

April 2015

**Long-Term Care Hospital  
Quality Reporting Program -  
Specifications for the Quality Measures  
Proposed through the Fiscal Year 2016  
Notice of Proposed Rule Making**

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 PROPOSED THROUGH THE  
FISCAL YEAR 2016 NOTICE OF PROPOSED RULEMAKING

RTI International

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

April 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, under NQF review) .....	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 .....	6
2.1.5 Items Included in the Quality Measure .....	7
2.1.6 Quality Measure Calculation Algorithm.....	9
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 .....	13
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) .....	22
2.3.1 Quality Measure Description .....	22
2.3.2 Purpose/Rationale for Quality Measure.....	22
2.3.3 Denominator .....	23
2.3.4 Numerator .....	24
2.3.5 Items Included in the Quality Measure .....	24
2.3.6 Risk Adjustment.....	25
2.3.7 Quality Measure Calculation Algorithm.....	25
2.4 Quality Measure: All-Cause Unplanned Readmission Measure for 30 Days Post-Discharge from Long-Term Care Hospitals (NQF #2512).....	27
2.4.1 Quality Measure Description .....	27

*[This page intentionally left blank.]*

## **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 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 stated quality domains and three 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 proposal of quality measures for the LTCH QRP, please review the FY 2016 IPPS/LTCH PPS proposed rule.

In this document, we present specifications for the following four (4) quality measures proposed for the LTCH QRP through the FY 2016 IPPS/LTCH PPS Proposed 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, under NQF review, 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, under NQF review)**

#### **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, under NQF review). 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 or 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 or 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 resident's functional abilities

The quality measure is calculated using data from the Minimum Data Set (MDS) assessment instrument for 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 harmonized across the MDS, LTCH CARE Data Set, and IRF-PAI. 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 assessment data and other necessary data specified by the Secretary with respect to five quality domains, one of which is functional status, cognitive function, and changes in function and cognitive function. To satisfy these requirements, we are proposing to specify 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; under NQF review) 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 with an admission and a discharge functional assessment and a goal that addresses function.

The National Committee on Vital and Health Statistics, Subcommittee on Health<sup>1</sup>, 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 settings,<sup>2</sup> as well as risk of nursing home placement and hospitalization of older adults living in the community.<sup>3</sup> Functioning is important to patients/residents and their family members.<sup>4, 5,6</sup>

The majority of patients or residents who receive PAC services, such as care provided by SNFs, IRFs and LTCHs, have functional limitations, and many of these patients or residents are at risk for further decline in function due to limited mobility and ambulation.<sup>7</sup> The patient or resident populations treated by SNFs, IRFs and LTCHs 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 or resident’s ability to manage his or her daily activities so that the patient or 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

---

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

<sup>2</sup> Reistetter TA, Graham JE, Granger CV, Deutsch A, Ottenbacher KJ. 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.

<sup>3</sup> Miller EA, Weissert WG. 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.

<sup>4</sup> 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.

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

<sup>6</sup> 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.

<sup>7</sup> 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<sup>8</sup> 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 or resident care for all of these PAC providers.

Given the variation in patient or 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 and 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.

Although functional assessment data are currently collected in SNFs, IRFs and LTCHs, 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 or resident functioning challenging when patients or residents transition from one type of provider to another. Collection of standardized functional assessment data across SNFs, IRFs and LTCHs, using standardized data items, would establish a common language for patient or resident functioning, which may facilitate communication and care coordination as patients or residents transition from one type of provider to another. The collection of standardized functional status data may also help improve patient or 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 or resident's status across acute and post-acute providers, including SNFs, HHAs, IRFs and LTCHs. 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' needs, evaluate patient or resident progress and prepare patients or 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 Set: Volume 1 of 3."<sup>9</sup> Reliability and validity testing were conducted as part of CMS' Post-

---

<sup>8</sup> Kresevic DM. 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.

<sup>9</sup> 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).

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"<sup>10</sup> 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."<sup>11</sup> 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>.

### **2.1.3 Denominator**

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

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

*LTCH Denominator:* The denominator is the number of LTCH patients.

*SNF Denominator:* The denominator is the number of Medicare fee-for-service residents.

### **2.1.4 Numerator**

The numerator for this quality measure is the number of patients/residents 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 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 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 or residents with complete and incomplete stays are included in the numerator for this quality measure.

#### **For patients or residents with complete stays:**

For patients or residents with a complete stay, all three of the following are required for the patient to be counted in the numerator:

---

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

1. A valid numeric score indicating the patient's or 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 or 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 or 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 or residents who have an incomplete stay, discharge data are not required to be reported. Patients or residents who have incomplete stays are defined as those patients or residents : (1) with incomplete stays due to a medical emergency, (2) who leave the IRF, LTCH, SNF against medical advice, or (3) who die while in the IRF, LTCH, SNF. Discharge functional status data are not required to be reported for these patients or 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 or residents who have an incomplete stay to be counted in the numerator:

1. A valid numeric score indicating the patient's or 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 or 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 or 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 or 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:** 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:** 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:** The ability to maintain perineal hygiene; ability to 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:** The ability to move from sitting on side of bed to lying flat on the bed.

**Lying to sitting on side of bed:** 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:** 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:** The ability to safely transfer to and from a bed to a chair (or wheelchair).

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

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

**Walk 50 feet with two turns:** Once standing, the ability to walk 50 feet and make two turns.

**Walk 150 feet:** Once standing, the ability to walk at least 150 feet (45 meters) in a corridor or similar space.

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

**Wheel 50 feet with two turns:** The ability to wheel 50 feet and make two turns once seated in wheelchair/scooter.

**Indicate the type of wheelchair/scooter used.**

**0. Manual**

**1. Motorized**

**Wheel 150 feet:** Once seated, can wheel at least 150 feet (45 meters) in a corridor or similar space.

**Indicate the type of wheelchair/scooter used.**

**0. Manual**

**1. Motorized**

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

6. **Independent**—Patient/resident completes the activity by himself/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 of the activity. Helper lifts, holds, or supports patient's/resident's trunk or limbs, but provides less than half the effort.
2. **Substantial/maximal assistance**—Helper does MORE THAN HALF the effort of the activity. Helper lifts, holds or supports patient's/resident's 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:*

**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 or 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 or 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 or 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.

### **2.1.7 Risk Adjustment**

This quality measure is a process measure and is not risk adjusted. Completion of a functional assessment, which includes the use of “activity not attempted” codes, is not affected by the medical and functional complexity of the patient/resident. 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 or 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 assessment instrument for SNF/short-stay nursing home (NH) 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, LTCH CARE Data Set, and IRF-PAI. For residents in a SNF/NH, 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 patients 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/NH residents, this measure is restricted to the short-stay population defined as those who have accumulated 100 or fewer days in the SNF/NH as of the end of the measure time window. In IRFs, this measure is restricted to IRF 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 being put forth as a cross-setting quality measure to meet the requirements of the IMPACT Act 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 Quality Reporting Programs. This measure has previously been successfully adopted 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 Quality Reporting Program 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 Quality Reporting Program 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/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.<sup>12,13,14,15</sup> 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.<sup>16,17,18</sup> 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.<sup>19,20</sup>

Pressure ulcers typically result from prolonged periods of uninterrupted pressure on the skin, soft tissue, muscle, or bone.<sup>16,20,21</sup> 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

- 
- 12 Casey, G. (2013). "Pressure ulcers reflect quality of nursing care." *Nurs NZ* 19(10): 20-24.
  - 13 Gorzoni, M. L. and S. L. Pires (2011). "Deaths in nursing homes." *Rev Assoc Med Bras* 57(3): 327-331.
  - 14 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.
  - 15 White-Chu, E. F., et al. (2011). "Pressure ulcers in long-term care." *Clin Geriatr Med* 27(2): 241-258.
  - 16 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.
  - 17 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>.
  - 18 Wang, H., et al. (2014). "Impact of pressure ulcers on outcomes in inpatient rehabilitation facilities." *Am J Phys Med Rehabil* 93(3): 207-216.
  - 19 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.
  - 20 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>.
  - 21 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>.
  - 22 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>.
  - 23 Cai, S., et al. (2013). "Obesity and pressure ulcers among nursing home residents." *Med Care* 51(6): 478-486.
  - 24 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]
  - 25 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>.
  - 26 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.
  - 27 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.
  - 28 Reddy, M. (2011). "Pressure ulcers." *Clin Evid (Online)* 2011.
  - 29 Teno, J. M., et al. (2012). "Feeding tubes and the prevention or healing of pressure ulcers." *Arch Intern Med* 172(9): 697-701.

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, PEG tubes), a history of pressure ulcers, or presence of a pressure ulcer at admission are additional factors that increase pressure ulcer risk in elderly patients.<sup>12,16,17,19,22,23,24,25,26,27,28,29</sup>

Pressure ulcers are high-cost adverse events across the spectrum of health care settings, from acute hospitals to home health.<sup>16,19,21</sup> 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.<sup>22,20</sup> 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.<sup>31</sup> 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<sup>32</sup> 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.<sup>33</sup> Using data from 2009 and 2010, severe (Stage 3 and 4) pressure ulcers acquired during a hospital stay were estimated to have increased CMS payments across 90-day episodes of care by at least \$18.8 million a year.<sup>34</sup>

### 2.2.3 Denominator

Specific denominator definitions for each setting are provided below.

***SNF/NH Denominator:*** The denominator is the number of short-stay residents with one or more MDS 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

---

<sup>30</sup> Duncan KD. Preventing pressure ulcers: The goal is zero. *Jt Comm J Qual Patient Saf.* 2007 Oct;33(10):605-10.

<sup>31</sup> 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>.

<sup>32</sup> 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.

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

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

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 patients with an admission assessment (A0250=01) and a planned or unplanned discharge assessment (A0250=10, 11), except those who meet the exclusion criteria.

***IRF Denominator:*** The denominator is the number of Medicare patients\* (Part A and Part C) 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/NH Denominator Exclusions:**

1. 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.
2. 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].
3. Patient stay is excluded if there is no admission risk adjustment data (covariates).

### **2.2.4 Numerator**

Specific numerator definitions for each setting are provided below.

***LTCH Numerator:*** The numerator is the number of patients with an LTCH CARE Data Set planned or unplanned discharge assessment during the selected time window who have one or more Stage 2-4 pressure ulcers that are new or worsened, compared to admission assessment.

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

***SNF/NH Numerator:*** The numerator is the number of short-stay residents with an MDS 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.

***IRF Numerator:*** The numerator is the number of patients with a completed IRF-PAI assessment during the selected time window, who have 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/NH 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/NH residents with multiple episodes of care during the 6 months, only the latest episode will be counted. For SNF/NH 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 using rolling 12 months of data. 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 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/NH Covariates

For each 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 >= [12.0] AND <= [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 / height<sup>2</sup>) = ((K0200B) \* 703) / (K0200A<sup>2</sup>) and the resulting value is rounded to one decimal.

### LTCH 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 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)  
Covariate = [0] (no) if GG0160C = [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 = [01, 02, 03] (1 – Occasionally incontinent, 2 – Frequently incontinent, 3 – Always incontinent)  
Covariate = [0] (no) if H0400 = [0, 09, -, ^] (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 = [01] (checked)

b. I2900 = [01] (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 = (weight \* 703 / height<sup>2</sup>) = ([K0200B] \* 703) / (K0200A<sup>2</sup>) and the resulting value is rounded to one decimal.

### ***IRF 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<sup>®</sup> 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 = [7, 6, 5, -, ^] (7 - Complete Independence (Timely, Safely), 6 - Modified Independence (Device), 5 - Supervision (Subject = 100%), '-' - 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 diabetes or peripheral vascular disease on assessment:

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

a. I0900 = [01] (checked)

c. I2900 = [01] (checked)

Covariate = [0] (no) if I0900 = [0, -] AND I2900A = [0, -]

4. 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 / height<sup>2</sup>) = ([26A] \* 703) / (25A)<sup>2</sup> 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/NH setting, calculate the total number of short-stay residents with a selected target MDS assessment in the measure time window, who do not meet the exclusion criteria.

In the LTCH setting, calculate the total number of patients 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 patients 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/NH 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 patients 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 patients 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 resident/patient (steps 4 and 5)

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

Assign covariate values, either '0' for covariate condition not present or '1' for covariate condition present, for each resident or patient for each of the four covariates as reported on the initial assessment for the SNF/NH 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 resident/patient with the following formula:

$$[1] \text{ Resident/patient-level expected QM score} = 1 / [1 + e^{-x}]$$

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

$$[2] \text{ QM triggered (yes=1, no=0)} = B_0 + B_1 * COV_A + B_2 * COV_B + \dots B_N * COV_N$$

Where  $B_0$  is the logistic regression constant,  $B_1$  is the logistic regression coefficient for the first covariate (where applicable),  $COV_A$  is the resident or patient-level score for the first covariate,  $B_2$  is the logistic regression coefficient for the second covariate, and  $COV_B$  is the resident or patient 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/NH, 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/NH setting or all patient stays for the LTCH and IRF settings, calculate the facility-level expected QM score by averaging all resident/patient-level expected scores.

D. Calculate the facility-level adjusted score (step 7)

Step 7. 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 average observed QM score.

*\*The national observed QM means are updated separately for each facility type (SNF/NH, LTCH, and IRF) each reporting period.*

The calculation of the adjusted score uses the following equation:

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

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.

e is the base of natural logarithms

## **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 or residents who experience one or more falls with major injury (e.g., bone fractures, joint dislocations, closed head injuries with altered consciousness, or subdural hematoma) during the SNF, IRF, or LTCH stay/episode.

The data for the measure would be submitted via the MDS assessment instrument of SNF residents, the IRF-PAI for IRF patients, and the LTCH CARE Data Set assessments of LTCH patients.

The quality measure would be calculated using data reported for two items: 1) any falls since admission/entry (or reentry or prior assessment); and 2) number of falls with: a) no injury, b) injury (except major), and c) major injury. Because the IRF and LTCH measures are based on discharge assessments only, the items for the IRF-PAI and LTCH CARE Data Set only ask for falls since admission.

### **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 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.<sup>35</sup> Falls represent a significant cost burden to the entire health care system, with injurious falls accounting for 6% of

---

<sup>35</sup> 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/>

<sup>36</sup> 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.

<sup>37</sup> Currie LM. Fall and injury prevention. *Annu Rev Nurs Res.* 2006;24:39-74.

<sup>38</sup> Fuller GF. Falls in the elderly. *Am Fam Physician.* Apr 1 2000;61(7):2159-2168, 2173-2154.

<sup>39</sup> Love, K, Allen, J. Falls: Why they matter and what you can do. *Geriatr Nurs,* 2011;32(3):206-208.

<sup>40</sup> Rubenstein LZ, Josephson KR, Robbins AS. Falls in the nursing home. *Ann Intern Med.* 1994 Sep 15; 121(6):442-51.

<sup>41</sup> 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.

<sup>42</sup> 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.

<sup>43</sup> 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.

medical expenses among adults aged 65 and older.<sup>36</sup> 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.<sup>37</sup> Rates increase to 70% of accidental deaths among individuals aged 75 and older.<sup>38</sup> In addition to death, falls can lead to fracture, soft tissue or head injury, fear of falling, anxiety, and depression.<sup>39</sup>

Approximately 75% of nursing facility residents fall at least once a year, twice the rate of their counterparts in the community.<sup>40</sup> Further, it is estimated that 10 to 25% of nursing facility resident falls result in fractures and/or hospitalization.<sup>41</sup>

A study of 5,062 IRF patients found that 367 patients (7%) had 438 falls. Among these 438 falls, 129 (30%) resulted in an injury, of which 25 (19%) were serious.<sup>42</sup> 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.<sup>43</sup>

### **2.3.3 Denominator**

Specific denominator definitions for each setting are provided below.

***SNF Denominator:*** The denominator is the number of SNF residents with one or more assessments that are eligible for a look-back scan (except those with exclusions). A look-back scan is an examination of all eligible assessments in a resident's stay. Eligible 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 OBRA discharge with or without return anticipated (A0310F = 10, 11); or SNF PPS Part A Discharge Assessment (A0310H = 1). This measure is applicable for Medicare FFS beneficiaries only.

***LTCH Denominator:*** The denominator is the number of patients with a discharge assessment (A0250=10, 11), except those who meet the exclusion criteria.

***IRF Denominator:*** The denominator is the number of Medicare patients\* (Part A and Part C), 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 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:*** 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 a fall with major injury (i.e., information on falls with major injury is missing [J1900C = [-]] on all assessments in a resident's stay).

***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.

**IRF Denominator Exclusions:** Patient stay is excluded if falls with major injury data is missing (J1900C = [-]) on the discharge or expired IRF-PAI assessment.

### 2.3.4 Numerator

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

**LTCH Numerator:** The numerator is the number of patients 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.

**SNF Numerator:** The numerator is the number of FFS Medicare patients or residents who 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.

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

### 2.3.5 Items Included in the Quality Measure

The items used for this measure collect data about whether any fall took place, and if so, the number of falls in each of the following categories:

- **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.
- **Major Injury:** Includes bone fractures, joint dislocations, closed-head injuries with altered consciousness, and subdural hematoma.
- **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.

Only the number of falls resulting in major injury would be pertinent to this measure. Details on the items included in the quality measure are described separately below for each setting.

**LTCH:** For LTCHs, the item is collected on the LTCH CARE Data Set unplanned and planned discharge or expired assessment and looks back to the time of admission.

**SNF:** For SNFs, the item is collected on the MDS 3.0 assessments included in a SNF resident's stay, 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.

Because the SNF measure includes assessments occurring between admission to the facility and discharge the MDS items are written to ask providers to identify falls since admission/entry or reentry or prior assessment, whichever is more recent.

**IRF:** For IRFs, the item is collected on the IRF-PAI assessment and looks back to the time of admission.

### **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, calculate the total number of SNF residents with one or more assessments that are eligible for a look-back scan, except those who meet the exclusion criteria.
- In the LTCH setting, calculate the number of patients with a discharge assessment (A0250=10, 11), except those who meet the exclusion criteria.
- In the IRF setting, calculate the number of Medicare patients (Part A and Part C), except those who meet the exclusion criteria.

**Step 2.** Calculate the numerator count:

- In the SNF setting, calculate the number of FFS Medicare patients or residents who 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 patients 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 Medicare patients 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>.