

# Specifications for HH QRP Quality Measures – Function, Falls, Changes in Skin Integrity

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*Prepared for:*  
**Centers for Medicare &  
Medicaid Services**  
7500 Security Blvd  
Baltimore, MD 21244

*Submitted by:*  
**Abt Associates**  
10 Fawcett Street  
Cambridge, MA 02138  
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## **CROSS-SETTING MEASURES USING THE OUTCOME AND ASSESSMENT INFORMATION SET (OASIS)**

The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT Act), enacted Oct. 6, 2014, directs the Secretary of Health and Human Services to “specify quality measures on which Post-Acute Care (PAC) providers are required under the applicable reporting provisions to submit standardized patient assessment data” in several domains, including functional status, skin integrity, and incidence of major falls. The IMPACT Act requires the implementation of measures to address these measure domains in home health agencies (HHAs), skilled nursing facilities (SNFs), long-term care hospitals (LTCHs), and inpatient rehabilitation facilities (IRFs).

The IMPACT Act also requires, to the extent possible, the submission of such quality measure data through the use of a PAC assessment instrument and the modification of such instrument as necessary to enable such use. For HHAs, the Outcome and Assessment Information Set (OASIS) will be used.

The reporting of quality data by HHAs is mandated by Section 1895(b)(3)(B)(v)(II) of the Social Security Act (“the Act”). For more information on the statutory history of the HH Quality Reporting Program (QRP), please refer to <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Reporting-Requirements.html>. More information on the IMPACT Act is available at <https://www.govtrack.us/congress/bills/113/hr4994>.

In this document, we present specifications for the following three (3) measures that are part of the HH QRP Quality Measures, which use Standardized Patient Assessment Data Elements:

1. 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. Application of Percent of Residents Experiencing One or More Falls with Major Injury (NQF #0674)
3. Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury

## **1.1 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)**

### **1.1.1 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 episodes with a Start of Care (SOC) /Resumption of Care (ROC) 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.

This process quality measure requires the collection of SOC/ROC and discharge functional status and discharge goal 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 rating scale that indicates the patient'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 twelve function activities reflects that the patient's care plan addresses function. The discharge goal is recorded at start or resumption of care for at least one of a subset of twelve of standardized self-care or mobility function activities using the rating scale. Subsequent to the SOC/ROC assessment, goal setting, at the time of discharge the self-care and mobility functional performance is reassessed using the same rating scale, enabling the ability to re-assess the patient's functional abilities. This quality measure is calculated using data from the Outcome and Assessment Information Set (OASIS).

### **1.1.2 Purpose/Rationale for the Measure**

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 and their family members.<sup>4 5 6</sup>

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

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

<sup>3</sup> Miller E.A., Weissert W. G. (2000) 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.

The primary goal of home care is to provide restorative care where improvement is expected, maintain function and health status when improvement is not expected, and/or facilitate transition to end-of-life care when appropriate.<sup>7</sup> Many patients who receive post-acute care (PAC) services, such as care provided by home health agencies (HHAs), have functional limitations and are at risk for further decline in function due to limited mobility and ambulation.<sup>8</sup>

Given the variation in patient 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 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 setting. These activities are included in the cross-setting measure. The patient populations treated by home health agencies (HHAs) vary in their functional abilities at the time of the home health (HH) admission and their goals of care. For HH patients who are home-bound, achieving independence within the living environment and promoting community mobility may be the goal of care. For other HH patients, the goal of care may be to slow the rate of functional decline to avoid institutionalization.<sup>9</sup> The clinical practice guideline, *Assessment of Physical Function*,<sup>10</sup> recommends that clinicians document functional status at baseline and over time to validate capacity, decline, or progress. These quality measures will inform HH providers about opportunities to improve care in the area of self-care and function and strengthen incentives for quality improvement related to patient function.

Although functional assessment data are currently collected in HH, this data collection has employed different assessment instruments, scales, and items relative to other PAC providers. 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 functioning challenging when patients/residents transition from one type of provider to another. Collection of standardized functional assessment data across all PAC settings, 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

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<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> Riggs, J. S. & Madigan, E. A. (2012). Describing variation in home health care episodes for patients with heart failure. *Home Health Care Management and Practice*, 24(3): 146-152.

<sup>8</sup> Kortebein P, Ferrando A, Lombebeida J, Wolfe R, Evans WJ (2007). Effect of 10 days of bed rest on skeletal muscle in health adults. *JAMA*; 297(16):1772-4.

<sup>9</sup> Ellenbecker CH, Samia L, Cushman MJ, Alster K (2008). Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 13.

<sup>10</sup> Kresevic DM. Assessment of physical function. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). (2012). *Evidence-based geriatric nursing protocols for best practice*. 4th ed. New York (NY): Springer Publishing Company, p. 89-103.

(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 skilled nursing facilities (SNFs), HHAs, long-term care hospitals (LTCHs), and inpatient rehabilitation facilities (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 Set: Volume 1 of 3."<sup>11</sup> 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"<sup>12</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>13</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>.

### **1.1.3 Denominator Statement**

Number of Medicare/Medicaid (including Advantage programs) covered home health quality episodes of care for patients who are at least 18 years of age, ending during the reporting period that do not meet the generic exclusions described below.

### **1.1.4 Denominator Details**

All home health quality episodes of care, defined as a start/resumption of care assessment (OASIS item M0100) (Reason for Assessment) = 1 (Start of care) or 3 (Resumption of care)) paired with a corresponding discharge/transfer/death assessment (M0100 (Reason for Assessment) = 6 (Transfer to inpatient facility – not discharged), 7 (Transfer to inpatient facility – discharged), 8 (Death at home), or 9 (Discharge from agency)), other than those covered by generic and measure-specific denominator exclusions.

### **1.1.5 Numerator Statement**

The numerator for this quality measure is the number of home health quality episodes with functional assessment data at SOC/ROC and discharge for each of twelve self-care and mobility activities and at least one self-care or mobility goal for one of those twelve activities.

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<sup>11</sup> Research Triangle International. The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set: Final Report on the Development of the CARE Item Set (Contract HHSM-500-2005-00291) 2012, August.

<sup>12</sup> *IBID*

<sup>13</sup> *IBID*

### 1.1.6 Numerator Details

All three of the following are required for the patient to be counted in the numerator:

1. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted for each of the twelve select functional assessment activities on the SOC/ROC assessment;
2. A valid numeric score, which is a discharge goal indicating the patient's expected level of independence or a valid code indicating the activity was not attempted, for at least one of the select twelve self-care or mobility activities on the SOC/ROC assessment; and
3. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted for each of the twelve select functional assessment activities on the discharge assessment.

A dash (–) value indicates that no information is available related to functional performance and/or that a discharge goal was not established. A dash is not included in the valid numeric scores or valid activity not attempted codes that favorably contribute to the numerator.

### 1.1.7 Incomplete Episode

For home health episodes ending in a qualifying admission to an inpatient facility [Transfer], or a Death at Home, the discharge functional status data would not be required for the episode to be included in the numerator. For episodes ending in transfer or death at home, the following are required for these patients to be counted in the numerator:

1. A valid numeric score indicating the patient's functional status, or a valid code indicating the activity was not attempted for each of the twelve select functional assessment activities on the SOC/ROC assessment; and
2. A valid numeric score, which is a discharge goal indicating the patient's expected level of independence, or a valid code indicating the activity was not attempted for at least one of the select twelve self-care or mobility activities on the SOC/ROC assessment.

**The following functional activities are included in this measure:**

#### **Self-Care Items**

**Eating (GG0130A):** The ability to use suitable utensils to bring food and/or liquid to the mouth and swallow once the meal is presented placed before the patient.

**Oral hygiene (GG0130B):** The ability to use suitable items to clean teeth. [Dentures (if applicable): The ability to insert and remove dentures into and from the mouth, and manage denture soaking and rinsing with use of equipment.

**Toileting hygiene (GG0130C):** The ability to maintain perineal hygiene, adjust clothes before and after voiding or having a bowel movement. 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 come to a standing position from sitting in a chair, wheelchair, or on the side of the bed.

**Chair/bed-to-chair transfer (GG0170E):** The ability to 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 activities:*

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

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

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

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

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

### **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 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 completes activity. Assistance may be provided throughout the activity or intermittently.
- 3. Partial/moderate assistance** – Helper does LESS THAN HALF the effort. Helper lifts or holds 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 does none of the effort to complete the activity. Or the assistance of 2 or more helpers is required for the patient to complete the activity.

*If activity was not attempted, code reason:*

**07. Patient/resident refused**

09. **Not applicable** – Not attempted and the patient did not perform this activity prior to the current illness, exacerbation or injury.

10. **Not attempted due to environmental limitations** (e.g., lack of equipment, weather constraints)

**88. Not attempted due to medical conditions or safety concerns**

**1.1.8 Risk Adjustment**

This is a process measure and not risk-adjusted

**1.1.9 Quality Measure Calculation Algorithm**

1. For each provider, the records of patients meeting the inclusion criteria (i.e., denominator) including those discharged, transferred to an inpatient facility or who died at home during the 12-month target time period are identified and counted. This count is the denominator.
2. The records of patients not transferred to an inpatient facility or who did not die at home are identified and the number of these episodes with complete SOC/ROC functional assessment data for the twelve activities included in the measure (codes 1 through 6 or 7, 9, 10 or 88)\* AND at least one self-care or mobility goal (codes 1 through 6 or 7, 9, 10 or 88) AND complete discharge functional assessment data (codes 1 through 6 or 7, 9, 10 or 88)\* is counted.

\*For the corresponding time point, patients who are walking as indicated by GG0170I1 (codes 1 through 6), complete functional assessment data (codes 1 through 6 or 7, 9, 10 or 88) is needed for “GG0170J Walk 50 feet with two turns” and “GG0170K Walk 150 feet.” For the corresponding time point, patients who use wheelchairs as indicated by GG170Q1 (code 1), complete functional assessment data (codes 1 through 6, 7, 9, 10 or 88) is needed for “GG0170R Wheel 50 feet with two turns” and “GG0170S Wheel 150 feet” and type of wheelchair/scooter (codes 1 or 2).

3. The records of patients who are transferred to an inpatient facility or who died at home are identified, and the number of these patient records with complete SOC/ROC functional status data (codes 1 through 6 or 7, 9,10 or 88) AND at least one self-care or mobility goal (codes 1 through 6 or 7, 9,10 or 88) is counted.+

+For patients who are walking as indicated by GG0170I1 (codes 1 through 6), complete functional assessment data (codes 1 through 6 or 7, 9, 10 or 88) is needed for “GG0170J Walk 50 feet with two turns” and “GG0170K Walk 150 feet.” For

patients who use wheelchairs as indicated by GG170Q1 (code 1), complete functional assessment data (codes 1 through 6, 7, 9, 10 or 88) is needed for “GG0170R Wheel 50 feet with two turns” and “GG0170S Wheel 150 feet” and type of wheelchair/scooter (codes 1 or 2).

4. The counts from step 2 and step 3 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.

#### **1.1.10 Denominator Exclusions**

There are no measure-specific exclusions.

#### **1.1.11 Numerator Exclusions**

Medicare-certified home health agencies are currently required to collect and submit OASIS data only for adult (aged 18 and over), non-maternity Medicare and Medicaid patients who are receiving skilled home health care. Therefore, maternity patients, patients less than 18 years of age, non-Medicare/Medicaid patients, and patients who are not receiving skilled home services are all excluded from the measure calculation because OASIS data for these populations is not required to be collected or submitted.. However, the OASIS items and related measures could potentially be used for other adult patients receiving services in a community setting, ideally with further testing. Publicly reported data for HHAs on CMS’s Home Health Compare Web site require that the HHA have at least 20 observations for the quality measure and that the HHA has been in operation at least six months.

## **1.2 Application of Percent of Residents Experiencing One or More Falls with Major Injury (NQF #0674)**

### **1.2.1 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 quality episodes in which the patient experiences one or more falls with major injury (defined as bone fractures, joint dislocations, closed-head injuries with altered consciousness, or subdural hematoma) during the home health episode.

The data for the measure is submitted via the OASIS for home health 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 has experienced any falls since start of care (SOC)/resumption of care (ROC). Because the home health measure is based on quality episode-level data reported at discharge, transfer or death at home, the item (J1800) for the OASIS asks whether the patient has experienced any falls since SOC/ROC. 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).

### **1.2.2 Denominator Statement**

All quality episodes ending during the reporting period that are eligible except those that meet the exclusions.

### **1.2.3 Denominator Details**

All home health episodes of care, defined as a start/resumption of care assessment (OASIS item M0100) (Reason for Assessment) = 1 (Start of care) or 3 (Resumption of care)) paired with a corresponding transfer, death, or discharge assessment (M0100 (Reason for Assessment) = 6 (Transfer to inpatient facility – not discharged), 7 (Transfer to inpatient facility – discharged), 8 (Death at home), or 9 (Discharge from agency)), other than those covered by generic and measure-specific denominator exclusions.

### **1.2.4 Numerator Statement**

The numerator for this quality measure is the number of quality episodes in which the patient experienced one or more falls that resulted in major injury during the episode of care.

### **1.2.5 Numerator Details**

Quality episodes in which the patients had an assessment that indicated one or more falls that resulted in major injury (J1900C = [Coding 1, 2]).

### 1.2.6 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):

**No Injury:** No evidence of any injury is noted on physical assessment by the nurse or primary care clinician; no complaints of pain or injury by the patient, no change in the patient's behavior is noted after 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.

The item (J1900C) reports whether patient had one or more falls that resulted in major injury since the beginning of the quality episode (since the most recent SOC/ROC).

### 1.2.7 Risk Adjustment

This measure is not risk-adjusted.

### 1.2.8 Quality Measure Calculation Algorithm

The following steps would be used to calculate the measure. Since this measure is not risk-adjusted, only the agency observed score is computed.

#### *Calculate the facility observed score (steps 1 through 3)*

**Step 1.** Calculate the denominator count:

Calculate the number of quality episodes, except for those who meet the exclusion criteria. For each provider, the records of patients meeting the inclusion criteria (i.e., denominator) including those discharged, transferred to an inpatient facility or who died at home during the 12-month target time period are identified and counted. This count is the denominator.

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

Calculate the number of quality episodes during the selected time window for those who experienced one or more falls that resulted in major injury during the episode of care.

**Step 3.** Calculate the agency's observed score:

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

### **1.2.9 Denominator Exclusions**

The quality episode is excluded if one of the following is true for all of the look-back scan assessments:

1. The occurrence of falls was not assessed (J1800 = “-” OR
2. The assessment indicates that a fall occurred AND the number of falls with major injury was not assessed (J1900C = “-”)

### **1.2.10 Numerator Exclusions**

Medicare-certified home health agencies are currently required to collect and submit OASIS data only for adult (aged 18 and over), non-maternity Medicare and Medicaid patients who are receiving skilled home health care. Therefore, maternity patients, patients less than 18 years of age, non-Medicare/Medicaid patients, and patients who are not receiving skilled home services are all excluded from the measure calculation because OASIS data for these populations is not required to be collected or submitted. However, the OASIS items and related measures could potentially be used for other adult patients receiving services in a community setting, ideally with further testing. Publicly reported data for HHAs on CMS’s Home Health Compare Web site require that the HHA have at least 20 observations for the quality measure and that the HHA has been in operation at least six months.

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

### 1.3.1 Quality Measure Description

This quality measure reports the percent of quality episodes in which the patient has one or more Stage 2-4 pressure ulcers, or an unstageable ulcer/injury, present at discharge that is/are new or worsened since the beginning of the quality episode.<sup>14</sup> The measure is calculated using data from the OASIS. For home health patients, this measure reports the percent of quality episodes with reports of Stage 2-4 pressure ulcers, or unstageable pressure ulcers/injuries due to slough/eschar, non-removable dressing/device, or deep tissue injury, that were not present or were at a lesser stage on start of care/resumption of care.

### 1.3.2 Purpose/Rationale for Quality Measure

This quality measure replaces the pressure ulcer measure, Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678), in the HH QRP measure set beginning with the CY 2020 HH QRP. The change in the measure name is to reduce confusion about the new modified measure. The modified version differs from the previous version of the measure because it includes new or worsened unstageable pressure ulcers, including deep tissue injuries (DTIs), in the measure numerator. The modified version of the measure also contains updated specifications intended to eliminate redundancies in the assessment items needed for its calculation and to reduce the potential for underestimating the frequency of pressure ulcers. The modified version of the measure satisfies the IMPACT Act domain of “Skin integrity and changes in skin integrity.” In order to respond to recommendations provided by a cross-setting pressure ulcer Technical Expert Panel (TEP) and supported by the National Pressure Ulcer Advisory Panel (NPUAP), the previous quality measure modified in two ways. First, the measure has been modified to incorporate the addition of unstageable pressure ulcers due to slough or eschar, unstageable pressure ulcers/injuries due to non-removable dressing or device, and unstageable pressure ulcers/ injuries presenting as deep tissue injuries in the numerator. This measure is utilized across the PAC settings, including HH, IRF, SNF, and LTCH settings.

Second, the measure calculation has been amended to include M1311 items instead of the now retired M1313 items for the HH QRP. This item calculation modification is intended to reduce redundancies in assessment items. To reflect these two changes, the measure was finalized in CY 2018 federal rulemaking as: Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury.

Regardless of setting or provider type, pressure ulcers/ injuries are recognized as a serious medical condition. Considerable evidence exists regarding the seriousness of pressure ulcers/ injuries, and the relationship between pressure ulcers/ injuries and pain, decreased quality of life, and increased mortality in aging populations.<sup>15 16 17 18</sup> Pressure ulcers/ injuries interfere

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<sup>14</sup> For the purposes of payment determination in the Home Health Quality Reporting Program, quality episodes are defined by pairing a SOC/ROC assessment with an end of care (EOC) assessment. EOC assessments include Discharge from Agency, Transfer to an Inpatient Facility and Death at Home.

<sup>15</sup> Casey, G. (2013). “Pressure ulcers reflect quality of nursing care.” *Nurs N Z* 19(10): 20-24.

<sup>16</sup> Gorzoni, M. L. and S. L. Pires (2011). “Deaths in nursing homes.” *Rev Assoc Med Bras* 57(3): 327-331.

<sup>17</sup> 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.

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>19 20 21</sup> Additionally, patients with acute care hospitalizations related to pressure ulcers/ injuries 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>22 23</sup>

Pressure ulcers/ injuries typically result from prolonged periods of uninterrupted pressure on the skin, soft tissue, muscle, or bone.<sup>5 9 24</sup> Elderly individuals receiving home health care have a wide range of impairments and/or medical conditions that increase their risk of developing pressure ulcers/ injuries, 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), a history of pressure ulcers/ injuries, or presence of a pressure ulcer/injury at admission are additional factors that increase pressure ulcer/injury risk in elderly patients.<sup>1 5 6 8 25 26 27 28 29 30 31</sup>

Pressure ulcers/injuries are high-cost adverse events across the spectrum of health care settings, from acute hospitals to home health.<sup>5 8 10</sup> Pressure ulcer/injury incidence rates vary considerably by clinical setting, ranging from 0.4% to 38% in acute care, 2.2% to 23.9% in skilled nursing facilities [SNFs] and nursing homes [NHs], and 0% to 17% in home health.<sup>8 9</sup> As reported in the Federal Register, in 2006 the average cost for a hospital stay related to pressure ulcers/injuries was \$40,381.<sup>32</sup> The Advancing Excellence in America's Nursing Homes

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- <sup>18</sup> White-Chu, E. F., et al. (2011). "Pressure ulcers in long-term care." *Clin Geriatr Med* 27(2): 241-258.
- <sup>19</sup> 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.
- <sup>20</sup> 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>.
- <sup>21</sup> Wang, H., et al. (2014). "Impact of pressure ulcers on outcomes in inpatient rehabilitation facilities." *Am J Phys Med Rehabil* 93(3): 207-216.
- <sup>22</sup> 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.
- <sup>23</sup> 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>.
- <sup>24</sup> 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>.
- <sup>25</sup> 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>.
- <sup>26</sup> Cai, S., et al. (2013). "Obesity and pressure ulcers among nursing home residents." *Med Care* 51(6): 478-486.
- <sup>27</sup> 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]
- <sup>28</sup> 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>.
- <sup>29</sup> 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.
- <sup>30</sup> 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.
- <sup>31</sup> Reddy, M. (2011). "Pressure ulcers." *Clin Evid (Online)* 2011.
- <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.

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>

The terminology and definitions developed by the National Pressure Ulcer Advisory Panel (NPUAP) for the care of pressure ulcers are often used to inform the PAC patient and resident assessment instruments and corresponding assessment manuals, specifically the IRF-PAI, the LTCH CARE Data Set, the MDS for SNFs, and the OASIS for HHAs. Considering the recent updates made by the NPUAP to their Pressure Ulcer Staging System, CMS intends to continue the adaptation of NPUAP terminology for coding the patient and resident assessment instruments. CMS will provide guidance which emphasizes that terminology related to these wounds may include injuries, as well as pressure ulcers, while retaining current holistic assessment instructions definitions and terminology.

### 1.3.3 Denominator

The denominator is the number of quality episodes with a discharge in the reporting period, except those that meet the exclusion criteria. HH quality episodes are defined by pairing assessments completed at the start or resumption of care with assessments completed at discharge. (OASIS item M0100 (Reason for Assessment) = 1 (Start of care) or 3 (Resumption of care) paired with a corresponding discharge assessment (M0100 (Reason for Assessment) = 9 (Discharge from agency), other than those covered by generic and measure-specific denominator exclusions.)

### 1.3.4 Denominator Exclusions

1. Quality Episodes that end in a death at home or transfer to an inpatient facility are excluded from this measure as OASIS data collection that occurs at these time points does not contain the items needed to compute this measure.
2. Quality Episodes without an assessment completed at the start or resumption of care and an assessment completed at discharge are excluded.
3. Episodes are excluded if the discharge assessment does not have a usable response for M1311a, M1311b, M1311c, M1311d, M1311e and M1311f. Specifically, episodes are excluded if:

(M1311A1 = ‘-‘ and/or M1311A2 = ‘-‘), and  
(M1311B1 = ‘-‘ and/or M1311B2 = ‘-‘), and  
(M1311C1 = ‘-‘ and/or M1311C2 = ‘-‘), and  
(M1311D1 = ‘-‘ and/or M1311D2 = ‘-‘), and  
(M1311E1 = ‘-‘ and/or M1311E2 = ‘-‘), and  
(M1311F1 = ‘-‘ and/or M1311F2 = ‘-‘)

Episodes with skipped responses (‘^’) are *included* in the denominator.

<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

### 1.3.5 Numerator

The numerator is the number of completed quality episodes for patients whose assessment at discharge indicates one or more new or worsened Stage 2-4 or unstageable pressure ulcers/injuries exist compared to the start or resumption of care assessment.

Where on any discharge assessment:

1. Stage 2 (M1311A1) - (M1311A2) > 0, OR
2. Stage 3 (M1311B1) - (M1311B2) > 0, OR
3. Stage 4 (M1311C1) - (M1311C2) > 0, OR
4. Unstageable – Non-removable dressing/device (M1311D1) - (M1311D2) > 0, OR
5. Unstageable – Slough and/or eschar (M1311E1) - (M1311E2) > 0, OR
6. Unstageable – Deep tissue injury (M1311F1) - (M1311F2) > 0

If one or more (but not all) item pair(s) contain at least one dash value ('-') the item pair(s) is/are ignored and the remaining item pair(s) is/are evaluated.

### 1.3.6 Items Included in the Quality Measure

- **M1311A1.** Number of Stage 2 pressure ulcers, **M1311A2.** Number of these Stage 2 pressure ulcers that were present at most recent SOC/ROC
- **M1311B1.** Number of Stage 3 pressure ulcers, **M1311B2.** Number of these Stage 3 pressure ulcers that were present at most recent SOC/ROC
- **M1311C1.** Number of Stage 4 pressure ulcers, **M1311C2.** Number of these Stage 4 pressure ulcers that were present at most recent SOC/ROC
- **M1311D1.** Number of unstageable pressure ulcers/injuries due to non-removable dressing/device, **M1311D2.** Number of these unstageable pressure ulcers/injuries that were present at most recent SOC/ROC
- **M1311E1.** Unstageable: Slough and/or eschar, **M1311E2.** Number of these unstageable pressure ulcers that were present at most recent SOC/ROC
- **M1311F1.** Unstageable: Deep tissue injury, **M1311F2.** Number of these unstageable pressure injuries that were present at most recent SOC/ROC

### 1.3.7 Risk Adjustment Factors

This measure will be risk-adjusted based on an evaluation of potential risk factors and their statistically significant impact on the outcome. Risk factor covariates include:

1. Indicator of supervision/touching assistance or more at SOC/ROC for functional mobility item Lying to Sitting on Side of Bed (GG0170C):  
Covariate = [1] (yes) if GG0170C = [01, 02, 03, 04, 07, 09, 10, 88]  
Covariate = [0] (no) if GG0170C = [05, 06, -]

2. Indicator of bowel incontinence at least occasionally at SOC/ROC (M1620):  
Covariate = [1] if M1620 = [2, 3, 4, 5]  
Covariate = [0] if M1620 = [0, 1, NA, UK]
3. Have diabetes mellitus, peripheral vascular disease or peripheral arterial disease:  
Covariate = [1] (yes) if any of the following are true at SOC/ROC: M1028 = [1] (checked) or M1028 = [2] (checked)  
Covariate = [0] (no) if M1028 = [1] (not checked) and M1028 = [2] (not checked)
4. Indicator of Low Body Mass Index, based on Height (M1060a) and Weight (M1060b) at SOC/ROC  
Covariate = [1] (yes) if BMI  $\geq$  [12.0] AND  $\leq$  [19.0]  
Covariate = [0] (no) if BMI  $>$  [19.0]  
Covariate = [0] (no) if M1060a = [-] OR M1060b = [-] OR BMI  $<$  [12.0], ('-' = No response available)

Where: BMI = (weight \* 703 / height<sup>2</sup>) = ((M1060b) \* 703) / (M1060a<sup>2</sup>) and the resulting value is rounded to one decimal.

### 1.3.8 Quality Measure Calculation Algorithm

The following steps are used to calculate the measure:

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

**Step 1.** Calculate the denominator count:

Calculate the total number of quality episodes with a discharge OASIS assessment in the measure time window that do not meet the exclusion criteria.

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

Calculate the total number of quality episodes in the denominator whose discharge OASIS assessments indicates one or more new or worsened pressure ulcers at discharge compared to start or resumption of care.

**Step 3.** Calculate the agency's observed rate:

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

#### B. Calculate the predicted rate for each quality episode (steps 4 and 5)

**Step 4.** Determine presence or absence of the pressure ulcer risk factors for each patient:

If dichotomous risk factor covariates are used, assign covariate values, either '0' for covariate condition not present or '1' for covariate condition present, for each quality episode for each of the covariates as reported at SOC/ROC, as described in the section above.

**Step 5.** Calculate the predicted rate for each quality episode with the following formula:

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

Where  $e$  is the base of natural logarithms and  $X$  is a linear combination of the constant and the logistic regression coefficients (**Exhibit 1**) times the covariate scores (from Formula [2], below).

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

Where  $B_0$  is the logistic regression constant,  $B_1$  is the logistic regression coefficient for the first covariate (where applicable),  $\text{COVA}$  is the episode-level rate for the first covariate,  $B_2$  is the logistic regression coefficient for the second covariate, and  $\text{COVB}$  is the episode-level rate 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 updated each reporting period.

C. Calculate the agency predicted rate (step 6)

**Step 6.** Once a predicted QM rate has been calculated for all quality episodes, calculate the mean agency-level predicted QM rate by averaging all episode-level predicted values for that agency.

D. Calculate national predicted rate (step 7)

**Step 7.** Calculate the national predicted rate:

Once a predicted QM value has been calculated for all episodes, calculate the mean national-level predicted QM rate by averaging all episode-level predicted values. Note that the sample will include only those quality episodes with non-missing data for the component covariates.

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

**Step 8.** Calculate the agency-level risk-adjusted rate based on the:

agency-level observed QM rate (step 3),

agency-level mean predicted QM rate (step 6), and

\*national mean predicted QM rate (step 7), using the following formula:

agency risk adjusted rate = agency observed rate + national predicted rate – agency predicted rate

If the agency risk adjusted rate is greater than 100%, then set to 100%. If the agency risk adjusted rate is less than 0%, then set to 0%.

*\*The national predicted QM rates are updated each reporting period.*

**Exhibit 1. Logistic Regression Coefficients for the Percent of Residents or Patients with Changes in Skin Integrity (CMS ID: 5852-10)**

Calculation Date <sup>1</sup>	Constant (Intercept)	Covariate Regression Estimates <sup>2</sup>
July 2, 2019	-6.5498	1. Covariate 1 (Functional Limitation): 1.4218 2. Covariate 2 (Bowel Incontinence): 1.4917 3. Covariate 3 (Diabetes or PVD/PAD): 0.3020 4. Covariate 4 (Low BMI): 0.5046