

August 2015

Long-Term Care Hospital Quality Reporting Program - Specifications for the Quality Measures Adopted through the Fiscal Year 2016 Final Rule

Prepared for

Center for Clinical Standards and Quality
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244-1850

CMS Contract No. HHSM-500-2013-13015I (HHSM-500-T0001)



LONG-TERM CARE HOSPITAL QUALITY REPORTING PROGRAM:
SPECIFICATIONS FOR THE QUALITY MEASURES ADOPTED THROUGH THE FISCAL
YEAR 2016 FINAL RULE

RTI International

CMS Contract No. HHSM-500-2013-13015I

August 2015

This project was funded by the Centers for Medicare & Medicaid Services under contract no. HHSM-500-2013-13015I (HHSM-500-T0001).

TABLE OF CONTENTS

Section 1 Cross-Setting Measures Development Work: An Introduction.....	1
Section 2 Quality Measures	3
2.1 Cross-setting Function Quality Measure: Application of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631).....	3
2.1.1 Quality Measure Description	3
2.1.2 Purpose/Rationale for the Quality Measure.....	3
2.1.3 Denominator	6
2.1.4 Numerator	7
2.1.5 Items Included in the Quality Measure.....	8
2.1.6 Quality Measure Calculation Algorithm.....	10
2.1.7 Risk Adjustment.....	10
2.2 Cross-Setting Pressure Ulcer Measure: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (NQF #0678)	11
2.2.1 Quality Measure Description	11
2.2.2 Purpose/Rationale for Quality Measure.....	11
2.2.3 Denominator	14
2.2.4 Numerator	15
2.2.5 Measure Time Window.....	16
2.2.6 Risk Adjustment Covariates	16
2.2.7 Quality Measure Calculation Algorithm.....	19
2.3 Cross-Setting Falls with Major Injury Measure: Application of Percent of Residents Experiencing One or More Falls with Major Injury (NQF #0674).....	23
2.3.1 Quality Measure Description	23
2.3.2 Purpose/Rationale for Quality Measure.....	23
2.3.3 Denominator	24
2.3.4 Numerator	25
2.3.5 Items Included in the Quality Measure	25
2.3.6 Risk Adjustment.....	26
2.3.7 Quality Measure Calculation Algorithm.....	26
2.4 Quality Measure: All-Cause Unplanned Readmission Measure for 30 Days Post-Discharge from Long-Term Care Hospitals (NQF #2512).....	28
2.4.1 Quality Measure Description	28

Appendices

A	Self-Care and Mobility Items Included in Section GG of the IRF-PAI, MDS 3.0, LTCH Care Data Set.....	29
B	Function Items Included in the Process Function Quality Measure for IRF, SNF, and LTCH Quality Reporting Programs.....	31

SECTION 1

CROSS-SETTING MEASURES DEVELOPMENT WORK: AN INTRODUCTION

Section 3004(a) of the Affordable Care Act amended section 1886(m)(5) of the Act, requiring the Secretary to establish the Long-Term Care Hospital Quality Reporting Program (LTCH QRP). This program applies to all hospitals certified by Medicare as LTCHs. Beginning with the Fiscal Year 2014 payment determination and subsequent years, the Secretary is required to reduce any annual update to the standard Federal rate for discharges occurring during such fiscal year by 2 percentage points for any LTCH that does not comply with the requirements established by the Secretary. For information on the statutory history and requirements of the LTCH QRP, please refer to the <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/LTCH-Quality-Reporting/>.

Additionally, the Improving Medicare Post-Acute Care Transformation Act of 2014 (Pub. L. 113-185) (the IMPACT Act of 2014) amended the Act in ways that affect the LTCH QRP. Specifically, section 2(a) of the IMPACT Act of 2014 added section 1899B of the Act, and section 2(c)(3) of the IMPACT Act of 2014 amended section 1886(m)(5) of the Act. Sections 1899B(c)(1) and (d)(1) of the Act direct the Secretary to specify measures that relate to at least five (5) stated quality domains and three (3) stated resource use and other measure domains. The IMPACT Act of 2014 also requires, to the extent possible, the submission of such quality measure data through the use of a Post-Acute Care (PAC) assessment instrument and the modification of such instrument as necessary to enable such use. For LTCHs, this requirement refers to the Long-Term Care Hospital Continuity Assessment Record and Evaluation Data Set (LTCH CARE Data Set) which is currently in use for the collection and submission of quality data to the Centers for Medicare & Medicaid Services (CMS) as part of the LTCH QRP. For a detailed discussion of the IMPACT Act of 2014 as it pertains to the selection and the adoption of quality measures for the LTCH QRP, please review the FY 2016 IPPS/LTCH PPS final rule.

In this document, we present specifications for the following four (4) quality measures adopted for the LTCH QRP through the FY 2016 IPPS/LTCH PPS final rule:

1. Process Measure: Application of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631, Measure Steward: CMS);
2. Outcome Measure: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (NQF #0678, Measure Steward: CMS);
3. Outcome Measure: Application of Percent of Residents Experiencing One of More Falls with Major Injury (Long Stay) (NQF #0674, Measure Steward: CMS); and
4. All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Long-Term Care Hospitals (NQF #2512, Measure Steward: CMS).

[This page intentionally left blank.]

SECTION 2 QUALITY MEASURES

2.1 Cross-setting Function Quality Measure: Application of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631)

2.1.1 Quality Measure Description

The cross-setting function quality measure is a process measure that is an application of the quality measure Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631). This quality measure reports the percent of patients/residents with an admission and a discharge functional assessment and a treatment goal that addresses function. The treatment goal provides evidence that a care plan with a goal has been established for the patient/resident.

This process quality measure requires the collection of admission and discharge functional status data by clinicians using standardized clinical assessment items or data elements that assess specific functional activities, that is, self-care and mobility activities. The self-care and mobility function items are coded using a 6-level rating scale that indicates the patient's/resident's level of independence with the activity. A higher score indicates greater independence. If an activity is not attempted, the reason that the activity did not occur is coded. For this quality measure, documentation of a goal for one of the function items reflects that the patient's/resident's care plan addresses function. The functional goal is recorded at admission for at least one of the standardized self-care or mobility function items using the 6-level rating scale. Subsequent to the admission assessment, goal setting and establishment of a care plan to achieve the goal, at the time of discharge the self-care and mobility functional performance is reassessed using the same 6-level rating scale, enabling the ability to re-assess the patient's/resident's functional abilities.

This quality measure is calculated using data from the Minimum Data Set 3.0 (MDS 3.0) assessment instrument for Skilled Nursing Facility (SNF) residents, the Long-Term Care Hospital (LTCH) Continuity Assessment Record & Evaluation (CARE) Data Set for LTCH patients, and the Inpatient Rehabilitation Facility - Patient Assessment Instrument (IRF-PAI) for IRF patients. Data will be collected separately in each of the three settings using standardized items that have been added to the MDS 3.0, LTCH CARE Data Set, and IRF-PAI. Table 1 in Appendix A shows the standardized items that are included in each data set for this quality measure. Further, CMS will conduct data analyses for measure calculation and measure reporting separately for each of the three settings.

2.1.2 Purpose/Rationale for the Quality Measure

Section 1899B(c)(1) of the Act directs the Secretary to specify quality measures on which PAC providers are required under the applicable reporting provisions to submit standardized patient/resident assessment data and other necessary data specified by the Secretary with respect to five (5) quality domains, one of which is functional status, cognitive function, and changes in function and cognitive function. To satisfy these requirements, we are adopting an application of

the quality measure Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631) as a cross-setting quality measure that addresses the domain of functional status, cognitive function, and changes in function and cognitive function. This quality measure reports the percent of patients/residents with an admission and a discharge functional assessment and a goal that addresses function.

The National Committee on Vital and Health Statistics, Subcommittee on Health¹, noted: “[i]nformation on functional status is becoming increasingly essential for fostering healthy people and a healthy population. Achieving optimal health and well-being for Americans requires an understanding across the life span of the effects of people's health conditions on their ability to do basic activities and participate in life situations, that is, their functional status.” This statement is supported by research showing that patient functioning is associated with important patient outcomes such as discharge destination and length of stay in inpatient settings² as well as risk of nursing home placement and hospitalization of older adults living in the community.³ Functioning is important to patients/residents and their family members.^{4,5,6}

The majority of patients/residents who receive PAC services, such as care provided by SNFs, LTCHs and IRFs, have functional limitations, and many of these patients/residents are at risk for further decline in function due to limited mobility and ambulation.⁷ The patient/resident populations treated by SNFs, LTCHs, and IRFs vary in terms of their functional abilities at the time of the PAC admission and their goals of care. For IRF patients and many SNF residents, treatment goals may include fostering the patient's/resident's ability to manage his or her daily activities so that the patient/resident can complete self-care and/or mobility activities as independently as possible, and if feasible, return to a safe, active, and productive life in a community-based setting. Lastly, in addition to having complex medical care needs for an extended period of time, LTCH patients often have limitations in functioning because of the nature of their conditions, as well as deconditioning due to prolonged bed rest and treatment requirements (for example, ventilator use). The clinical practice guideline *Assessment of*

¹ Subcommittee on Health National Committee on Vital and Health Statistics, "Classifying and Reporting Functional Status" (2001).

² Reistetter T. A., Graham J. E., Granger C. V., Deutsch A, Ottenbacher K. J. Utility of Functional Status for Classifying Community Versus Institutional Discharges after Inpatient Rehabilitation for Stroke. *Archives of Physical Medicine and Rehabilitation*, 2010; 91:345-350.

³ Miller E.A., Weissert W. G. Predicting Elderly People's Risk for Nursing Home Placement, Hospitalization, Functional Impairment, and Mortality: A Synthesis. *Medical Care Research and Review*, 57; 3: 259-297.

⁴ Kurz, A. E., Saint-Louis, N., Burke, J. P., & Stineman, M. G. (2008). Exploring the personal reality of disability and recovery: a tool for empowering the rehabilitation process. *Qual Health Res*, 18(1), 90-105.

⁵ Kramer, A. M. (1997). Rehabilitation care and outcomes from the patient's perspective. *Med Care*, 35(6 Suppl), JS48-57.

⁶ Stineman, M. G., Rist, P. M., Kurichi, J. E., & Maislin, G. (2009). Disability meanings according to patients and clinicians: imagined recovery choice pathways. *Quality of Life Research*, 18(3), 389-398.

⁷ Kortebein P, Ferrando A, Lombebeida J, Wolfe R, Evans WJ. Effect of 10 days of bed rest on skeletal muscle in health adults. *JAMA*; 297(16):1772-4.

*Physical Function*⁸ recommends that clinicians should document functional status at baseline and over time to validate capacity, decline, or progress. Therefore, assessment of functional status at admission and discharge and establishing a functional goal for discharge as part of the care plan (i.e., treatment plan) is an important aspect of patient/resident care for all of these PAC providers.

Given the variation in patient/resident populations across the PAC providers, the functional activities that are typically assessed by clinicians for each type of PAC provider may vary. For example, the activity of rolling left and right in bed is an example of a functional activity that may be most relevant for low-functioning patients/residents who are chronically critically ill. However, certain functional activities, such as eating, oral hygiene, lying to sitting on the side of the bed, toilet transfers, and walking or wheelchair mobility, are important activities for patients/residents in each PAC provider. As previously noted, Table 1, in Appendix A, shows the standardized function items that are included in each data set for this quality measure.

Although functional assessment data are currently collected in SNFs, LTCHs, and IRFs, this data collection has employed different assessment instruments, scales, and items. The data collected cover similar topics, but are not standardized across PAC settings. Further, the different sets of functional assessment items are coupled with different rating scales, making communication about patient/resident functioning challenging when patients/residents transition from one type of provider to another. Collection of standardized functional assessment data across SNFs, LTCHs, and IRFs, using standardized data items, would establish a common language for patient/resident functioning, which may facilitate communication and care coordination as patients/residents transition from one type of provider to another. The collection of standardized functional status data may also help improve patient/resident functioning during an episode of care by ensuring that basic daily activities are assessed at the start and end of each episode of care with the aim of determining whether at least one functional goal is established.

The functional assessment items included in the functional status quality measure were originally developed and tested as part of the Post-Acute Care Payment Reform Demonstration (PAC PRD) version of the Continuity Assessment Record and Evaluation (CARE) Item Set, which was designed to standardize assessment of patient's/resident's status across acute and post-acute providers, including SNFs, HHAs, LTCHs, and IRFs. The functional status items on the CARE Item Set are daily activities that clinicians typically assess at the time of admission and/or discharge to determine patients'/residents' needs, evaluate patient/resident progress and prepare patients/residents and families for a transition to home or to another provider.

The development of the CARE Item Set and a description and rationale for each item is described in a report entitled "The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set: Final Report on the Development of the CARE Item

⁸ Kresevic D. M. Assessment of physical function. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 89-103.

Set: Volume 1 of 3."⁹ Reliability and validity testing were conducted as part of CMS' Post-Acute Care Payment Reform Demonstration, and we concluded that the functional status items have acceptable reliability and validity. A description of the testing methodology and results are available in several reports, including the report entitled "The Development and Testing of the Continuity Assessment Record And Evaluation (CARE) Item Set: Final Report On Reliability Testing: Volume 2 of 3"¹⁰ and the report entitled "The Development and Testing of The Continuity Assessment Record And Evaluation (CARE) Item Set: Final Report on Care Item Set and Current Assessment Comparisons: Volume 3 of 3."¹¹ The reports are available on CMS' Post-Acute Care Quality Initiatives webpage at: <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/CARE-Item-Set-and-B-CARE.html>.

The function items to collect data for this cross-setting quality measure are some of the same items that are used to calculate other LTCH function quality measures. For example, function items to collect data for the quality measure Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631)¹² includes all of the items in the cross-setting *application* of this quality measure plus some additional items. Table 2, in Appendix B, shows the function items included in this SNF, LTCH, and IRF cross-setting function process measure, an *Application* of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631), and the quality measure Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631).

2.1.3 Denominator

Specific denominator definitions for each setting are provided below. There are no denominator exclusion criteria for this measure.

SNF Denominator: The denominator is the number of Medicare Part A covered resident stays.

LTCH Denominator: The denominator is the number of LTCH patient stays.

IRF Denominator: The denominator is the number of Medicare (Part A and Part C) patient stays.

⁹ Barbara Gage et al., "The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set: Final Report on the Development of the CARE Item Set" (RTI International, 2012).

¹⁰ Ibid.

¹¹ Ibid.

¹² This process measure was adopted for the LTCH QRP through the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

2.1.4 Numerator

The numerator for this quality measure is the number of patient/resident stays with functional assessment data for each self-care and mobility activity and at least one self-care or mobility goal.

To the extent that a patient/resident has an incomplete stay (for example, for the purpose of being admitted to an acute care facility), collection of discharge functional status data might not be feasible. Therefore, for patients/residents with incomplete stays, admission functional status data and at least one treatment goal would be required, discharge functional status data would not be required to be reported.

Patients/residents with complete and incomplete stays are included in the numerator for this quality measure.

For patients or residents with complete stays:

All patients/residents not meeting the criteria for incomplete stays will be considered complete stays. For patients/residents with a complete stay, all three of the following are required for the patient/resident to be counted in the numerator:

1. A valid numeric score indicating the patient's/resident's functional status, or a valid code indicating the activity was not attempted or could not be assessed for each of the functional assessment items on the admission assessment;
2. A valid numeric score, which is a discharge goal indicating the patient's/resident's expected level of independence, for at least one self-care or mobility item on the admission assessment; and
3. A valid numeric score indicating the patient's/resident's functional status, or a valid code indicating the activity was not attempted or could not be assessed, for each of the functional assessment items on the discharge assessment.

For patients or residents with incomplete stays:

For patients/residents who have an incomplete stay, discharge data are not required to be reported. Patients/residents who have incomplete stays are defined as those patients/residents: (1) with incomplete stays due to a medical emergency, (2) who leave the SNF, LTCH, IRF against medical advice, or (3) who die while in the SNF, LTCH, IRF. Discharge functional status data are not required to be reported for these patients/residents because these data might not be feasible to collect at the time of the medical emergency if the patient/resident dies or if the patient/resident leaves against medical advice.

The following are required for the patients/residents who have an incomplete stay to be counted in the numerator:

1. A valid numeric score indicating the patient's/resident's functional status, or a valid code indicating the activity was not attempted or could not be assessed for each of the functional assessment items on the admission assessment; and

2. A valid numeric score, which is a discharge goal indicating the patient's/resident's expected level of independence, for at least one self-care or mobility item on the admission assessment.

2.1.5 Items Included in the Quality Measure

An important consideration when measuring functional status is that certain activities may not be relevant or feasible to assess for all patients/residents in all types of settings. For example, walking may not occur on admission in a PAC setting because it is not safe for a patient/resident to ambulate. In this situation, a clinician would code that a functional activity was not attempted because it was not safe or feasible for the patient/resident to perform the activity.

The following functional status items are included in this measure:

Self-Care Items

Eating (GG0130A): The ability to use suitable utensils to bring food to the mouth and swallow food once the meal is presented on a table/tray. Includes modified food consistency.

Oral hygiene (GG0130B): The ability to use suitable items to clean teeth. [Dentures (if applicable): The ability to remove and replace dentures from and to the mouth, and manage equipment for soaking and rinsing them.]

Toileting hygiene (GG0130C): The ability to maintain perineal hygiene, adjust clothes before and after using the toilet, commode, bedpan or urinal. If managing an ostomy, include wiping the opening but not managing equipment.

Mobility Items

Sit to lying (GG0170B): The ability to move from sitting on side of bed to lying flat on the bed.

Lying to sitting on side of bed (GG0170C): The ability to safely move from lying on the back to sitting on the side of the bed with feet flat on the floor, and with no back support.

Sit to stand (GG0170D): The ability to safely come to a standing position from sitting in a chair or on the side of the bed.

Chair/bed-to-chair transfer (GG0170E): The ability to safely transfer to and from a bed to a chair (or wheelchair).

Toilet transfer (GG0170F): The ability to safely get on and off a toilet or commode.

For patients/residents who are walking, complete the following items:

Walk 50 feet with two turns (GG0170J): Once standing, the ability to walk at least 50 feet and make two turns.

Walk 150 feet (GG0170K): Once standing, the ability to walk at least 150 feet in a corridor or similar space.

For patients/residents who use a wheelchair, complete the following items:

Wheel 50 feet with two turns (GG0170R): Once seated in wheelchair/scooter, the ability to wheel at least 50 feet and make two turns.

Indicate the type of wheelchair/scooter used (GG0170RR).

0. Manual

1. Motorized

Wheel 150 feet (GG0170S): Once seated in wheelchair/scooter, the ability to wheel at least 150 feet in a corridor or similar space.

Indicate the type of wheelchair/scooter used (GG0170SS).

0. Manual

1. Motorized

Self-Care and Mobility Rating Scale: Codes and Code Definitions

- 6. Independent**—Patient/resident completes the activity by him/herself with no assistance from a helper.
- 5. Setup or clean-up assistance**—Helper SETS UP or CLEANS UP; patient/resident completes activity. Helper assists only prior to or following the activity.
- 4. Supervision or touching assistance**—Helper provides VERBAL CUES or TOUCHING/ STEADYING assistance as patient/resident completes activity. Assistance may be provided throughout the activity or intermittently.
- 3. Partial/moderate assistance**—Helper does LESS THAN HALF the effort. Helper lifts, holds, or supports trunk or limbs, but provides less than half the effort.
- 2. Substantial/maximal assistance**—Helper does MORE THAN HALF the effort. Helper lifts, holds or supports trunk or limbs and provides more than half the effort.

- 1. Dependent**—Helper does ALL of the effort. Patient/resident does none of the effort to complete the activity. Or the assistance of 2 or more helpers is required for the patient/resident to complete the activity.

If activity was not attempted, code reason:

07. Patient/resident refused

09. Not applicable

88. Not attempted due to medical condition or safety concerns

2.1.6 Quality Measure Calculation Algorithm

1. For each provider, the stay records of patients/residents meeting the inclusion criteria (i.e., denominator) discharged during the 12 month target time period are identified and counted. This count is the denominator.
2. The records of patients/residents with complete stays are identified and the number of these patient/resident stays with complete admission functional assessment data (codes 1 through 6 or 7, 9 or 88) AND at least one self-care or mobility goal (codes 1 through 6) AND complete discharge functional assessment data (codes 1 through 6 or 7, 9 or 88) is counted.
3. The records of patients/residents with incomplete stays are identified, and the number of these patient/resident records with complete admission functional status data (codes 1 through 6 or 7, 9 or 88) AND at least one self-care or mobility goal (codes 1 through 6) is counted.
4. The counts from step 2 (complete stays) and step 3 (incomplete stays) are summed. The sum is the numerator count.
5. The numerator count is divided by the denominator count to calculate this quality measure, and converted to a percent value by multiplying by 100.

2.1.7 Risk Adjustment

This quality measure is a process measure and is not risk adjusted. The Technical Expert Panel that reviewed this measure did not recommend that this measure be risk-adjusted, because completion of a functional assessment is not affected by the medical and functional complexity of the patient/resident. Rather, clinicians are able to report that an activity was not attempted due to a medical condition or a safety concern, and clinicians take this complexity into account when setting goals. Further, we are aware that patients/residents may have acute events that trigger unplanned discharges, and this measure does not require a functional assessment to be completed in these circumstances. Finally, we have included skip patterns on the assessment instrument that take into account patient/resident complexity. For example, we have a gateway item that asks if the patient/resident walks. If the patient/resident does not walk, then, several items applicable to patient/resident who walks, is skipped for this patient/resident on the assessment instrument. Therefore, risk adjustment of this quality measure is not warranted.

2.2 Cross-Setting Pressure Ulcer Measure: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (NQF #0678)

2.2.1 Quality Measure Description

This quality measure reports the percent of patients/short-stay residents with Stage 2-4 pressure ulcers that are new or worsened since admission. The measure is calculated using data from the MDS 3.0 assessment instrument for SNF residents, the LTCH CARE Data Set for LTCH patients, and the IRF-PAI for IRF patients. Data are collected separately in each of the three settings using standardized items that have been harmonized across the MDS 3.0, LTCH CARE Data Set, and IRF-PAI. For residents in a SNF, the measure is calculated by examining all assessments during an episode of care for reports of Stage 2-4 pressure ulcers that were not present or were at a lesser stage since admission. For patients in LTCHs and IRFs, this measure reports the percent of patient stays with reports of Stage 2-4 pressure ulcers that were not present or were at a lesser stage on admission.

Of note, data collection and measure calculation for this measure is conducted separately for each of the three provider settings and will not be combined across settings.

For SNF residents, this measure is restricted to the short-stay population defined as those who have accumulated 100 or fewer days in the SNF as of the end of the measure time window. In IRFs, this measure is limited to Medicare (Part A and Part C) patients. In LTCHs, this measure includes all patients.

2.2.2 Purpose/Rationale for Quality Measure

This quality measure is adopted as a cross-setting quality measure to meet the requirements of the IMPACT Act of 2014 addressing the domain of skin integrity and changes in skin integrity. Data reporting for this measure would affect the payment determination for the FY 2018 and subsequent years for the SNF, LTCH, and IRF. This measure has previously been successfully implemented in SNF/NHs, LTCHs and IRFs. It has been implemented in the CMS Nursing Home Quality Initiative using the MDS since 2011, and is currently publicly reported on CMS' Nursing Home Compare at: <http://www.medicare.gov/nursinghomecompare/search.html>. In addition, the measure was adopted for the LTCH QRP in the FY 2012 IPPS/LTCH PPS final rule (76 FR 51753 through 51756) for the FY 2014 and subsequent years payment determination, and for IRF QRP in the FY 2012 IRF PPS final rule (76 FR 47876 through 47878) for the FY 2014 and subsequent years payment determination. The data for this measure have been collected and submitted by LTCHs and IRFs (using the LTCH CARE Data Set and IRF-PAI, respectively) since October 1, 2012.

This measure is intended to encourage SNF/Nursing Homes (NHs), LTCHs, and IRFs to prevent pressure ulcer development or worsening, and to closely monitor and appropriately treat existing pressure ulcers.

Pressure ulcers are recognized as a serious medical condition. Considerable evidence exists regarding the seriousness of pressure ulcers, and the relationship between pressure ulcers

and pain, decreased quality of life, and increased mortality in aging populations.^{13,14,15,16} Pressure ulcers interfere with activities of daily living and functional gains made during rehabilitation, predispose patients to osteomyelitis and septicemia, and are strongly associated with longer hospital stays, longer IRF stays, and mortality.^{17,18,19} Additionally, patients with acute care hospitalizations related to pressure ulcers are more likely to be discharged to long-term care facilities (e.g., a nursing facility, an intermediate care facility, or a nursing home) than hospitalizations for all other conditions.^{20,21}

Pressure ulcers typically result from prolonged periods of uninterrupted pressure on the skin, soft tissue, muscle, or bone.^{17,21,22} Elderly individuals in SNFs/NHs, LTCHs, and IRFs have a wide range of impairments or medical conditions that increase their risk of developing pressure ulcers, including but not limited to, impaired mobility or sensation, malnutrition or under-nutrition, obesity, stroke, diabetes, dementia, cognitive impairments, circulatory diseases, and dehydration. The use of wheelchairs and medical devices (e.g., hearing aid, feeding tubes, tracheostomies, percutaneous endoscopic gastrostomy tubes), a history of pressure ulcers, or

-
- ¹³ Casey, G. (2013). "Pressure ulcers reflect quality of nursing care." *Nurs N Z* 19(10): 20-24.
- ¹⁴ Gorzoni, M. L. and S. L. Pires (2011). "Deaths in nursing homes." *Rev Assoc Med Bras* 57(3): 327-331.
- ¹⁵ Thomas, J. M., et al. (2013). "Systematic review: health-related characteristics of elderly hospitalized adults and nursing home residents associated with short-term mortality." *J Am Geriatr Soc* 61(6): 902-911.
- ¹⁶ White-Chu, E. F., et al. (2011). "Pressure ulcers in long-term care." *Clin Geriatr Med* 27(2): 241-258.
- ¹⁷ Bates-Jensen BM. Quality indicators for prevention and management of pressure ulcers in vulnerable elders. *Ann Int Med.* 2001;135 (8 Part 2), 744-51.
- ¹⁸ Park-Lee E, Caffrey C. Pressure ulcers among nursing home residents: United States, 2004 (NCHS Data Brief No. 14). Hyattsville, MD: National Center for Health Statistics, 2009. Available from <http://www.cdc.gov/nchs/data/databriefs/db14.htm>.
- ¹⁹ Wang, H., et al. (2014). "Impact of pressure ulcers on outcomes in inpatient rehabilitation facilities." *Am J Phys Med Rehabil* 93(3): 207-216.
- ²⁰ Hurd D, Moore T, Radley D, Williams C. Pressure ulcer prevalence and incidence across post-acute care settings. Home Health Quality Measures & Data Analysis Project, Report of Findings, prepared for CMS/OCSQ, Baltimore, MD, under Contract No. 500-2005-000181 TO 0002. 2010.
- ²¹ Institute for Healthcare Improvement (IHI). Relieve the pressure and reduce harm. May 21, 2007. Available from <http://www.ihl.org/IHI/Topics/PatientSafety/SafetyGeneral/ImprovementStories/FSRelievethePressureandReduceHarm.htm>.
- ²² Russo CA, Steiner C, Spector W. Hospitalizations related to pressure ulcers among adults 18 years and older, 2006 (Healthcare Cost and Utilization Project Statistical Brief No. 64). December 2008. Available from <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb64.pdf>.

presence of a pressure ulcer at admission are additional factors that increase pressure ulcer risk in elderly patients.^{13,17,18,20,23,24,25,26,27,28,29,30}

Pressure ulcers are high-cost adverse events across the spectrum of health care settings, from acute hospitals to home health.^{17,20,22} Pressure ulcer incidence rates vary considerably by clinical setting, ranging from 0.4% to 38% in acute care, 2.2% to 23.9% in (SNFs and NHs, and 0% to 17% in home care.^{23,21} No national survey of pressure ulcer incidence or prevalence has been conducted in LTCHs or IRFs. However, a study evaluating 2009 Medicare FFS claims data from post-acute care facilities found 15,995 secondary diagnosis claims of Stage 3 or 4 pressure ulcers in LTCHs 2,342 secondary diagnosis claims of Stage 3 or 4 pressure ulcers in IRFs; and 9,939 secondary diagnosis claims of Stage 3 or Stage 4 pressure ulcers in SNFs.³¹ Additionally, analysis of LTCH CARE Data Set (for admissions and discharges between October 1, 2012 through March 31, 2014) and IRF-PAI data (for IRF-PAI assessments between October 1, 2012 through March 31, 2014) conducted by CMS's measure development contractor, RTI International, suggests median risk-adjusted incidence of new or worsened pressure ulcers ranging from 1.88% to 2.01% and 0.73% to 1.02% per 12-month measure calculation period in LTCHs and IRFs, respectively.

As reported in the Federal Register, in 2006 the average cost for a hospital stay related to pressure ulcers was \$40,381.³² The Advancing Excellence in America's Nursing Homes Campaign reported that it can cost as much as \$19,000 to treat a single Stage 4 pressure ulcer.³³ Using data from 2009 and 2010, severe (Stage 3 and Stage 4) pressure ulcers acquired during a

²³ Agency for Healthcare Research and Quality (AHRQ). Agency news and notes: pressure ulcers are increasing among hospital patients. January 2009. Available from <http://www.ahrq.gov/research/jan09/0109RA22.htm>.

²⁴ Cai, S., et al. (2013). "Obesity and pressure ulcers among nursing home residents." *Med Care* 51(6): 478-486.

²⁵ DeJong, G., et al. (2014). "Factors Associated with Pressure Ulcer Risk in Spinal Cord Injury Rehabilitation." *Am J Phys Med Rehabil*. 2014 May 29. [Epub ahead of print]

²⁶ MacLean DS. Preventing & managing pressure sores. *Caring for the Ages*. March 2003;4(3):34-7. Available from <http://www.amda.com/publications/caring/march2003/policies.cfm>.

²⁷ Michel, J. M., et al. (2012). "As of 2012, what are the key predictive risk factors for pressure ulcers? Developing French guidelines for clinical practice." *Ann Phys Rehabil Med* 55(7): 454-465.

²⁸ National Pressure Ulcer Advisory Panel (NPUAP) Board of Directors; Cuddigan J, Berlowitz DR, Ayello EA (Eds). *Pressure ulcers in America: prevalence, incidence, and implications for the future. An executive summary of the National Pressure Ulcer Advisory Panel Monograph*. *Adv Skin Wound Care*. 2001;14(4):208-15.

²⁹ Reddy, M. (2011). "Pressure ulcers." *Clin Evid (Online)* 2011.

³⁰ Teno, J. M., et al. (2012). "Feeding tubes and the prevention or healing of pressure ulcers." *Arch Intern Med* 172(9): 697-701

³¹ Bernard SL, Dalton K, Lenfestey N F, Jarrett NM, Nguyen KH, Sorensen AV, Thaker S, West ND. Study to support a CMS report to Congress: Assess feasibility of extending the hospital-acquired conditions—present on admission IPPS payment policy to non-IPPS payment environments. Prepared for Centers for Medicare & Medicaid Services. 2011. Available from: <http://innovation.cms.gov/Files/x/HospAcquiredConditionsRTC.pdf>.

³² Centers for Medicare & Medicaid Services (CMS). Medicare program; changes to the hospital inpatient prospective payment system and fiscal year 2008 rates. *Fed Register*. August 22, 2007;72(162):47205.

³³ Advancing Excellence in America's Nursing Homes (AEANH). Explore our goals.. n.d. Available from <https://www.nhqualitycampaign.org/goals.aspx>

hospital stay were estimated to have increased CMS payments across 90-day episodes of care by at least \$18.8 million a year.³⁴

2.2.3 Denominator

Specific denominator definitions for each setting are provided below.

SNF Denominator: The denominator is the number of short-stay residents with one or more MDS 3.0 assessments that are eligible for a look-back scan (except those with exclusions). A look-back scan is a review of all qualifying assessments within the resident's current episode to determine whether events occurred during the look-back period. All assessments with target dates within the episode are examined to determine whether the event or condition of interest occurred at any time during the episode. Assessment types include: an admission, quarterly, annual, significant change/correction OBRA assessment (A0310A = 01, 02, 03, 04, 05, 06); or a PPS 5-, 14-, 30-, 60-, or 90-day, (A0310B = 01, 02, 03, 04, 05) or discharge with or without return anticipated (A0310F = 10, 11); or SNF PPS Part A Discharge Assessment (A0310H = 1).

LTCH Denominator: The denominator is the number of patient stays with both an admission and discharge LTCH CARE Data Set assessment, except those who meet the exclusion criteria.

IRF Denominator: The denominator is the number of Medicare* (Part A and Part C) patient stays with an IRF-PAI assessment, except those who meet the exclusion criteria.

*IRF-PAI data are submitted for Medicare patients (Part A and Part C) only.

Denominator Exclusions

Specific denominator exclusions for each setting are provided below.

SNF Denominator Exclusions:

1. Short-stay residents are excluded if none of the assessments that are included in the look-back scan has a usable response for items indicating the presence of new or worsened Stage 2, 3, 4 pressure ulcers since the prior assessment. This situation is identified as follows:
 - 1.1 If data on new or worsened Stage 2, 3, and 4 pressure ulcers is missing (M0800A = [-] and M0800B = [-] and M0800C = [-]) then the assessment is not usable and is discarded.
 - 1.2 If all of the assessments that are eligible for the look-back scan are discarded and no usable assessments remain, then the resident is excluded from the numerator and the denominator.

³⁴ Kandilov AMG, Coomer NM, Dalton K. (2014) The impact of hospital-acquired conditions on Medicare program payments. MMRR 4(4): E1-E23.

2. Short-stay resident is excluded if there is no initial assessment available to derive data for risk adjustment (covariates).
3. Death in facility tracking records (A0310F = [12]) are excluded from measure calculations.

LTCH Denominator Exclusions:

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 = [-].
2. Patient stay is excluded if the patient died during the LTCH stay; i.e., A0250 = [12].
3. Patient stay is excluded if there is no admission assessment available to derive data for risk adjustment (covariates).

IRF Denominator Exclusions:

1. Patient stay is excluded if data on new or worsened Stage 2, 3, and 4 pressure ulcers is missing at discharge; i.e., M0800A = [-] and M0800B = [-] and M0800C = [-].
2. Patient stay is excluded if the patient died during the IRF stay; i.e., Item 44C = [0].

2.2.4 Numerator

Specific numerator definitions for each setting are provided below.

SNF Numerator: The numerator is the number of short-stay residents with an MDS 3.0 assessment during the selected time window who have one or more Stage 2-4 pressure ulcers, that are new or worsened, based on examination of all assessments in a resident's episode for reports of Stage 2-4 pressure ulcers that were not present or were at a lesser stage on prior assessment.

- 1) Stage 2 (M0800A) > 0, OR
- 2) Stage 3 (M0800B) > 0, OR
- 3) Stage 4 (M0800C) > 0

Assessments may be discharge, PPS 5-, 14-, 30-, 60-, 90-day, SNF PPS Part A Discharge Assessment or OBRA admission, quarterly, annual or significant change assessments.

LTCH Numerator: The numerator is the number of stays for which the discharge assessment indicates one or more new or worsened Stage 2-4 pressure ulcers compared to the admission assessment.

- 1) Stage 2 (M0800A) > 0, OR
- 2) Stage 3 (M0800B) > 0, OR
- 3) Stage 4 (M0800C) > 0

IRF Numerator: The numerator is the number of stays for which the IRF-PAI indicates one or more Stage 2-4 pressure ulcer(s) that are new or worsened at discharge compared to admission.

- 1) Stage 2 (M0800A) > 0, OR
- 2) Stage 3 (M0800B) > 0, OR
- 3) Stage 4 (M0800C) > 0.

2.2.5 Measure Time Window

Time windows vary across setting due to considerable variation in facility sizes across the three settings. Specific measure time window descriptions for each setting are provided below.

SNF Time Window: The measure is calculated quarterly using a rolling 6 months of data. Public reporting data reflect the weighted average of three rolling 6-month periods. For SNF residents with multiple episodes of care during the 6 months, only the latest episode will be counted. For SNF residents, the numerator is determined based on a look back across all assessments included in a resident episode, so may extend into the prior measurement period (i.e., look back may be as many as 100 days).

LTCH Time Window: The measure will be calculated quarterly using a rolling 12 months of data. For public reporting, the quality measure score reported for each quarter is calculated using a rolling 12 months of data inclusive of the reporting quarter and the 3 quarters prior. All LTCH stays, except those that meet the exclusion criteria, during the 12 months are included in the denominator and are eligible for inclusion in the numerator. For patients with multiple stays during the 12-month time window, each stay is eligible for inclusion in the measure.

IRF Time Window: The measure will be calculated quarterly using rolling 12 months of data. All IRF records, except those that meet the exclusion criteria, during the 12 months will be included in the denominator and are eligible for inclusion in the numerator. For patients with multiple records during the 12-month time window, each record is eligible for inclusion in the measure.

2.2.6 Risk Adjustment Covariates

Specific covariate definitions for each setting are provided below.

SNF Risk Adjustment Covariates

For each short-stay resident covariate values are assigned, either '0' for covariate condition not present or '1' for covariate condition present, as reported on the initial assessment.

1. Indicator of requiring limited or more assistance in bed mobility self-performance dependence on the initial assessment:

Covariate = [1] (yes) if G0110A1 = [2, 3, 4, 7, 8] (2 – Limited assistance, 3 – Extensive assistance, 4 – Total dependence, 7 – activity occurred only once or twice, 8 – Activity did not occur)

Covariate = [0] (no) if G0110A1 = [0, 1, -] (0 – Independent, 1 – Supervision, ‘-’ – no response)

2. Indicator of bowel incontinence at least occasionally on the initial assessment:

Covariate = [1] (yes) if H0400 = [1, 2, 3] (1 – Occasionally incontinent, 2 – Frequently incontinent, 3 – Always incontinent)

Covariate = [0] (no) if H0400 = [0, 9, -, ^] (0 – Always continent, 9 – Not rated, ‘-’ – No response available, ‘^’ – Valid skip)

3. Have diabetes or peripheral vascular disease on initial assessment:

Covariate = [1] (yes) if any of the following are true:

a. Active peripheral vascular disease (PVD) or peripheral arterial disease (PAD) in the last 7 days (I0900 = [1] (checked))

b. Active diabetes mellitus (DM) in the last 7 days (I2900 = [1] (checked))

Covariate = [0] (no) if I0900 = [0, -, ‘-’] AND I2900 = [0, -]

4. Indicator of Low Body Mass Index (BMI), based on Height (K0200A) and Weight (K0200B) on the initial assessment:

Covariate = [1] (yes) if BMI \geq [12.0] AND \leq [19.0]

Covariate = [0] (no) if BMI $>$ [19.0]

Covariate = [0] (no) if K0200A = [-] OR K0200B = [-] OR BMI $<$ [12.0], (‘-’ = No response available)

Where: BMI = (weight * 703 / height²) = ((K0200B) * 703) / (K0200A²) and the resulting value is rounded to one decimal.

LTCH Risk Adjustment Covariates

For each patient stay covariate values are assigned, either ‘0’ for covariate condition not present or ‘1’ for covariate condition present, as reported on the initial assessment.

1. Indicator of supervision/touching assistance or more for the functional mobility item Lying to Sitting on Side of Bed on the admission assessment:

Covariate = [1] (yes) if GG0160C³⁵ = [01, 02, 03, 04, 07, 09, 88] ([01] = Dependent, [02] = Substantial/maximal assistance, [03] = Partial/moderate assistance, [04]

³⁵ For the April 1, 2016 release of LTCH CARE Data Set, this item will be renumbered to GG0170C.

=Supervision or touching assistance, [07] = Patient refused, [09] = Not applicable, [88] = (activity) not attempted due to medical condition or safety concerns)

Covariate = [0] (no) if GG0160C³⁵ = [05, 06, -, ^] ([05] =Setup or clean-up assistance, [06] = Independent, [-]=No response available, [^] =Valid skip)

2. Indicator of bowel incontinence at least occasionally on the admission assessment:

Covariate = [1] (yes) if H0400 = [1, 2, 3] ([1] = Occasionally incontinent, [2] = Frequently incontinent, [3] = Always incontinent)

Covariate = [0] (no) if H0400 = [0, 9, -, ^] ([0] = Always continent, [9] = Not rated, [-]= No response available, [^] = Valid skip)

3. Have diabetes or peripheral vascular disease on admission assessment:

Covariate = [1] (yes) if any of the following are true:

- a. I0900 = [1] (checked)

- b. I2900 = [1] (checked)

Covariate = [0] (no) if I0900 = [0, -] AND I2900 = [0, -]

4. Indicator of Low Body Mass Index, based on Height (K0200A) and Weight (K0200B) on the admission assessment:

Covariate = [1] (yes) if $BMI \geq [12.0]$ AND $\leq [19.0]$

Covariate = [0] (no) if $BMI > [19.0]$

Covariate = [0] (no) if K0200A = [-] OR K0200B = [-] OR $BMI < [12.0]$, ('-' = No response available)

Where: $BMI = (\text{weight} * 703 / \text{height}^2) = ((K0200B) * 703) / (K0200A^2)$ and the resulting value is rounded to one decimal.

IRF Risk Adjustment Covariates

For each patient stay covariate values are assigned, either '0' for covariate condition not present or '1' for covariate condition present, as reported on the initial assessment

1. Indicator of requiring minimal or more assistance for the FIM[®] Item (39I) Transfers: Bed, Chair, and Wheelchair on admission:

Covariate = [1] (yes) if 39I FIM Levels = [0, 1, 2, 3, 4] ([0]= Activity does not occur, [1] = Total Assistance (Subject less than 25%), [2]=Maximal Assistance (Subject = 25% or more), [3] = Moderate Assistance (Subject = 50% or more), [4] = Minimal Assistance (Subject = 75% or more))

Covariate = [0] (no) if 39I FIM Levels = [5,6,7, -, ^] ([5] = Supervision (Subject = 100%), [6] = Modified Independence (Device), [7] = Complete Independence (Timely, Safely), [-] = No response available, [^] = Valid skip)

2. Indicator of bowel incontinence at least occasionally on admission:

Covariate = [1] (yes) if Item 32 = [1,2,3,4,5] ([1] = Five or more accidents in the past 7 days, [2] = Four accidents in the past 7 days, [3] = Three accidents in the past 7 days, [4] = Two accidents in the past 7 days, [5] = One accident in the past 7 days)

Covariate = [0] (no) if Item 32 = [6, 7, -, ^] ([6] = No accidents; uses device such as a ostomy, [7] = No accidents, [-] = No response available, [^] = Valid skip)

3. Have peripheral vascular disease or peripheral arterial disease or diabetes:

Covariate = [1] (yes) if any of the following are true:

a. I0900 = [1] (checked)

b. I2900 = [1] (checked) Covariate = [0] (no) if I0900 = [0, -] AND I2900A = [0, -] Indicator of Low Body Mass Index, based on Height (25A) and Weight (26A) on the assessment:

Covariate = [1] (yes) if BMI \geq [12.0] AND \leq [19.0]

Covariate = [0] (no) if BMI > [19.0]

Covariate = [0] (no) if 25A = [-] OR 26A = [-] OR BMI < [12.0] ([-] = No response available)

Where: BMI = (weight * 703 / height²) = ((26A) * 703) / (25A)² and the resulting value is rounded to one decimal.

2.2.7 Quality Measure Calculation Algorithm

The following steps are used to calculate the measure:

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

Step 1. Calculate the denominator count:

In the SNF setting, calculate the total number of short-stay residents with a selected target MDS 3.0 assessment in the measure time window, who do not meet the exclusion criteria.

In the LTCH setting, calculate the total number of stays with both an admission and discharge LTCH CARE Data Set assessment in the measure time window, who do not meet the exclusion criteria.

In the IRF setting, calculate the total number of stays with an IRF-PAI assessment in the measure time window, who do not meet the exclusion criteria.

Step 2. Calculate the numerator count:

In the SNF setting, calculate the total number short-stay residents in the denominator with selected target or look-back assessment that indicates one or more new or worsened pressure ulcers.

In the LTCH setting, calculate the total number of patient stays whose discharge assessment indicates one or more new or worsened pressure ulcers compared to the admission assessment.

In the IRF setting, calculate the total number of patient stays whose IRF-PAI assessment indicates one or more new or worsened pressure ulcers at discharge compared to admission.

Step 3. Calculate the facility's observed score:

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

B. Calculate the expected score for each patient/resident (steps 4 and 5)

Step 4. Determine presence or absence of the pressure ulcer covariates for each patient/resident:

Assign covariate values, either '0' for covariate condition not present or '1' for covariate condition present, for each patient/resident for each of the four covariates as reported on the initial assessment for the SNF setting or the admission assessment for the LTCH and IRF settings, as described in the section above.

Step 5. Calculate the expected score for each patient/resident with the following formula:

$$\text{Patient/resident-level expected QM score} = 1 / [1 + e^{-X}] \quad (1)$$

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

$$\text{QM triggered (yes=1, no=0)} = B0 + B1*COVA + B2*COVB + \dots BN*COVN \quad (2)$$

Where B0 is the logistic regression constant, B1 is the logistic regression coefficient for the first covariate (where applicable), COVA is the patient-/resident-level score for the first covariate, B2 is the logistic regression coefficient for the second covariate, and COVB is the patient/resident level score for the second covariate

(where applicable), etc. The regression constant and regression coefficients* are numbers obtained through statistical logistic regression analysis.

* Regression coefficients and constants are calculated separately for each facility type (SNF, LTCH, and IRF) and are updated each reporting period.

C. Calculate the facility expected score (step 6)

Step 6. Once an expected QM score has been calculated for all residents for the SNF setting or all patient stays for the LTCH and IRF settings, calculate the mean facility-level expected QM score by averaging all resident/patient-level expected scores.

D. Calculate national mean QM score (steps 7 through 9)

Step 7. Calculate the denominator count:

Calculate the total number of patient stays/resident retained after exclusions and sum to derive denominator count.

Step 8. Calculate the numerator count:

Calculate the total number of patient stays/residents that triggered the QM and sum to derive numerator count.

Step 9. Calculate national mean observed QM score:

Divide the numerator count by its denominator count to obtain the national mean observed score; that is, divide the result of step 8 by the result of step 7.

E. Calculate the facility-level adjusted score (step 10)

Step 10. Calculate the facility-level adjusted score based on the:

facility-level observed QM score (step 3),

facility-level average expected QM score (step 6), and

*national mean observed QM score (step 9).

**The national mean observed QM score is updated separately for each facility type (SNF, LTCH, and IRF) for each reporting period.*

The calculation of the adjusted score uses the following equation:

$$Adj = 1/[1 + e^{-y}] \quad (3)$$

where

Adj is the facility-level adjusted QM score, and

$$y = (\text{Ln}(\text{Obs}/(1-\text{Obs})) - \text{Ln}(\text{Exp}/(1-\text{Exp})) + \text{Ln}(\text{Nat}/(1-\text{Nat})))$$

Obs is the facility-level observed QM rate,

Exp is the facility-level expected QM rate,

Nat is the national observed QM rate,

Ln indicates a natural logarithm, and

e is the base of natural logarithm.

2.3 Cross-Setting Falls with Major Injury Measure: Application of Percent of Residents Experiencing One or More Falls with Major Injury (NQF #0674)

2.3.1 Quality Measure Description

The quality measure addressing the incidence of major falls is an Application of the NQF-endorsed Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF #0674).

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 SNF, LTCH, or IRF stay.

The data for the measure will be submitted via the MDS 3.0 for SNF residents, the LTCH CARE Data Set for LTCH patients, and the IRF-PAI for IRF patients.

This quality measure is based on data reported for two items. The first item (J1800) is a gateway item that asks whether the patient/resident has experienced any falls since admission/entry (or reentry or prior assessment). Because the LTCH and IRF measure is based on patient-level data for these items reported at discharge, the item (J1800) for the LTCH CARE Data Set and IRF-PAI asks whether patient has experienced any falls since admission. If the answer to J1800 is no, the next item (J1900) is skipped. If the answer to J1800 is yes, the next item (J1900) asks for the number of falls with a) no injury, b) injury (except major), and c) major injury. The measure is calculated using data reported for J1900C (number of falls with major injury).

2.3.2 Purpose/Rationale for Quality Measure

This quality measure is intended for use as a cross-setting quality measure to meet the requirements of the IMPACT Act of 2014 addressing the domain of major falls. The Department of Health and Human Services included injury prevention, which incorporates falls prevention, as one of the 10 leading health indicators in the Healthy People 2020 initiative.³⁶ Falls represent a significant cost burden to the entire health care system, with injurious falls accounting for 6% of medical expenses among adults aged 65 and older.³⁷ Research indicates that fall-related injuries are the most common cause of accidental death in older people, responsible for approximately 41% of accidental deaths annually.³⁸ Rates increase to 70% of accidental deaths among individuals aged 75 and older.³⁹ In addition to death, falls can lead to fracture, soft tissue or head injury, fear of falling, anxiety, and depression.⁴⁰

³⁶ DHHS. Healthy People 2020 Leading Health Indicators: Injury and Violence. March 2015. Available at <http://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Injury-and-Violence/>

³⁷ Tinetti ME, Williams CS. The effect of falls and fall injuries on functioning in community-dwelling older persons. *J Gerontol A Biol Sci Med Sci*. 1998 Mar;53(2):M112-9.

³⁸ Currie LM. Fall and injury prevention. *Annu Rev Nurs Res*. 2006;24:39-74.

³⁹ Fuller GF. Falls in the elderly. *Am Fam Physician*. Apr 1 2000;61(7):2159-2168, 2173-2154.

⁴⁰ Love, K, Allen, J. Falls: Why they matter and what you can do. *Geriatr Nurs*, 2011;32(3):206-208.

Approximately 75% of nursing facility residents fall at least once a year, twice the rate of their counterparts in the community.⁴¹ Further, it is estimated that 10 to 25% of nursing facility resident falls result in fractures and/or hospitalization.⁴²

A study of 5,062 IRF patients found that 367 patients (7%) had 438 falls. Among these 438 falls, 129 (29.5% of the falls) resulted in an injury, of which 25 (5.7% of all falls and 19% of all falls with injury) were serious.⁴³ A separate study of 754 stroke patients in an IRF reported 117 patients (16%) experienced 159 falls. Among these 159 falls, 13 (8%) resulted in a minor injury and 3 (2%) resulted in a serious injury.⁴⁴

2.3.3 Denominator

Specific denominator definitions for each setting are provided below.

SNF Denominator: The denominator is the number of stays in the selected time window for SNF residents with a SNF PPS Part A Discharge Assessment (A0310H = 1) during the selected time window, except those who meet the exclusion criteria. A stay is defined as the time period from resident admission or reentry to the facility (identified by a 5-day PPS assessment) to discharge, which may be an OBRA discharge or a SNF PPS Part A Discharge.

LTCH Denominator: The denominator is the number of patient stays with a discharge or expired assessment (A0250=10, 11, 12) during the selected time window, except those who meet the exclusion criteria.

IRF Denominator: The denominator is the number of Medicare patient stays* (Part A or Part C) during the selected time window, except those who meet the exclusion criteria.

*IRF-PAI data are submitted only for Medicare patients (Part A and Part C).

Denominator Exclusions

A patient/resident stay is excluded from the denominator if missing data precludes calculation of the measure. Specific denominator exclusions for each setting are provided below.

SNF Denominator Exclusions: Resident stay is excluded if none of the assessments that are included in the look-back scan has a usable response for items indicating the presence of a fall with major injury during the selected time window (i.e., information on falls with major injury is missing [J1900C = (-)] on all assessments used during a resident's stay during the selected time window).

⁴¹ Rubenstein LZ, Josephson KR, Robbins AS. Falls in the nursing home. *Ann Intern Med.* 1994 Sep 15; 121(6):442-51.

⁴² Vu MQ, Weintraub N, Rubenstein LZ. Falls in the nursing home: are they preventable? *J Am Med Dir Assoc.* 2004 Nov-Dec; 5(6):401-6.

⁴³ Frisina PG, Guellnitz R, Alverzo J. A time series analysis of falls and injury in the inpatient rehabilitation setting. *Rehab Nurs.* 2010; 35(4):141-146.

⁴⁴ Rabadi MH, Rabadi FM, Peterson M. An analysis of falls occurring in patients with stroke on an acute rehabilitation unit. *Rehab Nurs.* 2008; 33(3):104-109.

LTCH Denominator Exclusions: Patient stay is excluded if falls with major injury data is missing (J1900C = [-]) on the unplanned or planned discharge or expired assessment during the selected time window.

IRF Denominator Exclusions: Patient stay is excluded if falls with major injury data is missing (J1900C = [-]) on the IRF-PAI during the selected time window.

2.3.4 Numerator

The numerator for this quality measure is the number of patients/residents who experienced one or more falls that resulted in major injury during the stay. Specific numerator definitions for each setting are provided below.

SNF Numerator: The numerator is the number of Medicare Part A covered resident stays where the resident experienced one or more falls that resulted in major injury. A stay is defined as the time period from resident admission or reentry to the facility (identified by a 5-day PPS assessment) to discharge, which may be an OBRA discharge or a SNF PPS Part A Discharge. Assessments eligible for inclusion in the look-back scan include OBRA discharge, PPS 5-, 14-, 30-, 60-, 90-day, SNF PPS Part A Discharge Assessment or OBRA admission, quarterly, annual or significant change assessments.

LTCH Numerator: The numerator is the number of patient stays with planned or unplanned discharge or expired assessment during the selected time window who experienced one or more falls that resulted in major injury.

IRF Numerator: The numerator is the number of Medicare (Part A or Part C) patient stays during the selected time window who experienced one or more falls that resulted in major injury.

2.3.5 Items Included in the Quality Measure

The items used for this measure collect data that indicates whether or not a fall took place (J1800), and if so, the number of falls in each of the following categories (J1900):

- **Injury Related to Fall:** Any documented injury that occurred as a result of, or was recognized within a short period of time (e.g., hours to a few days) after, the fall and attributed to the fall.
- **Injury (Except Major):** Includes skin tears, abrasions, lacerations, superficial bruises, hematomas, and sprains; or any fall-related injury that causes the patient to complain of pain.
- **Major Injury:** Defined as a bone fracture, joint dislocation, closed-head injury with altered consciousness, or subdural hematoma.

Only the data on number of falls resulting in major injury are included to calculate this measure. Details on the item needed to calculate the quality measure are described separately below for each setting.

SNF: For SNFs, the item (J1900C) is collected on the MDS 3.0 assessments, which may be OBRA discharge, PPS 5-, 14-, 30-, 60-, 90-day, SNF PPS Part A Discharge Assessment, or OBRA admission, quarterly, annual or significant change assessments, included in a SNF resident's stay. Because the SNF measure includes assessments occurring between admission to the facility and discharge, the MDS 3.0 items ask providers to identify falls since admission/entry or reentry or prior assessment, whichever is more recent.

LTCH: For LTCHs, the item (J1900C) is collected on the LTCH CARE Data Set unplanned or planned discharge or expired assessment and assesses whether patient had one or more falls that resulted in major injury since the time of admission to the LTCH.

IRF: For IRFs, the item (J1900C) is collected on the IRF-PAI assessment and assesses whether patient had one or more falls that resulted in major injury since the time of admission to the IRF.

2.3.6 Risk Adjustment

This measure is not risk-adjusted or stratified.

2.3.7 Quality Measure Calculation Algorithm

The following steps are used to calculate the measure. Since this measure is not risk-adjusted or stratified, only the facility observed score is computed.

Calculate the facility observed score (steps 1 through 3)

Step 1. Calculate the denominator count:

- In the SNF setting, identify SNF residents with a PPS Part A Discharge (A0310H=1). Count the number of SNF stays (resident admission or reentry to the facility to discharge, which may be an OBRA discharge or a SNF PPS Part A Discharge) among these residents, except those that meet the exclusion criteria.
- In the LTCH setting, calculate the number of patient stays with a discharge or expired assessment (A0250=10, 11, 12), except those who meet the exclusion criteria.
- In the IRF setting, calculate the number of Medicare (Part A or Part C) patient stays, except those who meet the exclusion criteria.

Step 2. Calculate the numerator count:

- In the SNF setting, starting with the set of resident stays identified in Step 1, calculate the number of Medicare Part A covered resident stays where the resident experienced one or more falls that resulted in major injury during the stay. Assessments may be OBRA discharge, PPS 5-, 14-, 30-, 60-, 90-day, SNF PPS Part A Discharge Assessment or OBRA admission, quarterly, annual or significant change assessments.

- In the LTCH setting, calculate the number of patient stays with an LTCH CARE Data Set planned or unplanned discharge or expired assessment during the selected time window who experienced one or more falls that resulted in major injury during the stay.
- In the IRF setting, calculate the number of patient stays during the selected time window who experienced one or more falls that resulted in major injury during the stay.

Step 3. Calculate the facility's observed score:

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

2.4 Quality Measure: All-Cause Unplanned Readmission Measure for 30 Days Post-Discharge from Long-Term Care Hospitals (NQF #2512)

2.4.1 Quality Measure Description

The All-Cause Unplanned Readmission Measure for 30 Days Post-Discharge from Long-Term Care Hospitals (NQF #2512) was endorsed by the NQF in December 2014. For detailed measure specifications including results of testing and model validation, please visit <http://www.qualityforum.org/ProjectTemplateDownload.aspx?SubmissionID=2512>.

**APPENDIX A:
SELF-CARE AND MOBILITY ITEMS INCLUDED IN SECTION GG OF THE IRF-PAI,
MDS 3.0, LTCH CARE DATA SET**

Table 1 lists the function items included in Section GG of the IRF-PAI version 1.4 (effective October 1, 2016), MDS 3.0 (effective Oct 1, 2016), LTCH CARE Data Set version 3.00 (effective April 1, 2016). The items included in the cross-setting function quality measure, an *Application* of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631) are highlighted in yellow. The additional function items (white rows) that are checked for selected settings are required for other function quality measures. For example, the additional items “shower/bathe self”, “upper body dressing”, “lower body dressing”, “putting on/taking off footwear”, and “roll left and right” are included on the IRF-PAI and are required to calculate the quality measures Inpatient Rehabilitation Facility Functional Outcome Measure: Change in Self-Care Score for Medical Rehabilitation Patients (NQF #2633; under NQF review) and Inpatient Rehabilitation Facility Functional Outcome Measure: Discharge Self-Care Score for Medical Rehabilitation Patients (NQF #2635).

**Table 1
Self-Care and Mobility Items Included in Section GG of the IRF-PAI, MDS 3.0, LTCH
CARE Data Set**

Item	Item Description	Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI) v1.4	Minimum Data Set (MDS) 3.0	Long-Term Care Hospital CARE Data Set v3.00
SELF-CARE GG0130				
A	Eating	✓	✓	✓
B	Oral hygiene	✓	✓	✓
C	Toileting hygiene	✓	✓	✓
D	Wash upper body	—	—	✓
E	Shower/bathe self	✓	—	—
F	Upper body dressing	✓	—	—
G	Lower body dressing	✓	—	—
H	Putting on/taking off footwear	✓	—	—

(continued)

Table 1 (continued)
Self-Care and Mobility Items Included in Section GG of the IRF-PAI, MDS 3.0, LTCH CARE Data Set

Item	Item Description	Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI) v1.4	Minimum Data Set (MDS) 3.0	Long-Term Care Hospital CARE Data Set v3.00
MOBILITY GG0170				
A	Roll left and right	✓	—	✓
B	Sit to lying	✓	✓	✓
C	Lying to sitting on side of bed	✓	✓	✓
D	Sit to stand	✓	✓	✓
E	Chair/bed-to-chair transfer	✓	✓	✓
F	Toilet transfer	✓	✓	✓
G	Car transfer	✓	—	—
I	Walk 10 feet	✓	—	✓
J	Walk 50 feet with two turns	✓	✓	✓
K	Walk 150 feet	✓	✓	✓
L	Walking 10 feet on uneven surface	✓	—	—
M	1 step (curb)	✓	—	—
N	4 steps	✓	—	—
O	12 steps	✓	—	—
P	Picking up object	✓	—	—
R	Wheel 50 feet with two turns	✓	✓	✓
S	Wheel 150 feet	✓	✓	✓

NOTES:

✓ = Item is included in the assessment instrument.

— = Item is not included in the assessment instrument

**APPENDIX B:
FUNCTION ITEMS INCLUDED IN THE PROCESS FUNCTION QUALITY MEASURE
FOR IRF, SNF, AND LTCH QUALITY REPORTING PROGRAMS**

Table 2 shows the items included in the function quality measures that are process measures. For the IRF, SNF and LTCH settings, the cross-setting measure, an *Application* of Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631), is listed. The LTCH setting also includes the measure, Percent of Long-Term Care Hospital Patients with an Admission and Discharge Functional Assessment and a Care Plan that Addresses Function (NQF #2631), which includes additional function items, such as the CAM© items.

**Table 2
Function Items Included in the Process Function Quality Measures for IRF, SNF, and
LTCH QRPs**

Item Identifier	Item Name	IRF QRP	SNF QRP	LTCH QRP	
		Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)*
SELF-CARE GG0130					
A	Eating	✓	✓	✓	✓
B	Oral hygiene	✓	✓	✓	✓
C	Toileting hygiene	✓	✓	✓	✓
D	Wash upper body	—	—	—	✓
E	Shower/bathe self	—	—	—	—
F	Upper body dressing	—	—	—	—

(continued)

Table 2 (continued)
Function Items Included in the Process Function Quality Measures for IRF, SNF, and
LTCH QRPs

Item Identifier	Item Name	IRF QRP	SNF QRP	LTCH QRP	
		Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)*
G	Lower body dressing	—	—	—	—
H	Putting on/taking off footwear	—	—	—	—
MOBILITY GG0170					
A	Roll left and right	—	—	—	✓
B	Sit to lying	✓	✓	✓	✓
C	Lying to sitting on side of bed	✓	✓	✓	✓
D	Sit to stand	✓	✓	✓	✓
E	Chair/bed-to-chair transfer	✓	✓	✓	✓
F	Toilet transfer	✓	✓	✓	✓
G	Car transfer	—	—	—	—
H	<i>Does the patient walk?</i>	✓	✓	✓	✓
I	Walk 10 feet	—	—	—	✓
J	Walk 50 feet with two turns	✓	✓	✓	✓
K	Walk 150 feet	✓	✓	✓	✓

(continued)

Table 2 (continued)
Function Items Included in the Process Function Quality Measures for IRF, SNF, and
LTCH QRPs

Item Identifier	Item Name	IRF QRP	SNF QRP	LTCH QRP	
		Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)*
L	Walking 10 feet on uneven surface	—	—	—	—
M	1 step (curb)	—	—	—	—
N	4 steps	—	—	—	—
O	12 steps	—	—	—	—
P	Picking up object	—	—	—	—
Q	<i>Does the patient use a wheelchair/scooter?</i>	✓	✓	✓	✓
R	Wheel 50 feet with two turns	✓	✓	✓	✓
RR	Type of wheelchair/scooter used	✓	✓	✓	✓
S	Wheel 150 feet	✓	✓	✓	✓
SS	Type of wheelchair/scooter used	✓	✓	✓	✓
COMMUNICATION (Section B)					
BB0700	Expression of Ideas and Wants	—	—	—	✓
BB0800	Understanding Verbal Content	—	—	—	✓

(continued)

Table 2 (continued)
Function Items Included in the Process Function Quality Measures for IRF, SNF, and LTCH QRPs

Item Identifier	Item Name	IRF QRP	SNF QRP	LTCH QRP	
		Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Application of percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)	Percent of long-term care hospital patients with an admission and discharge functional assessment and a care plan that addresses function (NQF #2631)*
CAM© (Section C)					
C1610A-B	CAM: Acute Onset and Fluctuating Course	—	—	—	✓
C1610C	CAM: Inattention	—	—	—	✓
C1610D	CAM: Disorganized Thinking	—	—	—	✓
C1610E	CAM: Altered Level of Consciousness	—	—	—	✓
BLADDER (Section H)					
H0350	Bladder Continence	—	—	—	✓

NOTES:

✓ = Item is included in the quality measure.

— = Item is not included in the quality measure.

* This process measure was adopted for the LTCH QRP through the FY 2015 IPPS/LTCH PPS final rule (79 FR 50298 through 50301).

CAM © Adapted with permission from: Inouye SK et al, Clarifying confusion: The Confusion Assessment Method. A new method for detection of delirium. *Annals of Internal Medicine*. 1990; 113: 941-948. Confusion Assessment Method: Training Manual and Coding Guide, Copyright 2003, Hospital Elder Life Program, LLC. Not to be reproduced without permission.