C (Mechanical lift) = [1] Else = [0] (No)
Primary Medical Condition Category	Chronic respiratory condition	= [1] (Yes) if I0050 = [2] Else = [0] (No)
Primary Medical Condition Category	Acute onset and chronic respiratory conditions	= [1] (Yes) if I0050 = [3] Else = [0] (No)
Primary Medical Condition Category	Chronic cardiac condition	= [1] (Yes) if I0050 = [4] Else = [0] (No)
Primary Medical Condition Category	Other medical condition	= [1] (Yes) if I0050 = [5] Else = [0] (No)
Stage 3, 4, or unstageable pressure ulcer/injury	Presence	= [1] (Yes) if ([M0300C1 (Number of stage 3 pressure ulcers) > 0] or [M0300D1 (Number of stage 4 pressure ulcers) > 0] or [M0300E1 (Number of unstageable pressure ulcers due to non-removable dressing/device) > 0] or [M0300F1 (Number of unstageable pressure ulcers due to coverage of wound bed by slough and/or eschar) > 0] or [M0300G1 ((Number of unstageable pressure ulcers with suspected deep tissue injury in evolution) > 0]) Else = [0] (No)

(continued)

Risk-Adjustment Covariates for the Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632)

Risk Adjustor	Category	LTCH CARE Data Set Coding
Total Parenteral Nutrition on Admission	Yes	= [1] (Yes) if O0100N (Other Treatments: Total parenteral nutrition) = [1] Else = [0] (No)
Comorbidities	Severe and Metastatic Cancers	= [1] (Yes) if I0103 = [1] or I0104 = [1] Else = [0] (No)
Comorbidities	Dialysis and Chronic Kidney Disease, Stage 5	= [1] (Yes) if O0100J = [1] or I1501 = [1] Else = [0] (No)
Comorbidities	Acute Renal Failure	= [1] (Yes) if I1502 = [1] Else = [0] (No)
Comorbidities	Major Infections: Septicemia, Sepsis, Systematic Inflammatory Response Syndrome/Shock, Central Nervous System Infections, Opportunistic Infections, Bone/Joint/Muscle Infections/Necrosis	= [1] (Yes) if I2101 = [1] or I2600 = [1] Else = [0] (No)
Comorbidities	Diabetes Mellitus (DM)	= [1] (Yes) if I2900 = [1] Else = [0] (No)
Comorbidities	Major Lower Limb Amputation	= [1] (Yes) if I4100 = [1] Else = [0] (No)
Comorbidities	Stroke, Hemiplegia or Hemiparesis	= [1] (Yes) if I4501 = [1] or I4900 = [1] Else = [0] (No)
Comorbidities	Dementia	= [1] (Yes) if I4801 = [1] Else = [0] (No)
Comorbidities	Paraplegia, Incomplete Tetraplegia, Other Spinal Cord Disorder/Injury	= [1] (Yes) if I5000 = [1] or I5102 = [1] or I5110 = [1] Else = [0] (No)
Comorbidities	Malnutrition (protein or calorie)	= [1] (Yes) if I5601 = [1] Else = [0] (No)

Table A-5
Risk-Adjustment Covariates in the Hierarchical Logistic Regression Model (Predicted) for the Ventilator Liberation Rate

Risk Adjustor	Category	LTCH CARE Data Set Coding
Model Intercept (γ)	--	--
Age Group	<55 years	Truncate(A0220 – A0900) = age; If age < 55 years = 1; else = 0
Age Group	55–64 years	Truncate(A0220 – A0900) = age; If age 55-64 years = 1; else = 0
Age Group	65–74 years (reference category)	Truncate(A0220 – A0900) = age; If age 65-74 years = 1; else = 0
Age Group	75–84 years	Truncate(A0220 – A0900) = age; If age 75-84 years = 1; else = 0
Age Group	85+ years	Truncate(A0220 – A0900) = age; If age >= 85 years = 1; else = 0
Prior functioning: indoor ambulation	Dependent	= [1] (Yes) if GG0100B = [1] (Dependent) Else = [0] (No)
Comorbidities	Metastatic Cancer	= [1] (Yes) if I0103 = [1] Else = [0] (No)
Comorbidities	Severe Cancer	= [1] (Yes) if I0104 = [1] Else = [0] (No)
Comorbidities	Left Ventricular Assistive Device with Known Ejection Fraction ≤ 30%	= [1] (Yes) if I0605 = [1] Else = [0] (No)
Comorbidities	Progressive Neuromuscular Disease	= [1] (Yes) if I4900 = [1] or I5000 = [1] or I5101 = [1] or I5102 = [1] or I5110 = [1] or I5200 = [1] or I5450 = [1] or I5455 = [1] Else = [0] (No)
Comorbidities	Severe Neurological Injury, Disease, or Dysfunction	= [1] (Yes) if I5470 = [1] or I5480 = [1] Else = [0] (No)
Comorbidities	Post-Transplant	= [1] (Yes) if I7100 = [1] or I7101 = [1] or I7102 = [1] or I7103 = [1] or I7104 = [1] Else = [0] (No)
Other Treatments	Vasoactive Medication	= [1] (Yes) if O0100H2a = [1] Else = [0] (No)
Other Treatments	Dialysis	= [1] (Yes) if O0100J = [1] Else = [0] (No)

Table A-6
Risk-Adjustment Covariates in the Logistic Regression Model (Expected) for the Ventilator Liberation Rate

Risk Adjustor	Category	LTCH CARE Data Set Coding
Model Intercept (β_0)	--	--
Age Group	<55 years	Truncate(A0220 – A0900) = age; If age < 55 years = 1; else = 0
Age Group	55–64 years	Truncate(A0220 – A0900) = age; If age 55-64 years = 1; else = 0
Age Group	65–74 years (reference category)	Truncate(A0220 – A0900) = age; If age 65-74 years = 1; else = 0
Age Group	75–84 years	Truncate(A0220 – A0900) = age; If age 75-84 years = 1; else = 0
Age Group	85+ years	Truncate(A0220 – A0900) = age; If age >= 85 years = 1; else = 0
Prior functioning: indoor ambulation	Dependent	= [1] (Yes) if GG0100B = [1] (Dependent) Else = [0] (No)
Comorbidities	Metastatic Cancer	= [1] (Yes) if I0103 = [1] Else = [0] (No)
Comorbidities	Severe Cancer	= [1] (Yes) if I0104 = [1] Else = [0] (No)
Comorbidities	Left Ventricular Assistive Device with Known Ejection Fraction ≤ 30%	= [1] (Yes) if I0605 = [1] Else = [0] (No)
Comorbidities	Progressive Neuromuscular Disease	= [1] (Yes) if I4900 = [1] or I5000 = [1] or I5101 = [1] or I5102 = [1] or I5110 = [1] or I5200 = [1] or I5450 = [1] or I5455 = [1] Else = [0] (No)
Comorbidities	Severe Neurological Injury, Disease, or Dysfunction	= [1] (Yes) if I5470 = [1] or I5480 = [1] Else = [0] (No)
Comorbidities	Post-Transplant	= [1] (Yes) if I7100 = [1] or I7101 = [1] or I7102 = [1] or I7103 = [1] or I7104 = [1] Else = [0] (No)
Other Treatments	Vasoactive Medication	= [1] (Yes) if O0100H2a = [1] Else = [0] (No)
Other Treatments	Dialysis	= [1] (Yes) if O0100J = [1] Else = [0] (No)

Table A-7
LTCH-Specific Intercepts in the Hierarchical Logistic Regression Model (Predicted) for the Ventilator Liberation Rate

CMS Certification Number (CCN)	Intercept (μ) [95]
Refer to the associated risk-adjustment appendix file for the intercept for each LTCH CCN.	This value is unique to each LTCH. It is used in Equation 2 as μ below: [1] Predicted score $= \propto + \beta_1(COV_1) + \cdots + \beta_n(COV_n)$ [2] $\propto = \gamma + \mu$ See Section 6.10 for more details.

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

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 LTCH 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 Long-Term Care Hospital Quality Reporting Program Measure Calculations and Reporting User's Manual V3.0. 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 Long-Term Care Hospital 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 Long-Term Care Hospital Quality Reporting Program Measure Calculations and Reporting User's Manual posting on the LTCH 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 document 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 this document.

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 Long-Term Care Hospital 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 score. Steps to calculate the risk-adjusted quality measure may vary by each measure. The following procedure contain the general steps:

1. Utilize the record selection guidance as listed in Chapter 4 Record Selection for Assessment-Based Quality Measures (LTCH CARE Data Set) in this manual.
2. Follow the guidance for the version or versions of the LTCH CARE Data Set applicable to the assessment dates (based on discharge date) required for your calculation found in Chapter 5, Section 5.3: Measure Calculations During the Transition from LTCH CARE Data Set V3.00 to LTCH CARE Data Set V4.00.
3. Use the specific calculation steps provided in Chapter 6 Measure Calculations for Assessment-Based Quality Measures (LTCH CARE Data Set) for the measure(s).
   a. Refer to Appendix A on details to calculate the covariates for each quality measure.
4. 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.
5. 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.
6. 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 4-6): LTCH Functional Outcome Measure: Change in Mobility Score among Patients Requiring Ventilator Support (NQF #2632)

- LTCH CARE Data Set record had a discharge date of 06/15/2017
- In the Schedule tab of the Risk-Adjustment Appendix File, refer to the Change in Mobility measure.
  - The discharge date of 06/15/2017 is within the discharge date range for Risk-Adjustment Update ID 1 (04/01/2016 – 09/30/2018). Therefore, the user should use the information provided in the Risk-Adjustment ID 1 column.
- Select the Change in Mobility 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 Change in Mobility national average observed score.