



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

### Brief Measure Information

**NQF #: 2634**

**Corresponding Measures:**

**De.2. Measure Title:** Inpatient Rehabilitation Facility (IRF) Functional Outcome Measure: Change in Mobility Score for Medical Rehabilitation Patients

**Co.1.1. Measure Steward:** Centers for Medicare & Medicaid Services

**De.3. Brief Description of Measure:** This measure estimates the mean risk-adjusted mean change in mobility score between admission and discharge for Inpatient Rehabilitation Facility (IRF) Medicare Part A and Medicare Advantage patients.

**1b.1. Developer Rationale:** During an Inpatient Rehabilitation Facility (IRF) stay, the goals of treatment include fostering the patient's ability to manage his or her daily activities so that the patient can complete self-care and mobility activities as independently as possible and, if feasible, return to a safe, active and productive life in a community-based setting. Given that the primary goal of rehabilitation is function improvement, IRF clinicians have traditionally assessed and documented patients' functional status at admission and discharge to calculate change in function scores. The change in function scores represent the effectiveness of the rehabilitation care provided to patients in the rehabilitation unit or hospital.

The mobility quality measure uses standardized data elements for the collection of functional status data, which can improve communication when patients are transferred between providers. Most IRF patients receive care in an acute care hospital prior to the IRF stay, and many IRF patients receive care from another provider after the IRF stay. Use of standardized clinical data to describe a patient's status across providers can facilitate communication across providers.

In describing the importance of functional status, the National Committee on Vital and Health Statistics Subcommittee on Health (2001) noted, "Information on functional status is becoming increasingly essential for fostering healthy people and a health population. Achieving optimal health and well-being for Americans requires an understanding across the life space of the effects of people's health conditions on their ability to do basic activities and participate in life situations, in other words, their functional status."

This quality measure will inform IRF providers about opportunities to improve care in the area of function and strengthen incentives for quality improvement related to patient function.

**Citation:**

National Committee on Vital and Health Statistics Subcommittee on Health. Classifying and Reporting Functional Status. 2001. Retrieved from <http://www.ncvhs.hhs.gov/010617rp.pdf>

**S.4. Numerator Statement:** The measure does not have a simple form for the numerator and denominator. This measure estimates the risk-adjusted change in mobility score between admission and discharge among Inpatient Rehabilitation Facility (IRF) Medicare Part A and Medicare Advantage patients age 21 and older. The change in mobility score is calculated as the difference between the discharge mobility score and the admission mobility score.

**S.6. Denominator Statement:** The denominator is the number of Inpatient Rehabilitation Facility Medicare Part A and Medicare Advantage patient stays, except those that meet the exclusion criteria.

**S.8. Denominator Exclusions:** This quality measure has six patient-level exclusion criteria:

1) Patients with incomplete stays.

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Rationale: When a patient has an incomplete stay, for example, the patients leave urgently due to a medical emergency, it can be challenging to gather accurate discharge functional status data. Patients with incomplete stays include patients who are unexpectedly discharged to an acute care setting (Short-stay Acute Hospital, Critical Access Hospital, Inpatient Psychiatric Facility, or Long-term Care Hospital); patients who die or leave an Inpatient Rehabilitation Facility (IRF) against medical advice; and patients with a length of stay less than 3 days.

2) Patients who are independent with all mobility activities at the time of admission.

Rationale: Patients who are independent with all the mobility items (with the exception of the wheelchair items GG0170R and GG0170S) at the time of admission are assigned the highest score on all the mobility items, and thus, would not be able to show functional improvement on this same set of items at discharge.

3) Patients with the following medical conditions on admission: coma, persistent vegetative state; complete quadriplegia; locked-in syndrome or severe anoxic brain damage, cerebral edema or compression of brain.

Rationale: These patients are excluded because they may have limited or less predictable mobility improvement with the selected mobility items.

4) Patients younger than age 21.

Rationale: There is only limited evidence published about functional outcomes for individuals with Medicare who are younger than 21.

5) Patients discharged to hospice.

Rationale: Patient goals may change during the IRF stay, and functional improvement may no longer be a goal for a patient discharged to hospice.

6) Patients who are not Medicare Part A and Medicare Advantage beneficiaries.

Rationale: IRF-PAI data for patients not covered by the Medicare program are not submitted to the Centers for Medicare and Medicaid Services.

Facility-level quality measure exclusion: For IRFs with fewer than 20 patient stays, data for this quality measure are not publicly reported.

De.1. Measure Type: Outcome

S.17. Data Source: Instrument-Based Data

S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Nov 04, 2015 Most Recent Endorsement Date: Oct 25, 2019

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Not applicable. This measure is not paired or grouped with another measure.

## 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

2634\_NQF\_evidence\_4-22-19.docx

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence.

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Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

Yes

**1b. Performance Gap**

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

**1b.1. Briefly explain the rationale for this measure** (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

*If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.*

During an Inpatient Rehabilitation Facility (IRF) stay, the goals of treatment include fostering the patient's ability to manage his or her daily activities so that the patient can complete self-care and mobility activities as independently as possible and, if feasible, return to a safe, active and productive life in a community-based setting. Given that the primary goal of rehabilitation is function improvement, IRF clinicians have traditionally assessed and documented patients' functional status at admission and discharge to calculate change in function scores. The change in function scores represent the effectiveness of the rehabilitation care provided to patients in the rehabilitation unit or hospital.

The mobility quality measure uses standardized data elements for the collection of functional status data, which can improve communication when patients are transferred between providers. Most IRF patients receive care in an acute care hospital prior to the IRF stay, and many IRF patients receive care from another provider after the IRF stay. Use of standardized clinical data to describe a patient's status across providers can facilitate communication across providers.

In describing the importance of functional status, the National Committee on Vital and Health Statistics Subcommittee on Health (2001) noted, "Information on functional status is becoming increasingly essential for fostering healthy people and a health population. Achieving optimal health and well-being for Americans requires an understanding across the life space of the effects of people's health conditions on their ability to do basic activities and participate in life situations, in other words, their functional status."

This quality measure will inform IRF providers about opportunities to improve care in the area of function and strengthen incentives for quality improvement related to patient function.

Citation:

National Committee on Vital and Health Statistics Subcommittee on Health. Classifying and Reporting Functional Status. 2001. Retrieved from <http://www.ncvhs.hhs.gov/010617rp.pdf>

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.** *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

We provide comparisons of fiscal year 2017 and calendar year 2017 performance scores using 12 months of data, as well as scores by quarter that were conducted using the national IRF-PAI data. Performance measure scores for a more recent 12-month period (e.g., calendar year 2018) were not yet available for this analysis due to the data correction period providers have to review and correct the data. The fiscal year 2017 IRF-PAI data set includes Medicare patients discharged from IRFs between October 1, 2016 – September 30, 2017 (N=490,032) whereas the calendar year includes patients discharged between January 1, 2017 – December 31, 2017 (N=493,209) before exclusion criteria are applied.

Quality measure score distributions over two 12-month time periods:

1. Fiscal year 2017 (October 1, 2016 – September 30, 2017) (n=1,119 providers)
2. Calendar year 2017 (January 1, 2017 – December 31, 2017) (n=1,117 providers)

Quality measure score distributions by quarter between October 1, 2016 – December 31, 2017 (5 quarters):

1. Quarter 4, 2016 (n=1,103)
2. Quarter 1, 2017 (n=1,105)

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- 3. Quarter 2, 2017 (n=1,107)
- 4. Quarter 3, 2017 (n=1,107)
- 5. Quarter 4, 2017 (n=1,096)

Quality measure score distributions over 12-months were similar between fiscal year 2017 (mean: 28.2; standard deviation: 4.6) and between calendar year 2017 (mean: 28.3; standard deviation: 4.6). Quality measure scores by decile show variations in quality measure scores across IRFs. The interquartile range for the two periods ranged from 6.0 to 6.3 mobility units. Over five quarters (Q4, 2016 – Q4, 2017), the overall mean increased slightly from 27.9 to 28.4, and quality measure score distributions showed variation in IRF outcomes.

#### 12-Month Comparison

##### 1) October 1, 2016 – September 30, 2017 (12 months)

Facilities: 1,119  
Mean score: 28.2  
Standard deviation: 4.6  
Interquartile range: 6.0  
1st decile (13.7-22.4): 20.4  
2nd decile (22.5-24.5): 23.5  
3rd decile (24.6-25.7): 25.1  
4th decile (25.8-26.9): 26.3  
5th decile (27.0-28.0): 27.5  
6th decile (28.1-29.0): 28.5  
7th decile (29.1-30.3): 29.6  
8th decile (30.4-32.0): 31.2  
9th decile (32.1-34.2): 33.0  
10th decile (34.3-52.6): 36.4  
Minimum: 13.7  
Maximum: 52.6

##### 2) Jan 1, 2017 – Dec 31, 2017 (12 months)

Facilities: 1,117  
Mean score: 28.3  
Standard deviation: 4.6  
Interquartile range: 6.3  
1st decile (13.3-22.5): 20.6  
2nd decile (22.6-24.5): 23.6  
3rd decile (24.6-25.8): 25.1  
4th decile (25.9-27.0): 26.4  
5th decile (27.1-28.0): 27.5  
6th decile (28.1-29.2): 28.6  
7th decile (29.3-30.7): 30.0  
8th decile (30.8-32.2): 31.4  
9th decile (32.3-34.3): 33.2  
10th decile (34.4-46.7): 36.5  
Minimum: 13.3  
Maximum: 46.7

#### Quality Measure Score Distributions by Quarter

##### 1) October 1, 2016 – December 31, 2016 (Q4, 2016)

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Facilities: 1,103  
Mean score: 27.9  
Standard deviation: 5.1  
Interquartile range: 6.6  
Minimum: 8.4  
Maximum: 55.8

2) January 1, 2017 – March 31, 2017 (Q1, 2017)

Facilities: 1,105  
Mean score: 28.1  
Standard deviation: 4.9  
Interquartile range: 6.5  
Minimum: 13.3  
Maximum: 55.8

3) April 1, 2017 – June 30, 2017 (Q2, 2017)

Facilities: 1,107  
Mean score: 28.4  
Standard deviation: 5.1  
Interquartile range: 6.6  
Minimum: 9.1  
Maximum: 52.2

4) July 1, 2017 – September 30, 2017 (Q3, 2017)

Facilities: 1,107  
Mean score: 28.4  
Standard deviation: 5.1  
Interquartile range: 6.8  
Minimum: 12.7  
Maximum: 47.1

5) October 1, 2017 – December 31, 2017 (Q4, 2017)

Facilities: 1,096  
Mean score: 28.4  
Standard deviation: 5.1  
Interquartile range: 7.1  
Minimum: 2.8  
Maximum: 51.8

Note: Scores are reported as units of change in mobility; Providers with < 20 stays during the 12-month testing period are excluded.  
Source: RTI analysis of IRF-PAI October 2016 – December 2017 (Program reference: MV50, MV64).

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

Research has shown differences in IRF patients' functional (self-care and mobility) outcomes by geographic region, facility characteristics, IRF length of stay and race/ethnicity after adjusting for key patient demographic characteristics and admission clinical status, which supports the need to monitor IRF patients' functional outcomes. We conducted a literature search to identify recent relevant studies published between 2012 and 2018 using PubMed. Among the 30 articles initially identified by the search, 15 addressed gaps in performance for functional outcomes, and findings from these studies are summarized below. Note that the

literature addresses motor functional outcomes broadly, rather than self-care or mobility specifically.

1) Variations in Functional Outcomes (Self-Care and Mobility) by Geographic Region:

We identified three studies focused on variation by geographic regions. While one study found that functional status and change in function did not vary substantially across regions (Reistetter et al., 2014), two more recent studies found significant differences in functional outcomes based on regional differences after adjusting for patient-level and facility-level characteristics (Reistetter et al., 2015; Teppala et al., 2017). Some of the variation in outcomes appear to be associated with facility-level characteristics rather than geography. Comparison of intra-class correlation coefficients from two- and three-level models showed that while the variance by facility is reduced when adjusting for random effect of hospital referral region (HRR), the reduction in the percentage of variance due to HRR is much greater when adjusting for random effect of facility. Findings suggest that there are opportunities for improvement in the area of functional status based on variations in outcomes by geographic region.

References:

Reistetter, T. A., et al. (2014). "Regional Variation in Stroke Rehabilitation Outcomes." *Arch Phys Med Rehabil.* 95(1), 29-38.  
Reistetter T.A., et al. (2015). "Geographic and Facility Variation in Inpatient Stroke Rehabilitation: Multilevel Analysis of Functional Status." *Arch Phys Med Rehabil.* 96(7):1248-1254.  
Srinivas Teppala, et al. (2017). "Variation in Functional Status After Hip Fracture: Facility and Regional Influence on Mobility and Self-Care." *J Gerontol A Biol Sci Med Sci* 72(10): 1376-1382.

2) Variations in Functional Outcomes (Self-Care and Mobility) by Facility Characteristics:

Three studies reported significant associations between facility-level characteristics and functional outcomes (Cary, et al., 2015; Graham, et al., 2013; Karmarkar, et al., 2014). Cary et al. (Cary, et al., 2015) examined variation in functional discharge scores by IRF type, ownership type, facility size as defined by number of beds, and rurality. All facility characteristics except government ownership, were associated with motor function on discharge. Using hierarchical regression modeling to estimate the association between facility characteristics and functional outcomes, the authors found that patients treated at freestanding rehabilitation hospitals, for-profit facilities, smaller facilities, and rural facilities achieved higher discharge motor scores and change in motor scores. Cary et al. noted that findings with respect to ownership type, may relate to possible selection behavior and coding practices in response to financial incentives in the Prospective Payment System.

Graham et al. (Graham, et al., 2013) examined the association between volume, as defined by average annual diagnosis facility volume for three specific diagnoses (stroke, fracture, and joint replacement) and functional outcomes. Hierarchical models showed a small, but also significant association between facility volume and functional discharge status, with the greatest effect being observed in comparing the variation between the referent and highest volume quartile.

Karmarkar et al. 2014 studied the association between IRF facility-level factors and discharge functional status of patients after stroke, accounting for patient factors. Multi-level modeling results demonstrated that although patient mix explained about 50 percent of variations in functional outcomes, facility-level factors accounted for a large part of functional outcome variations across IRFs.

Findings suggest that there are opportunities for improvement in the area of functional status based on variations in outcomes by facility characteristics.

References:

Cary, M. P., et al. (2015). "Performance-based outcomes of inpatient rehabilitation facilities treating hip fracture patients in the United States." *Archives of Physical Medicine and Rehabilitation* 96(5): 790-798.  
Graham, J. E., et al. (2013). "Inpatient rehabilitation volume and functional outcomes in stroke, lower extremity fracture, and lower extremity joint replacement." *Med Care* 51(5): 404-412.  
Karmarkar, A. M., et al. (2014, June). "Is Variability in Stroke Outcomes Attributable to Post-Acute Inpatient Rehabilitation Facility Factors?" *AcademyHealth, San Diego, CA.*

3) Variations in Functional Outcomes (Self-Care and Mobility) by IRF Length of Stay:

Several studies (O'Brien, et al., 2013; Camicia, et al., 2015; Cary, et al., 2015; Cary, et al., 2016) have shown positive associations between length of stay (LOS) and functional status at discharge, as well as functional gain. A study of IRF data spanning 2002-2007

found that since the implementation of a payment policy, LOS decreased by 1.8 days and that mean discharge FIM scores declined during the study period (O'Brien, et al., 2013).

More recent research points to more nuanced findings suggesting that the association between LOS and functional gain varies by level of impairment severity. Camicia et al.'s (Camicia et al., 2015) study of stroke patients' functional outcomes and LOS, found longer LOS was negatively associated with functional gains of patients in the mildly impaired group, while a positive association was found among patients with moderate and severe impairments. Factors noted as possible contributors to this variation included the negative effects of hospitalization, and differences in characteristics of the various impairment groups, such as differences in age distribution, comorbidities, and functional status at admission.

#### References:

- Camicia, M., et al. (2016). "Length of Stay at Inpatient Rehabilitation Facility and Stroke Patient Outcomes." *Rehabil Nurs* 41(2): 78-90.
- Cary, M. P., et al. (2015). "Performance-based outcomes of inpatient rehabilitation facilities treating hip fracture patients in the United States." *Archives of Physical Medicine and Rehabilitation* 96(5): 790-798.
- Cary, M. P., et al. (2016). "Inpatient Rehabilitation Outcomes in a National Sample of Medicare Beneficiaries With Hip Fracture." *Journal of Applied Gerontology* 35(1): 62-83.
- O'Brien, S.R., et al. (2013). "Shorter Length of Stay is Associated with Worse Functional Outcomes for Medicare Beneficiaries With Stroke." *Phys Ther.* 93(12): 1592-1602.

#### 4) Variations in Functional Outcomes (Self-Care and Mobility) by Race and Ethnicity:

Literature focused on functional outcomes by race/ethnicity suggests lower functional outcomes for racial and ethnic minority patients, especially Black patients relative to their White counterparts (Berges, et al., 2012; Fyffe, et al., 2014; Ellis, et al., 2016; Cary, et al., 2016; Howrey, et al., 2017), though one article found no association between race and functional outcomes for patients with stroke undergoing rehabilitation (Rabadi, et al., 2012). Two studies with inconsistent findings suggest that variations in functional status or gains across race/ethnic groups may be attributable to the use of different measurement approaches (Ellis et al., 2016; Ellis et al., 2014).

#### References:

- Berges, I-M, et al. (2012). "Recovery of Functional Status After Stroke in a Tri-Ethnic Population." *PM R.* 4(4): 290-295.
- Cary, M. P., et al. (2016). "Inpatient Rehabilitation Outcomes in a National Sample of Medicare Beneficiaries With Hip Fracture." *Journal of Applied Gerontology* 35(1): 62-83.
- Ellis, C., et al. (2014). "Racial/Ethnic Differences in Poststroke Rehabilitation Outcomes." *Stroke Research and Treatment.*
- Ellis, C., et al. (2016). "Racial Differences in Poststroke Rehabilitation Utilization and Functional Outcomes." *Arch Phys Med Rehabil.* 96: 84-90.
- Fyffe, D.C., et al. (2014). "Racial and Ethnic Disparities in Functioning at Discharge and Follow-Up Among Patients With Motor Complete Spinal Cord Injury." *Am J Phys Med Rehabil* 95: 2140-51.
- Howrey, B.T., et al. (2017). "Trajectories of Functional Change after Inpatient Rehabilitation for Traumatic Brain Injury." *Arch Phys Med Rehabil* 98(8): 1606-1613.
- Rabadi, M. H., et al. (2012). "Does race influence functional outcomes in patients with acute stroke undergoing inpatient rehabilitation?" *Am J Phys Med Rehabil* 91(5): 375-382; quiz 383-376.

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

We used the 2017 national IRF-PAI data set, which includes all Medicare patients discharged from IRFs in calendar year 2017, to examine whether there may be disparities in care for population groups related to this measure. Disparities for certain population groups would indicate gaps in care and opportunities for improvement. The 2017 national IRF-PAI data set included 1,129 IRFs who discharged 493,209 patients in 2017.



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We address the issue of disparities for this measure by examining whether there are differences in functional outcomes for population groups that may reflect experience disparities in care, such as for population groups with social risk factors.

We examined whether 5 social risk factors were associated with change in mobility scores, after risk adjustment:

1) dual eligibility (patient-level variable);  
2) race/ethnicity (patient-level variable);  
3) living alone (patient-level variable); 4) urbanicity based on the patient's residence (community-level variable); and 5) socioeconomic status (SES) (community-level variable). Details about how we obtained and calculated this disparities data is available in Sections 1.2 and 1.8 of the Testing form.

We conducted the following analyses to examine the effect of the 5 social risk factors:

1) We calculated the percentage of stays for each social risk factor population group;  
2) We calculated the observed change in mobility score for each social risk factor population group;  
3) We added indicators for each social risk factor group to our risk adjustment model and estimated the coefficients for each group (relative to the reference group) in the model;  
4) We examined the indicators for each social risk factor over time by quarter in our risk adjustment model to examine whether there may be trends for population groups.

Below is a summary of these analyses and results. For more information on disparities in change in mobility related to dual eligibility, race/ethnicity, living alone, urbanicity and SES, please refer to the risk adjustment analyses in the Testing form. Tables and graphics are able to be inserted into the NQF Testing form, unlike this Measure Information form, so we direct readers to Section 2b3.4b of the Testing form for the results presented below in a more readable format (Tables 13, 14, and 15 specifically).

1) The Distribution of Social Risk Factor Patient Population Groups:

We found that 12.2% of patients were dually-eligible with full Medicaid benefits, 79.4% of patients were white, and 29.7% were living alone. We also found that 83.8% of IRF patients lived in urban areas. The lowest quartile of AHRQ SES index ranged from 27.9 - 49.5; the highest quartile ranged from 55.3 – 75.7.

2) Observed Change in Mobility Score by Social Risk Factor:

The mean unadjusted (observed) change in mobility score varied slightly by dual eligibility status, race, Hispanic Ethnicity, and living alone status. Dual eligible patients with full Medicaid benefits had on average 26.2 units of change in mobility while patients who were dual eligible without full Medicaid benefits or who were non-dual eligible had more change in mobility (29.3 and 28.8 units, respectively). For race, the highest mean change in mobility was found among patients who were white (28.9 units of change) or multiracial (28.2 units of change) whereas the lowest was among patients who were Asian (26.5 units of change). Patients who were of non-Hispanic ethnicity had a higher mean change in mobility score (28.6 units of change) than patients who were Hispanic (27.1 units of change). Patients who were living alone prior to their hospitalization had on average 29.8 units of change in mobility whereas those not living alone had 28.0 units of change in mobility. The mean unadjusted (observed) change in mobility scores were similar across urbanicity and SES.

3) Estimated Effect (Coefficient Values) for Each Social Risk Factor (Full Year)

Each social risk factor was then added to our Generalized Linear regression model to get estimated regression coefficients which represent the effect of each individual factor on change in mobility relative to the reference group. The dependent variable was the change in mobility score for each patient, calculated as the difference between the discharge mobility score and admission mobility score. For example, a coefficient value of -0.5 for Black patients would be interpreted to mean that, on average, these patients had a change in mobility score that was 0.5 mobility units less than White patients (the reference group).

Lower mobility change scores were observed and significant for dual eligibility patients with full Medicaid benefits compared to non-duals. Black patients, Asian patients, and patients of American Indian or Alaska Native descent also had lower mobility changes scores compared to White patients. Population groups with higher mobility changes scores included patients who lived alone compared to patients who did not prior to their hospitalization, and patients residing in AHRQ SES Index quartiles 1-3 (i.e., lower SES areas) than patients residing in AHRQ SES Index quartile 4 (i.e., the highest SES areas).

4) Estimated Coefficient Values for Each Social Risk Factor (by Quarter)



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The 2017 analysis described above examining each social risk factor's effect on change in mobility was then performed by quarter to examine possible trends over time (Q1, 2017 – Q4, 2017). The patients included in each quarter and detailed results are provided below.

The differences observed with the full calendar year 2017 data were generally found to be consistent by quarter. The population groups with slightly lower mobility changes scores or higher mobility change scores continued to show these differences. Specifically, the coefficient value for dual eligibility patients with full Medicaid benefits ranged from -1.0223 to -1.5272 depending on the quarter compared to the mobility change scores for non-dual eligible patients. On average, Black patients (coeff. range = -0.9109 to -1.1258) had slightly lower mobility change scores than White patients. For Asian patients, a trend was observed of less improvement compared to White patients across the 4 quarters (coeff. range -0.4216 to -1.4917).

For the population groups with higher mobility changes scores, quarterly results indicate the trend remained for patients who lived alone compared to patients who did not prior to their hospitalization (coeff. range = 0.5724 to 0.9764). For patients residing in AHRQ SES Index quartiles 1-3 (i.e., lower SES areas) we observe slightly higher change in mobility scores in all quarters compared to the AHRQ SES Index quartile 4 (i.e., the highest SES areas). Specifically, SES group quartile 1 (coeff. range = 0.7101 to 0.8845) and SES group quartile 2 (coeff. range = 0.6626 to 0.9283) had the highest coefficient estimates compared to the highest SES group. The coefficients ranged from 0.5013 to 0.8086 for SES quartile 3.

Our testing of social risk factors and their relationships to patients' change in mobility scores indicate that some factors (full dual eligibility, Black, Asian, American Indian or Alaska Native, or Native Hawaiian race) were tied to slightly lower mobility change scores while others (lower SES, living alone, Hispanic ethnicity) were tied to slightly higher mobility change scores. Though the effects on lower changes in mobility scores were small, we believe that continued monitoring of potential disparities in functional outcomes is critical.

Breakdown of patients discharged within each quarter:

Jan 1 – Mar 31, 2017 (Q1 2017) = 107,599

Apr 1 – Jun 30, 2017 (Q2 2017) = 107,725

Jul 1 – Sept 30, 2017 (Q3 2017) = 104,943

Oct 1 – Dec 31, 2017 (Q4 2017) = 108,364

Dual Eligibility (reference = Non-dual)

Dual with full Medicaid

- Q1 2017: estimate = -1.5272; SE = 0.14; p-value <.0001
- Q2 2017: estimate = -1.1146; SE = 0.14; p-value <.0001
- Q3 2017: estimate = -1.3921; SE = 0.14; p-value <.0001
- Q4 2017: estimate = -1.0223; SE = 0.14; p-value <.0001

Dual without full Medicaid

- Q1 2017: estimate = 0.5205; SE = 0.19; p-value = 0.0059
- Q2 2017: estimate = 0.0555; SE = 0.19; p-value = 0.7663
- Q3 2017: estimate = 0.4770; SE = 0.19; p-value = 0.0121
- Q4 2017: estimate = 0.2701; SE = 0.19; p-value = 0.1558

Race/Ethnicity (reference = White)

Black

- Q1 2017: estimate = -1.1258; SE = 0.15; p-value <.0001
- Q2 2017: estimate = -0.9420; SE = 0.15; p-value <.0001
- Q3 2017: estimate = -0.9109; SE = 0.15; p-value <.0001
- Q4 2017: estimate = -0.9402; SE = 0.15; p-value <.0001

Asian

- Q1 2017: estimate = -0.4216; SE = 0.35; p-value = 0.2245
- Q2 2017: estimate = -0.4852; SE = 0.35; p-value = 0.1636
- Q3 2017: estimate = -0.6653; SE = 0.36; p-value = 0.0627
- Q4 2017: estimate = -1.4917; SE = 0.34; p-value <.0001

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American Indian or Alaska Native

- Q1 2017: estimate = -1.3953; SE = 0.77; p-value = 0.0705
- Q2 2017: estimate = -0.9774; SE = 0.75; p-value = 0.1947
- Q3 2017: estimate = 0.0801; SE = 0.75; p-value = 0.9154
- Q4 2017: estimate = -0.7571; SE = 0.78; p-value = 0.3336

Native Hawaiian or Pacific Islander

- Q1 2017: estimate = -0.5893; SE = 0.71; p-value = 0.4095
- Q2 2017: estimate = 0.0913; SE = 0.70; p-value = 0.8960
- Q3 2017: estimate = -0.6660; SE = 0.72; p-value = 0.3521
- Q4 2017: estimate = -0.0911; SE = 0.72; p-value = 0.8988

Multiracial

- Q1 2017: estimate = 0.2442; SE = 1.69; p-value = 0.8852
- Q2 2017: estimate = -1.6941; SE = 1.95; p-value = 0.3847
- Q3 2017: estimate = 3.9326; SE = 1.81; p-value = 0.0301
- Q4 2017: estimate = -0.4757; SE = 1.71; p-value = 0.7808

Hispanic Ethnicity

- Q1 2017: estimate = -0.0037; SE = 0.31; p-value = 0.9905
- Q2 2017: estimate = 0.3972; SE = 0.30; p-value = 0.1853
- Q3 2017: estimate = 0.4610; SE = 0.30; p-value = 0.1256
- Q4 2017: estimate = -0.4171; SE = 0.30; p-value = 0.1652

Living Alone

- Q1 2017: estimate = 0.5724; SE = 0.10; p-value <.0001
- Q2 2017: estimate = 0.8626; SE = 0.10; p-value <.0001
- Q3 2017: estimate = 0.9764; SE = 0.10; p-value <.0001
- Q4 2017: estimate = 0.9295; SE = 0.10; p-value <.0001

Urbanicity (reference = Urban)

Rural

- Q1 2017: estimate = 0.2597; SE = 0.22; p-value = 0.2355
- Q2 2017: estimate = -0.1227; SE = 0.22; p-value = 0.5703
- Q3 2017: estimate = 0.1019; SE = 0.22; p-value = 0.6446
- Q4 2017: estimate = 0.2129; SE = 0.22; p-value = 0.3233

Suburban

- Q1 2017: estimate = 0.1603; SE = 0.14; p-value = 0.2492
- Q2 2017: estimate = 0.1220; SE = 0.14; p-value = 0.3801
- Q3 2017: estimate = 0.2615; SE = 0.14; p-value = 0.0673
- Q4 2017: estimate = 0.0442; SE = 0.14; p-value = 0.7524

AHRQ SES Index\* (reference = Quartile 4)

Quartile 1

- Q1 2017: estimate = 0.8845; SE = 0.13; p-value <.0001
- Q2 2017: estimate = 0.8645; SE = 0.13; p-value <.0001
- Q3 2017: estimate = 0.7101; SE = 0.13; p-value <.0001
- Q4 2017: estimate = 0.7226; SE = 0.13; p-value <.0001

Quartile 2

- Q1 2017: estimate = 0.9283; SE = 0.12; p-value <.0001
- Q2 2017: estimate = 0.6626; SE = 0.12; p-value <.0001
- Q3 2017: estimate = 0.8195; SE = 0.13; p-value <.0001
- Q4 2017: estimate = 0.7624; SE = 0.13; p-value <.0001

Quartile 3

- Q1 2017: estimate = 0.8086; SE = 0.12; p-value <.0001
- Q2 2017: estimate = 0.5280; SE = 0.12; p-value <.0001
- Q3 2017: estimate = 0.6531; SE = 0.12; p-value <.0001

- Q4 2017: estimate = 0.5013; SE = 0.12; p-value <.0001

\* based on patient residence. AHRQ = Agency for Healthcare Research.

Note: SE=Standard error; Patient-level exclusion criteria applied; Data missing for Race, Urbanicity, and AHRQ SES Index not displayed.

Source: RTI analysis of IRF-PAI, January – December 2017. (Program reference: LP65)

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**

We conducted a literature search to identify recent relevant manuscripts published between 2012 and 2018 using PubMed that examined disparities in functional outcomes among IRF patients. We identified 7 studies that focused on differences in outcomes by race/ethnicity group. Findings from these studies are summarized below. Note that the literature addresses motor functional outcomes broadly, rather than self-care or mobility specifically.

Literature focused on functional outcomes by race/ethnicity suggests lower functional outcomes for racial and ethnic minority patients, especially Black patients relative to their White counterparts (Berges, et al., 2012; Fyffe, et al., 2014; Ellis, et al., 2016; Cary, et al., 2016; Howrey, et al., 2017), though one article found no association between race and functional outcomes for patients with stroke undergoing rehabilitation (Rabadi, et al., 2012). Two studies with inconsistent findings suggest that variations in functional status or gains across race/ethnic groups may be attributable to the use of different measurement approaches (Ellis et al., 2016; Ellis et al., 2014).

References:

- Berges, I-M, et al. (2012). "Recovery of Functional Status After Stroke in a Tri-Ethnic Population." PM R. 4(4): 290-295.
- Cary, M. P., et al. (2016). "Inpatient Rehabilitation Outcomes in a National Sample of Medicare Beneficiaries With Hip Fracture." Journal of Applied Gerontology 35(1): 62-83.
- Ellis, C., et al. (2014). "Racial/Ethnic Differences in Poststroke Rehabilitation Outcomes." Stroke Research and Treatment.
- Ellis, C., et al. (2016). "Racial Differences in Poststroke Rehabilitation Utilization and Functional Outcomes." Arch Phys Med Rehabil. 96: 84-90.
- Fyffe, D.C., et al. (2014). "Racial and Ethnic Disparities in Functioning at Discharge and Follow-Up Among Patients With Motor Complete Spinal Cord Injury." Am J Phys Med Rehabil 95: 2140-51.
- Howrey, B.T., et al. (2017). "Trajectories of Functional Change after Inpatient Rehabilitation for Traumatic Brain Injury." Arch Phys Med Rehabil 98(8): 1606-1613.
- Rabadi, M. H., et al. (2012). "Does race influence functional outcomes in patients with acute stroke undergoing inpatient rehabilitation?" Am J Phys Med Rehabil 91(5): 375-382; quiz 383-376.

Summary of each study:

- Berges, I-M., et al. (2012). "Recovery of Functional Status After Stroke in a Tri-Ethnic Population." PM R. 4(4): 290-295.
- Examined differences in functional status for White, Black and Hispanic stroke patients from time of admission to an IRF up to 12 months after discharge.
  - Study design: longitudinal study of stroke patient data (n = 990) from the Stroke Recovery in Underserved Populations database (2005-2006). Patients were age 55 or older and were interviewed at 4 points: admission to IRF, discharge, 3 months after discharge, 12 months after discharge.
  - Race and ethnicity were amongst the significant predictors of total FIM scores.
  - Differences between the groups differed across the various time periods: during rehabilitation, both Black and Hispanic function admission scores were slightly higher than those of their White counterparts and functional gains were similar; however, at the 3-month follow-up, scores for Black and Hispanic patients were lower than those of White patients, and at the 12-month follow-up, only Hispanic patients continued to have significantly lower scores than White patients.
  - Study findings suggest that variations in recovery across race/ethnic groups may have more to do with post-rehabilitation factors.
- Cary, M. P., et al. (2016). "Inpatient Rehabilitation Outcomes in a National Sample of Medicare Beneficiaries With Hip Fracture." Journal of Applied Gerontology 35(1): 62-83.
- Black, Hispanic, and Other racial/ethnic patients had lower FIM scores at discharge compared to White patients; FIM discharge

scores of Asian patients were similar to those of White patients.

- It is important to note that the regression model that included only “predisposing variables” (age, sex, and race) explained only 9% of the variance.

Ellis, C., et al. (2016). "Racial Differences in Poststroke Rehabilitation Utilization and Functional Outcomes." *Arch Phys Med Rehabil* 96: 84-90.

- Examined racial differences in post-stroke rehabilitation utilization and functional outcomes.
- Study design: A follow-up study of stroke survivors 45 years or older seen for stroke care from October 1, 2008, to September 30, 2009 at a stroke center in South Carolina.
- Black patients had lower levels of overall functional independence than did White patients (8.0 vs 10.5;  $P < .05$ ).
- “Three key findings emerged from the study: (1) blacks experienced higher levels of impairment at stroke onset than did whites, (2) blacks reported lower levels of functional independence at 1 year poststroke onset, and (3) blacks reported lower levels of functional independence and driving independence despite a lack of racial differences in rehabilitation utilization.”
- Note that part of inconsistency in findings regarding racial disparities in functional outcomes can be attributed to use of different measurement approaches and variation of settings.

Ellis, C., et al. (2014). "Racial/Ethnic Differences in Poststroke Rehabilitation Outcomes." *Stroke Research and Treatment*.

- Examined racial and ethnic differences in poststroke rehabilitation outcomes.
- Study design: Literature review of articles on stroke, rehabilitation, and racial-ethnic patterns of disease over a 10-year period (2003–2012) and focused on rehabilitation outcomes and the race or ethnicity of at least two groups.
- Majority of the studies found that racial/ethnic minorities were less likely to achieve equivalent functional improvement following rehabilitation. Blacks were more likely to experience lower FIM gain or change scores (range: 1–60%) and more likely to have lower efficiency scores (range: 5–16%) than Whites.
- Here to, note of variability of study approaches and resulting difficulty of drawing conclusions from the findings.

Fyffe, D.C., et al. (2014). "Racial and Ethnic Disparities in Functioning at Discharge and Follow-Up Among Patients With Motor Complete Spinal Cord Injury." *Am J Phys Med Rehabil* 95: 2140-51.

- Examined racial and ethnic differences in self-care and mobility outcomes for persons with a motor complete, traumatic spinal cord injury (SCI) at discharge and 1-year follow-up.
- Study design: retrospective cohort study using patient data from the Spinal Cord Injury Model Systems (SCIMS) database for patients enrolled in the SCIMS between 2000-2011 (n=1766).
- At discharge, non-Hispanic black participants with tetraplegia and paraplegia had significantly poorer gains in FIM self-care and mobility scores relative to non-Hispanic white and Hispanic participants. [Discussion notes that the difference is small.]
- At 1-year follow-up, similar FIM self-care and mobility change scores were found across racial and ethnic groups within each neurologic category.

Howrey, B.T., et al. (2017). "Trajectories of Functional Change after Inpatient Rehabilitation for Traumatic Brain Injury." *Arch Phys Med Rehabil* 98(8): 1606-1613.

- Examined trajectories of functional recovery after rehabilitation for TBI.
- Study design: prospective study of IRF TBI patients from 2002 to 2010 who also had post-discharge measurements of functional independence (n = 16,583) using UDS data.
- Being of a racial/ethnic minority was associated with membership in the low motor trajectory

Rabadi, M. H., et al. (2012). "Does race influence functional outcomes in patients with acute stroke undergoing inpatient rehabilitation?" *Am J Phys Med Rehabil* 91(5): 375-382; quiz 383-376.

- Examined relationship between race and functional outcomes on stroke patients receiving facility-based rehabilitation.
- Study design: 2-year prospective study of patients admitted to an acute stroke rehabilitation unit within 30 days after an acute stroke (n=670).
- The primary and secondary functional rehabilitation outcomes were similar for all four groups after similar intensity of therapy (3.5 hours/day).
- Found no significant association between race and functional outcomes.

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Behavioral Health : Depression, Musculoskeletal, Musculoskeletal : Falls and Traumatic Injury, Neurology, Neurology : Brain Injury, Neurology : Stroke/Transient Ischemic Attack (TIA)

**De.6. Non-Condition Specific**(check all the areas that apply):

Health and Functional Status : Change

**De.7. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

Populations at Risk : Individuals with multiple chronic conditions

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/Functional-Measures-.html>

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [Change\\_in\\_Mobility\\_NQF\\_2634\\_Risk\\_Adj\\_Model\\_01-07-2019.xlsx](#)

**S.2c.** Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment Attachment: [Final\\_IRF-PAI\\_Version\\_3.0\\_-\\_Effective\\_October\\_1\\_2019\\_-FY2020--636800381589479598.pdf](#)

**S.2d.** Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Clinician

**S.3.1. For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

**S.3.2. For maintenance of endorsement**, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

We have made several changes to the specifications, including updates to the exclusion criteria, risk adjustors, and measure calculation algorithm since the most recent annual update:

(1) Exclusion criteria: We are removing “discharged to another IRF” as an exclusion criterion from the incomplete stay definition. Rationale: The removal of this criterion means that the definition of an “incomplete stay” for this measure is aligned with other post-acute care function quality measures. When a patient is discharged to another IRF, the discharge would not typically be urgent, so gathering discharge functional assessment data for these patients is feasible.

(2) Risk-Adjustors: We have updated the covariates included in the risk adjustment model by removing several comorbidities and adding low body mass index (BMI) and several new comorbidities. Rationale: Updates to the risk adjustment model were made based on an updated literature review and analyses of IRF data conducted since 2016. When examining the risk adjustment model using the 12-month national IRF-PAI data, we found that some comorbidities were no longer significant predictors of change in mobility or the association between the comorbidity and functional outcomes was no longer consistent with the literature or clinical expectations. Based on the literature review findings, we tested additional candidate risk adjusters. We have added low BMI and several comorbidities (hierarchical condition category groups) to the regression model based on the magnitude of the coefficients that suggested the comorbidity was an important factor associated with functional outcomes among IRF patients. Adding these risk adjusters to the model will not add provider burden, because the data are already collected via the IRF-PAI.

(3) Measure Calculation: The risk-adjustment procedure for this measure involves comparing patients' observed change in mobility scores with their expected change in mobility scores. We are revising this part of the measure calculation. The prior approach used the ratio of the observed to expected values and the ratio was multiplied by the national mean. The new approach uses the difference between the observed and expected values, and the difference value is added to the national mean. Rationale: We have developed an application of this measure for skilled nursing facilities (SNFs) and use the difference approach for the SNF measure given the potential for more variation in the observed and expected values due to a more heterogeneous SNF population. We are now updating this IRF functional outcome measure to use the difference approach so the IRF and SNF measure calculations are aligned. Our testing of the two approaches (ratio and difference approaches) with national IRF data showed no meaningful difference in the facility mean and median quality measure scores.

(4) Inclusion of wheelchair mobility for patients who are unable to walk. Rationale: Including wheelchair mobility activities to the mobility quality measure captures improvement in wheelchair mobility skills of patients who are unable to walk. We received feedback about this topic supporting the inclusion of wheelchair mobility activities for this measure as some IRFs have high volumes of non-ambulatory patients.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

*IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

The measure does not have a simple form for the numerator and denominator. This measure estimates the risk-adjusted change in mobility score between admission and discharge among Inpatient Rehabilitation Facility (IRF) Medicare Part A and Medicare Advantage patients age 21 and older. The change in mobility score is calculated as the difference between the discharge mobility score and the admission mobility score.

**S.5. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

*IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

Seventeen mobility activities are each scored based on a patient's ability to complete the activity. The scores for the activities are summed to obtain a mobility score at the time of admission and at the time of discharge. The change in mobility is the difference between the discharge mobility score and the admission mobility score.

The mobility items are:

GG0170A. Roll left and right

GG0170B. Sit to lying

GG0170C. Lying to sitting on side of bed

GG0170D. Sit to stand

GG0170E. Chair/bed-to-chair transfer

GG0170F. Toilet transfer

GG0170G. Car transfer

GG0170I. Walk 10 feet

GG0170J. Walk 50 feet with two turns

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GG0170K. Walk 150 feet  
GG0170L. Walking 10 feet on uneven surfaces  
GG1070M. 1 step (curb)  
GG0170N. 4 steps  
GG0170O. 12 steps  
GG0170P. Picking up object  
GG0170R. Wheel 50 feet with two turns (for patients who do not walk at admission and discharge)  
GG0170S. Wheel 150 feet (for patients who do not walk at admission and discharge)

Each patient's ability to complete each mobility activity (item) is rated by a clinician using the following 6-level rating scale:

level 06 - Independent  
level 05 - Setup or clean up assistance  
level 04 - Supervision or touching assistance  
level 03 - Partial/moderate assistance  
level 02 - Substantial/maximal assistance  
level 01 - Dependent

If the patient did not attempt the activity, the reason that activity did not occur is reported as:

07 = Patient refused  
09 = Not applicable  
10 = Not attempted due to environmental limitations  
88 = Not attempted due to medical condition or safety concerns.

The performance period is 12 months for reporting on CMS's IRF Compare website.

**S.6. Denominator Statement** *(Brief, narrative description of the target population being measured)*

The denominator is the number of Inpatient Rehabilitation Facility Medicare Part A and Medicare Advantage patient stays, except those that meet the exclusion criteria.

**S.7. Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

*IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

The denominator is the number of Inpatient Rehabilitation Facility Medicare Part A and Medicare Advantage patient stays, except those that meet the exclusion criteria.

**S.8. Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*

This quality measure has six patient-level exclusion criteria:

1) Patients with incomplete stays.

Rationale: When a patient has an incomplete stay, for example, the patients leave urgently due to a medical emergency, it can be challenging to gather accurate discharge functional status data. Patients with incomplete stays include patients who are unexpectedly discharged to an acute care setting (Short-stay Acute Hospital, Critical Access Hospital, Inpatient Psychiatric Facility, or Long-term Care Hospital); patients who die or leave an Inpatient Rehabilitation Facility (IRF) against medical advice; and patients with a length of stay less than 3 days.

2) Patients who are independent with all mobility activities at the time of admission.

Rationale: Patients who are independent with all the mobility items (with the exception of the wheelchair items GG0170R and GG0170S) at the time of admission are assigned the highest score on all the mobility items, and thus, would not be able to show functional improvement on this same set of items at discharge.

3) Patients with the following medical conditions on admission: coma, persistent vegetative state; complete quadriplegia; locked-in



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syndrome or severe anoxic brain damage, cerebral edema or compression of brain.

Rationale: These patients are excluded because they may have limited or less predictable mobility improvement with the selected mobility items.

4) Patients younger than age 21.

Rationale: There is only limited evidence published about functional outcomes for individuals with Medicare who are younger than 21.

5) Patients discharged to hospice.

Rationale: Patient goals may change during the IRF stay, and functional improvement may no longer be a goal for a patient discharged to hospice.

6) Patients who are not Medicare Part A and Medicare Advantage beneficiaries.

Rationale: IRF-PAI data for patients not covered by the Medicare program are not submitted to the Centers for Medicare and Medicaid Services.

Facility-level quality measure exclusion: For IRFs with fewer than 20 patient stays, data for this quality measure are not publicly reported.

**S.9. Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

The following items are used to identify which patients are excluded from the quality measure calculations.

These data elements are included on the current version of the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI), which is available at: <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/InpatientRehabFacPPS/IRFPAI.html>

It can be challenging to gather accurate discharge functional status data for patients who experience incomplete stays. Patients with incomplete stays include patients who are unexpectedly discharged to an acute care setting (Short-stay Acute Hospital, Critical Access Hospital, Inpatient Psychiatric Facility, or Long-term Care Hospital); patients discharged to a hospice; patients who die or leave an Inpatient Rehabilitation Facility (IRF) against medical advice; and patients with a length of stay less than 3 days.

Items used to identify these patient records:

1) Patients with incomplete stays.

Patients with a length of stay less than 3 days: We calculate length of stay using the following items on the IRF-PAI.

Length of stay is calculated as the Discharge Date minus the Admission Date (Discharge Date - Admission Date). Patient records with a length of stay of less than 3 days are excluded.

Item 12. Admission Date.

Item 40. Discharge Date.

Item 41. Patient discharged against medical advice. This item is used to identify patients discharged against medical advice.

Patient records with a response of "Yes = 1" are excluded.

Item 44C. Was the patient discharged alive? This item is used to identify patients who died during the IRF stay.

Patient records with a response of "No = 0" are excluded.

44D. Patient's discharge destination/living setting.

This item is used to identify an incomplete stay. Specifically, the following responses will be used to identify patients with incomplete stays:

Short-term General Hospital = 02

Long-Term Care Hospital = 63

Inpatient Psychiatric Facility = 65

Critical Access Hospital = 66.

2) Patients who are independent with all mobility activities at the time of admission.

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Patients who are independent with all the mobility items at the time of admission are assigned the highest score on all the mobility items, thus, would not be able to show functional improvement (i.e., a higher score) on this same set of items at discharge. The following items and scores are used to identify and exclude patient records:

Mobility items

GG0170A. Roll left and right = 06, and  
GG0170B. Sit to lying = 06, and  
GG0170C. Lying to sitting on side of bed = 06, and  
GG0170D. Sit to stand = 06, and  
GG0170E. Chair/bed-to-chair transfer = 06, and  
GG0170F. Toilet transfer = 06, and  
GG0170G. Car transfer = 06, and  
GG0170I. Walk 10 feet = 06, and  
GG0170J. Walk 50 feet with two turns = 06, and  
GG0170K. Walk 150 feet = 06, and  
GG0170L. Walking 10 feet on uneven surfaces = 06, and  
GG0170M. 1 step (curb) = 06, and  
GG0170N. 4 steps = 06, and  
GG0170O. 12 steps = 06, and  
GG0170P. Picking up object = 06.

3) Patients with the following medical conditions on admission: coma; persistent vegetative state; complete quadriplegia; locked-in syndrome; and severe anoxic brain damage, cerebral edema or compression of the brain.

The following items will be used to identify patients with these conditions:

21A. Impairment Group.

0004.1221 - Spinal Cord Dysfunction, Non-Traumatic: Quadriplegia Complete, C1-C4  
0004.1222 - Spinal Cord Dysfunction, Non-Traumatic: Quadriplegia Complete, C5-C8  
0004.2221 - Spinal Cord Dysfunction, Traumatic: Quadriplegia Complete, C1-C4  
0004.2222 - Spinal Cord Dysfunction, Traumatic: Quadriplegia Complete, C5-C8

22. Etiologic Diagnosis.

This item is used to determine a patient's etiologic problem that led to the condition for which the patient is receiving rehabilitation. The following Hierarchical Condition Categories (HCCs) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes will be used to identify and exclude records of patients with these conditions:

HCC 80. Coma, Brain Compression/Anoxic Damage  
ICD-10-CM. G82.51 Quadriplegia, C1-C4 complete  
ICD-10-CM. G82.53 Quadriplegia, C5-C7 complete  
ICD-10-CM. S14.11xx Quadriplegia, Complete lesion at Cx(1-8) level of cervical spinal cord, initial encounter or subsequent encounter, or sequela  
ICD-10-CM. G83.5. Locked-in state

24. Comorbid Conditions.

This item is used to exclude selected comorbidities. The following Hierarchical Condition Categories (HCCs) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes will be used to exclude records of patients with these conditions:

HCC 80. Coma, Brain Compression/Anoxic Damage  
ICD-10-CM. G82.51 Quadriplegia, C1-C4 complete  
ICD-10-CM. G82.53 Quadriplegia, C5-C7 complete  
ICD-10-CM. S14.11xx Quadriplegia, Complete lesion at Cx(1-8) level of cervical spinal cord, initial encounter or subsequent encounter, or sequela  
ICD-10-CM. G83.5. Locked-in state

4) Patients younger than age 21. These items are used to calculate age, and patients who are younger than 21 years of age at the time of admission are excluded.

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6. Birth Date

12. Admission Date

Age is calculated as the Admission Date minus the Birth Date (Admission Date - Birth Date). Patients younger than 21 are excluded.

5) Patients discharged to hospice.

44D. Patient's discharge destination/living setting.

This item is used to identify patients discharged to hospice. The following responses are used:

Hospice (home) = 50

Hospice (institutional facility) = 51

6) Patients who are not Medicare Part A and Medicare Advantage beneficiaries

20A. Primary Source = 99 - Not Listed AND

20B. Secondary Source = 99 - Not Listed

**S.10. Stratification Information** (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)

Not applicable. This measure does not use stratification for risk-adjustment.

**S.11. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)

Statistical risk model

If other:

**S.12. Type of score:**

Continuous variable, e.g. average

If other:

**S.13. Interpretation of Score** (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

**S.14. Calculation Algorithm/Measure Logic** (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

We provide the detailed calculation algorithm in an attachment entitled "IRF Detailed Function QM Specifications 2634 01-07-2019" included in the Appendix.

The detailed calculation algorithm is provided to the public in the document entitled IRF Measure Calculations and Reporting User's Manual. The current version of this document is available at: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/IRF-Quality-Reporting-Program-Measures-Information-.html>

The following are key steps used to calculate the measure:

- 1) Sum the scores of the admission mobility items to create an admission mobility score for each patient, after 'activity not attempted' codes (07. Patient refused, 09. Not applicable, 10. Not attempted due to environmental limitations, and 88. Not attempted due to medical condition or safety concerns), skip codes ('^') and missing data ('-') are recoded, and for patients who do not walk on admission and discharge, walking items have been recoded to use wheelchair mobility item codes. (range: 15 to 90).
- 2) Sum the scores of the discharge mobility items to create a discharge mobility score for each patient, after 'activity not attempted' values (07. Patient refused, 09. Not applicable, 10. Not attempted due to environmental limitations, and 88. Not attempted due to medical condition or safety concerns), skip codes ('^') and missing data ('-') are recoded. As described in step 1, for patients who do not walk on admission and discharge, use wheelchair mobility item codes instead of walking codes. (range: 15 to 90).
- 3) Identify the records of patients who meet the exclusion criteria and exclude them from analyses.
- 4) Calculate the difference between the admission mobility score (from step 1) and the discharge mobility score (from step 2) for each patient to create a change in mobility score for each patient.
- 5) Calculate an expected change in mobility score for each patient using regression coefficients from national data and each

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patient's admission characteristics (risk adjusters).

6) Calculate an average observed change in mobility score for each IRF (using the patient data calculated in step 4). This is the facility-level observed change in mobility score.

7) Calculate an average expected change in mobility score for each IRF (using the patient data from step 5). This is the facility-level expected change in mobility score.

8) Subtract the facility-level expected change score from the facility-level observed change score to determine the difference in scores (difference value). A difference value that is 0 indicates the observed and expected scores are equal. An observed minus expected difference value that is higher than 0 (positive) indicates that the observed change score is greater (better) than the expected change score. An observed minus expected difference value that is less than 0 (negative) indicates that the observed change score is lower (worse) than the expected change score.

9) Add the national average change in mobility score to each IRF's difference value (from step 8). This is the risk-adjusted mean change in mobility score.

Each patient's ability to complete each mobility activity (item) is rated by a clinician using the following 6-level rating scale:

level 06 - Independent

level 05 - Setup or clean up assistance

level 04 - Supervision or touching assistance

level 03 - Partial/moderate assistance

level 02 - Substantial/maximal assistance

level 01 - Dependent

The mobility items are:

GG0170A. Roll left and right

GG0170B. Sit to lying

GG0170C. Lying to sitting on side of bed

GG0170D. Sit to stand

GG0170E. Chair/bed-to-chair transfer

GG0170F. Toilet transfer

GG0170G. Car transfer

GG0170I. Walk 10 feet

GG0170J. Walk 50 feet with two turns

GG0170K. Walk 150 feet

GG0170L. Walking 10 feet on uneven surfaces

GG0170M. 1 step (curb)

GG0170N. 4 steps

GG0170O. 12 steps

GG0170P. Picking up object

GG0170R. Wheel 50 feet with two turns (for patients who do not walk at admission and discharge)

GG0170S. Wheel 150 feet (for patients who do not walk at admission and discharge)

**S.15. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

Not applicable. This measure uses IRF-PAI data for all Medicare patients treated by IRFs for the performance period. There is no sampling. This is an instrument-based measure that relies on clinician-reported data, therefore proxy responses are not relevant.

**S.16. Survey/Patient-reported data** (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

Not applicable. This measure uses clinician-reported data.

**S.17. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Instrument-Based Data

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**S.18. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI).

**S.19. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

**S.20. Level of Analysis** (Check *ONLY* the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility

**S.21. Care Setting** (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

Post-Acute Care

If other:

**S.22. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

Not applicable. This is not a composite measure.

**2. Validity – See attached Measure Testing Submission Form**

NQF\_IRF\_Mobility\_Change\_Testing\_Final-636794380721914131.docx,2634\_nqf\_testing\_4-22-2019.docx

**2.1 For maintenance of endorsement**

*Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.*

Yes

**2.2 For maintenance of endorsement**

*Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.*

Yes

**2.3 For maintenance of endorsement**

*Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.*

Yes - Updated information is included

**3. Feasibility**

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

**3a. Byproduct of Care Processes**

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

**3a.1. Data Elements Generated as Byproduct of Care Processes.**

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis,

depression score), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

If other:

### 3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields** (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for **maintenance of endorsement**.

ALL data elements are in defined fields in electronic clinical data (e.g., clinical registry, nursing home MDS, home health OASIS)

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

Not applicable. This quality measure's data elements are collected solely from electronic sources.

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**

Attachment:

### 3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Required for maintenance of endorsement.** Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

**IF instrument-based**, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

The NQF feasibility criterion requires measure developers to: 1) demonstrate that the data collection strategy can be implemented and 2) describe any difficulties regarding data collection.

Data Collection:

Data for this quality measure are currently collected and submitted to the Centers for Medicare and Medicaid Services using the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI). These data have been collected by all IRFs in the US since October 1, 2016 as part of the IRF Quality Reporting Program (QRP). In addition, beginning in October 2019, data from Section GG will also be required by the Centers for Medicare and Medicaid Services as part of the IRF Prospective Payment System.

The measure data are "generated" by qualified clinicians as they observe patients completing daily activities, such as transferring and walking at the time of admission and discharge. As shown in the testing form, missing data is minimal (less than 0.1% across all data elements). The IRF-PAI data are submitted to CMS via the QIES ASAP system, which has been in place since 2002. This data submission system is secure and encrypted with administrative, physical and technical safeguards in place.

Preventing and Addressing Potential Data Collection Challenges:

The Centers for Medicare and Medicaid Services finalized the implementation of this quality measure in August 2014 in the FY 2015 IRF PPS Final Rule, more than 1 year before implementation of data collection. This advance notice allowed providers, vendors and CMS to prepare for implementation. The Centers for Medicare and Medicaid has developed software that is free for IRFs to use to submit IRF-PAI data. Also, given the Centers for Medicare and Medicaid's many years of experience with data submission (the IRF-PAI data have been submitted to the Centers for Medicare and Medicaid since 2002) implementation occurred with minimal difficulty.

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To assist providers with the collection of accurate data, the Centers for Medicare and Medicaid Services has offered multiple in-person and on-line training opportunities since May 2015. In addition, a help desk is available to answer provider questions regarding data collection, and "Q & A" documents are posted on the CMS website for provider use. Training information is available on the following website: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/IRF-Quality-Reporting-Training.html>

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).**

There no costs associated with fees, licensing or other requirements associated with the measure data elements or risk model.

#### 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

##### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

##### 4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
	<p>Public Reporting</p> <p>Measure data from calendar year 2019 (currently being collected) will be publicly reported on IRF Compare in 2020 for the IRF Quality Reporting Program <a href="https://www.medicare.gov/inpatientrehabilitationfacilitycompare/">https://www.medicare.gov/inpatientrehabilitationfacilitycompare/</a></p> <p>Quality Improvement (external benchmarking to organizations) IRF QRP: On confidential feedback reports and IRF Compare, providers can view national-level performance measure scores for benchmarking quality efforts. IRFs can also review and compare scores for local providers through IRF Compare's web features. <a href="https://qtso.cms.gov/">https://qtso.cms.gov/</a></p> <p>Quality Improvement (Internal to the specific organization) IRF QRP: IRFs receive confidential feedback reports through the CMS designated data submission system, which includes the Review and Correct, Quality Measure, and Provider Preview Reports to review their data internally. <a href="https://qtso.cms.gov/">https://qtso.cms.gov/</a></p>

##### 4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

Name of Program and Sponsor and Purpose:

This quality measure has been implemented in the Center for Medicare and Medicaid's (CMS) Inpatient Rehabilitation Facility Quality Reported Program (IRF QRP) and serves two purposes:



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- 1) to share quality data with each IRF that may be used to support quality improvement efforts; and
- 2) to share quality data about each IRF, which may assist consumers and family members in making decisions about where to receive IRF care.

As part of the IRF QRP, IRFs have been able to view data for this quality measure in their confidential feedback reports, which may be used for quality improvement, since April 2017.

Quality measure data collected in calendar year 2019 will be publicly reported in 2020 on CMS's IRF Compare website at: <https://www.medicare.gov/inpatientrehabilitationfacilitycompare/>. Since 2016, CMS has publicly reported IRF QRP quality measure data on the IRF Compare website. This website reports quality data for each IRF, and these data are also publicly available for download at: <https://data.medicare.gov/data/inpatient-rehabilitation-facility-compare>.

This measure was implemented pursuant to two public laws that addressed the IRF QRP and reporting of data submitted by providers:

- 1) The Patient Protection and Affordable Care Act ("ACA") of 2010 (Public Law No: 111-148)
  - Section 3004(b) of the ACA amended section 1886(j)(7) of the Social Security Act (SSA) requiring the Secretary to establish quality reporting requirements for IRF providers. Quality reporting applies to all IRF providers receiving payment under the IRF Prospective Payment System (PPS).
  - The ACA mandates IRFs to submit data or be subject to a two-percent reduction in their annual payment update (APU) determination.
- 2) The Improving Medicare Post-Acute Care Transformation Act ("IMPACT Act") of 2014 (Public Law No: 113-185):
  - The IMPACT Act requires IRFs to submit standardized patient assessment data on quality, resource use, and other measures.
  - The data submitted from providers are used to calculate measures that report healthcare processes and patient outcomes among IRF providers under the QRP.
  - Requires the establishment of procedures for making provider performance information available to the public.

CMS finalized in the FY 2019 IRF PPS final rule (83 FR 38562) that they plan to publicly report data for this performance measure on IRF Compare in the fall of 2020. The first time the data will be publicly displayed will be for patients discharged on January 1, 2019 through December 31, 2019.

CMS provides an opportunity for IRFs to review their own data before it is publicly reported through confidential feedback reports available in the CMS designated data submission system. Several reports are available that provide different snapshots of the measure data (described in more detail below in 4a2.1.1). As of April 2017, providers could view the observed change in mobility performance measure in their confidential Review and Correct reports. The risk-adjusted change in mobility performance measure became available in the Quality Measure reports October 2018.

#### Geographic Area, Accountable Entities and Patients Included:

The IRF QRP measures are calculated for 100% of IRF providers in the US (1,129 IRFs in 2017). This includes IRFs in every US state, the District of Columbia, and the US Territory of Puerto Rico. IRFs submitted a total of 493,209 IRF-PAI records for Medicare Part A and Medicare Advantage patients discharged in 2017.

All providers receive their confidential feedback reports, which may be used for internal quality improvement efforts.

To ensure reliability of the performance measure scores, IRFs with less than 20 patients (12 IRFs in 2017) during a reporting period would not have their data displayed publicly. Once an IRF has more than 20 patients during the reporting period, their data would display on IRF Compare.

#### Level of Measurement and Setting:

As mentioned, this quality measure has been implemented in the IRF setting as part of the IRF QRP. The measure score is reported at the facility-level.

**4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

Not applicable because public reporting is currently underway for this measure.

**4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

Not applicable because public reporting is currently underway for this measure.

**4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**

**How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.**

For Providers:

Dissemination of performance results and assistance with interpretations of the performance data for IRFs have been addressed in four specific ways: confidential feedback reports, provider training seminars, manuals and materials, responses to questions submitted to the IRF QRP Help Desk: [IRF.Questions@cms.hhs.gov](mailto:IRF.Questions@cms.hhs.gov), and IRF Public Reporting Help Desk: [IRFPRQuestions@cms.hhs.gov](mailto:IRFPRQuestions@cms.hhs.gov), and on IRF Compare.

1) Confidential Provider Feedback Reports:

All IRFs who submit IRF-PAI data to CMS receive three types of confidential reports with performance measure data and scores based on the data submitted. These reports support internal quality improvement efforts and include the Review and Correct, Quality Measure, and Provider Preview Reports. Details about each of these reports is provided below in 4a.2.1.2.

2) IRF QRP Provider Training Seminars:

CMS conducted several in-person IRF QRP provider training seminars to share information about coding the data elements used to calculate the performance measure, to share details about the measure specifications and to explain how the measure is calculated. Training sessions that focused on the confidential feedback reports were also conducted to support providers in reviewing and interpreting the data they receive in these reports. During training sessions, providers were encouraged to ask questions about coding the data elements and the change in mobility performance measure to ensure an accurate understanding of the measure. Training materials are posted on the CMS website after each training seminar is completed. To review provider training materials, see the following webpage:

<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/IRF-Quality-Reporting-Training.html>

The IRF QRP Measure Calculations and Reporting User's manual, which presents the measure specifications and how the measures are calculated for each measure in the IRF QRP, is posted on the CMS website. Therefore, providers have detailed measure specifications available to them. To review the current IRF QRP Measure Calculations and Reporting User's manual, see the following webpage:

<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/Downloads/IRF-Measure-Calculations-and-Reporting-Users-Manual-V30.pdf>

3) IRF QRP and IRF Public Reporting Help Desk:

CMS also maintains a provider help desk for the IRF QRP where IRFs can submit questions about the data elements, the measure, including questions about performance data, interpretation of results, or instructions on coding ([IRF.Questions@cms.hhs.gov](mailto:IRF.Questions@cms.hhs.gov)). A help desk for questions about the data available on IRF Compare (see below) is also available ([IRFPRQuestions@cms.hhs.gov](mailto:IRFPRQuestions@cms.hhs.gov)). A response is provided to address each question that is submitted.

4) IRF Compare Website:

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The performance measure data are publicly displayed on the IRF Compare website and plain language is used to assist users in interpreting the data that are presented. The quality of care that IRF providers deliver to patients can vary from facility to facility, and publicly displaying performance data on IRF Compare supplies information for providers to use for improving the quality of care they provide to patients.

For Patients, Families, Carers and Other Stakeholders:

IRF patients, family members, carers, and other stakeholders (researchers, journalists, policymakers) can view an IRF's measure performance information on the publicly available IRF Compare website. The IRF Compare website is designed to help patients and caregivers make informed decisions about their health care and to compare inpatient rehabilitation facilities based on important indicators of quality. [Insert details about the consumer-friendly language/health literacy, testing, reading-level, etc. Share the consumer-friendly name here.] IRF Compare is available in both English and Spanish.

Furthermore, the public can download the IRF Compare datasets. The files contain general information about providers, provider level data on quality measures, and national data shown on the site. A data dictionary provides detailed information on the measures and file layouts.

Public access to the performance data on the IRF Compare website has been widespread and increasing over time. In Quarter 4 of 2017, there were over 14,000 sessions and 40% of those were returning visitors. Subsequently, the number of sessions increased by 27.6% a year later to over 18,000 sessions in Quarter 4 of 2018 in which 42% of those were returning visitors.

**4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

All IRFs receive three types of confidential reports with performance measure data and scores based on the data submitted:

**1) Quality Measure Reports:**

The intent of this report is to enable IRFs to track their own quality measure data at the facility- and patient-level. Data for this report is refreshed monthly and displays performance measure information at the facility- and patient-stay level for review. The facility-level report displays the measure denominator, average observed scores, average risk-adjusted score, and the national average for benchmarking the facility's performance. The patient-level report displays which patients are excluded from the measure as well as each patient's observed change in mobility score.

**2) Review and Correct Reports:**

The intent of this report is for IRFs to view their data prior to the quarterly data submission deadline to ensure accuracy of the data submitted to CMS. Data for this report is refreshed weekly and displays data correction deadlines and whether the data correction period is open or closed. Only the last four quarters of data are available in this report.

**3) Provider Preview Reports:**

The intent of this report is for IRFs to preview what performance data will publicly displayed for their IRF. The report displays facility-level performance measure data and shows risk-adjusted values and national rates as they will appear publicly on IRF Compare. Data displayed in this report cannot be modified by the provider.

**4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**

**Describe how feedback was obtained.**

In addition to the processes and information described above in 4a2.1.1 and 4a2.1.2, CMS solicited public comments about the change in mobility performance measure via a 60-day public comment period during the fiscal year (FY) 2016 rulemaking process. CMS also solicited public comments during the FY 2019 rulemaking process on the proposal to publicly report this measure on IRF Compare. See below for links to the final rules which present all public comments received and responses:

FY 2016: <https://www.federalregister.gov/articles/2015/08/06/2015-18973/medicare-program-inpatient-rehabilitation-facility-prospective-payment-system-for-federal-fiscal>

FY 2019: <https://www.federalregister.gov/documents/2018/08/06/2018-16517/medicare-program-inpatient-rehabilitation-facility-prospective-payment-system-for-federal-fiscal>

**4a2.2.2. Summarize the feedback obtained from those being measured.**

We received support for both implementation and public reporting of the change in mobility performance measure for the IRF QRP. Comments were received from various stakeholders, including providers, provider associations, researchers, government agencies, information system vendors, advocacy groups, and individuals/consumers.

In the FY 2016 rule proposal, most commenters supported the change in mobility performance measure being added to the IRF QRP and stated that this measure contributes to meaningful differences in IRF patients' outcomes. Several commenters supported the risk adjustment model, specifically highlighting the inclusion of prior mobility device use and prior functioning as important risk adjusters for functional outcome measures. Commenters encouraged CMS to continue to examine data for this quality measure and to improve the risk adjustment methodology over time. Several commenters requested that CMS provide additional reliability and validity testing and recommended training programs to ensure data accuracy. Another commenter encouraged CMS to add wheelchair mobility items in the mobility quality measures to reflect that some patients use a wheelchair as a primary method of mobility.

In the FY 2019 rule proposal, most commenters supported publicly reporting this measure. Some provided recommendations on how to publicly display the measure, including a consumer-friendly name and adequate consumer testing to develop appropriate language for explaining the measure to the public. Concerns were noted about publicly reporting the measure before providers have enough time to review their data, track their performance and ensure that their provider-level performance is accurately represented on IRF Compare.

Additional feedback by providers is also regularly received through the active IRF QRP help desk. As noted above, IRF staff submit questions about the measure, including questions about performance data, interpretation of results, or instructions on coding to the IRF QRP help desk. Individuals viewing the measure data on IRF Compare can submit questions or comments to the IRF Public Reporting help desk. Through these avenues, CMS receives ongoing, real-time feedback which further supports measure improvement and maintenance.

As part of CMS's ongoing efforts to engage stakeholders in the measure development, improvement and refinement process, all comments and questions are taken into consideration. Several points of feedback were tested and are planned for future measure implementation (see 4a2.3 below for examples).

**4a2.2.3. Summarize the feedback obtained from other users**

In March 2017, the measure developer convened stakeholders and experts who contributed direction and thoughtful input for IRF QRP measure development and maintenance. This technical expert panel (TEP) was asked to discuss and make future recommendation on the change in mobility performance measure. Feedback included general support for the outcome measure and suggestions for new risk adjusters. The TEP noted that plain language descriptions of the measures would be important to assist consumers' ability to interpret the function change scores when posted on IRF Compare. Several TEP members also noted that the function measures have limited ability to capture mobility improvement for patients using a wheelchair and encouraged inclusion of wheelchair items in the performance measure.

The IRF QRP TEP Summary report is available at: [https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/Downloads/2017-IRF-QRP-TEP-Summary-Report-\\_508C.pdf](https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting/Downloads/2017-IRF-QRP-TEP-Summary-Report-_508C.pdf)

Additional feedback by consumers and researchers is also received through the IRF Public Reporting help desk. Individuals viewing the IRF Compare website can submit questions or comments and, in this way, CMS provides real-time support to patients, families and carers and other stakeholders seeking additional information or clarification on measures. Researchers and academics needing assistance in understanding and using the downloadable data also submit questions. These questions and comments are used to support CMS's goal of continuously improving the website.

**4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

Part of our measure maintenance process includes incorporating stakeholder feedback as we continue examination and refinement of performance measures. CMS and RTI International reviewed and took into consideration all public comments received in both the FY 2016 and FY 2019 final rules as well as feedback from the March 2017 technical expert panel and comments and questions received via the help desks.

Updates were made to the change in mobility performance measure from the initial NQF endorsement, and these updates are partly based on stakeholder feedback. For example, commenters encouraged CMS to continue reviewing the data and improving the risk adjustment model over time which we have done for this latest measure update. In addition, suggestions to add wheelchair mobility items in the mobility quality measure were explored and are now being implemented in our NQF endorsement maintenance application as refinement to the quality measure.

Stakeholder comments on the public display of the measure on IRF Compare were also taken into consideration. This included feedback from rulemaking public comments, the 2017 IRF TEP, and consumers. For example, consumer testing is done prior to public reporting and plain language is displayed on the website (e.g., a consumer-friendly name rather than the technical measure name). Additionally, to address industry concerns that providers needed adequate time to understand their measure data before it was publicly reported, the first data to display on IRF Compare will be calendar year 2019 (January – December 2019) though data collection began October of 2016.

#### **Improvement**

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**

**If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

The change in mobility performance measure was recently implemented on October 1, 2016 and will be publicly reported for the first time in the fall of 2020 using calendar year 2019 data. Thus, there is no extensive data to evaluate trends in performance over time. In Section 1b, we provide analysis comparing fiscal year 2017 and calendar year 2017 as well as data by quarter and show that the measure remained stable over this period. As more data becomes available, we will examine score distribution and change in provider performance scores.

#### **4b2. Unintended Consequences**

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

No unexpected findings have been identified during implementation and testing of this measure. To date, no unintended impacts on patients have been identified.

**4b2.2. Please explain any unexpected benefits from implementation of this measure.**

To date, no unexpected findings have been identified.

### **5. Comparison to Related or Competing Measures**

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

#### **5. Relation to Other NQF-endorsed Measures**

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

**5.1a. List of related or competing measures (selected from NQF-endorsed measures)**

0167 : Improvement in Ambulation/locomotion

0175 : Improvement in bed transferring

0422 : Functional status change for patients with Knee impairments

0423 : Functional status change for patients with Hip impairments

0424 : Functional status change for patients with Foot and Ankle impairments

0425 : Functional Status Change for Patients with Low Back Impairments

0426 : Functional status change for patients with Shoulder impairments

0427 : Functional status change for patients with elbow, wrist and hand impairments

0428 : Functional status change for patients with General orthopaedic impairments

0688 : Percent of Residents Whose Need for Help with Activities of Daily Living Has Increased (long stay)

2287 : Functional Change: Change in Motor Score

2321 : Functional Change: Change in Mobility Score

2612 : CARE: Improvement in Mobility

2632 : Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support

2643 : Average change in functional status following lumbar spine fusion surgery

2653 : Average change in functional status following total knee replacement surgery

2774 : : Functional Change: Change in Mobility Score for Skilled Nursing Facilities

2775 : Functional Change: Change in Motor Score for Skilled Nursing Facilities

2776 : Functional Change: Change in Motor Score in Long Term Acute Care Facilities

2778 : Functional Change: Change in Mobility Score for Long Term Acute Care Facilities

**5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.**

Change in Basic Mobility as Measured by the AM-PAC (CREcare)

**5a. Harmonization of Related Measures**

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

**5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**

**Are the measure specifications harmonized to the extent possible?**

No

**5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

All the listed measures address the same topic, function, but the target populations for most of these measures is not the IRF patient population. For example, measures are used for patients/residents treated in outpatient settings, home care, skilled nursing facilities, long-stay nursing homes, and long-term care hospitals. One measure has been previously identified by NQF staff as a competing measure: Functional Change: Change in Mobility Score (NQF #2321).

**5b. Competing Measures**

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

**5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**

**Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)**

The NQF and the Patient Experience and Function Standing Committee may choose to endorse both competing measures, because both provide value. If NQF and the committee believe that only one measure should be endorsed as “best-in-class,” we offer a list of the strengths of our measure below as well as a comparison of feasibility, usability and use for consideration.

Specifically, we describe the similarities and important differences between this change in mobility measure and the listed related and competing measures (See 5.1.a). We note that several features of this measure (e.g., the data elements, many of the risk adjusters, and the risk-adjustment approach) are the same as or aligned with the specifications of several of the other endorsed measures. Therefore, we believe that the specifications for this measure incorporate the best features of all endorsed related and competing measures, and, as a whole, represents the “best in class” for measuring change in mobility for IRFs.

This Change in Mobility (NQF #2634) measure was developed by building on the most recent science related to measurement of patient functioning and quality measure development. The latest science and scholarly literature, clinical thinking, and expert input on functional assessment and quality measurement was combined with a cross-setting design and purpose in mind. Specifications were discussed with stakeholders and experts, pilot tested, and analyzed throughout the development process, as described in the Testing form.

#### Functional Assessment Data Elements

##### 1. Cross-Setting Design

The functional assessment data elements for this measure, included in Section GG: Functional Abilities and Goals, were designed and tested with a cross-setting purpose in mind to ensure that data may be collected by clinicians in various post-acute and acute care settings. This enhances the cross-setting validity and reliability of quality measures that use these data. Standardization of self-care and mobility data elements across post-acute care settings has been an important goal for policymakers and included in the IMPACT Act of 2014. We note that another measure focused on improvement in mobility, Related Measure NQF #2612, also use the data elements from Section GG: Functional Abilities and Goals as part of their performance measure with the rationale that the data elements were developed for cross-setting use and that the data elements are standardized.

##### 2. Clinician Observation

To determine a patient’s functional ability, providers are instructed to code the data elements in Section GG: Functional Abilities and Goals primarily based on clinical observation. Specifically, a qualified clinician will assess the patient’s performance based on direct observation, as well as gather input from reports from other clinicians, care staff, or family as well as the patient’s self-report. Typically, an interdisciplinary team of qualified clinicians is involved in assessing the patient and CMS provides guidance through manuals, training programs, and help desk responses to support providers in collecting accurate functional assessment data. We note that the Competing Measure NQF #2321 and Related Measures NQF #2612, #2774, #2775, #2776, and #2778 also use clinician observation to assess and code a patient’s functional abilities.

##### 3. Functional Assessment Data Elements Capture Range of Functioning

The functional assessment data elements and associated rating scale were designed to build on the existing science of functional assessment, which included a review of the strengths and limitations of existing instruments. The inclusion of 15 mobility data elements allows for the measurement of a wide range of patient functioning and thus the opportunity to demonstrate gains in a variety of functional activities. Patients may be expected to make varying amounts of improvement, from minimal to large improvement, across different activities. We note that the Related Measure NQF #2612 also use these mobility data elements to measure improvement in mobility for the Skilled Nursing Facility setting.

##### 4. Simplified and Targeted Rating Scale

The function data elements used in this performance measure are coded using a 6-level rating scale that indicates the patient’s level of independence performing an activity; higher scores indicate more independence. The decision to use a 6-level rating scale was based on several factors. First, input from the clinical communities and research examining the relationship between minutes of assistance and functional assessment scores, which is curvilinear, indicated that persons with high functional assessment scores frequently did not require daily assistance. Second, scores do not decrease due to the use of an assistive device, which is consistent with the approach used by the World Health Organization’s International Classification of Functioning (ICF) that suggests what matters most is someone’s capacity to do an activity regardless of the use of assistive devices. Thus, the 6-level rating scale was designed to measure a person’s ability to perform daily activities with or without assistive devices. The rating scale focused solely on



the type and amount of human assistance needed to compete an activity. Another measure of mobility function, Related Measure NQF #2612 used in the Skilled Nursing Facility, also adopted the 6-level rating scale.

#### 5. Meaningful Activity Not Attempted Codes

The use of four distinct activity not attempted codes were implemented so that providers to code a specific reason for an activity not being attempted. For example, code 07 is used if the patient refused to attempt the mobility activity, such as walking 150 feet, during the entire 3-day assessment period. If the patient was not able to perform the activity safely, due to medical or safety concerns, code 88 is used. A qualified clinician's assessment that a patient's medical condition contributes to their inability to safely walk 150 feet means something different than a patient who is refusing to perform the activity, and the coding responses that allow for this distinction. Other measures of mobility function, such as Related Measure NQF #2612 used in the Skilled Nursing Facility, also adopted the activity not attempted codes.

#### Measure Calculation

##### 1. Difference Approach for Interpretability

This measure calculates the risk-adjusted performance score using observed and expected scores. When observed and expected scores are compared, the difference between the two scores is calculated, and this difference approach represents an additive relationship (i.e., the observed change in function minus the expected change in function, plus the national average). The choice between using a difference or a ratio approach depends on the researcher's assumption on whether the relationship between risk factors and the outcome is additive or multiplicative (Mukamel et al., 2000). After we conducted testing using the two approaches, and consulted with methodological experts, we decided to use the difference approach for this measure. When the expected value is small, the ratio is more volatile with small changes in the observed values (Ash et al, 2003). As the denominator approaches zero, the ratio can increase greatly in magnitude, as the observed values become greater than the expected values. Also, if the average expected value is 0, then the ratio cannot be calculated. The following measures also use this approach: Related Measure NQF #2612, used in the Skilled Nursing Facility, and the FOTO measures (NQF #0422, 0423, 0424, 0425, 0426, 0427, and 0428).

##### 2. Exclusion Criteria to Maintain Validity

We believe exclusion criteria are important specification that support the validity of the quality measure. The exclusion criteria were selected with input from the Technical Expert Panel and input from a public comment process, as well as a review of existing literature. Patients with limited or less predictable mobility due to the nature of their medical condition improvement (e.g., severe brain damage) were recommended for exclusion by experts. Their reasoning was that attributing limited improvement in patients with these conditions to poor quality of care by the IRF would threaten the validity of the quality measure. The Related Measures NQF #2612 and #2643 also exclude patients with selected medical conditions where improvement is very unlikely or unexpected in order to maintain the validity of the measure's performance score.

The change in mobility measure also has exclusions for patients with incomplete stays (e.g., discharged to acute care) or patients who were discharge to hospice for whom functional improvement may not be a goal. The Related Measures NQF #2612 and #0688 also exclude hospice patients from their performance measure.

##### 3. Robust Risk Adjustment Model

Improvement in functional abilities for patients in IRFs are associated with many patient demographic and clinical characteristics. Existing literature, stakeholder comments and technical expert opinions about risk adjustors were gathered and we all suggestions were tested with data. This measure adjusts for patient demographic and clinical characteristics, including age category, primary rehabilitation diagnosis, prior functioning, admission self-care or mobility functional status, cognitive function, communication function, and comorbidities. Adequate risk adjustment is critical to ensure quality measure validity, such that differences in performance scores across IRFs are related to differences in quality of care as much as possible, rather than to differences in patient characteristics across facilities.

For an individual patient, up to 72 risk adjustors may apply in the mobility model. Notably, 50 of these are for comorbidities. This number of comorbidities are included in the model to account for differences in functional improvement for people with different

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co-existing health conditions. We would like to highlight that no patient in the national data had all 50 comorbidities and, in fact, the maximum number of comorbidities a person had was 10. On average, patients had only 2 comorbidities (mean = 1.6), and this means that the average patient has a "0" value for all other comorbidities in the model and a final risk adjustment model adjusting for 24 factors.

Because risk adjustment is imperative when measuring functional outcomes, the other measures such as the Competing Measure, NQF #2321 and Related Measures such as #2612, #2774, #2778 and the FOTO measures (NQF #0422, 0423, 0424, 0425, 0426, 0427, and 0428) also risk adjust for comorbidities.

#### 4. Inclusion of Patients Who Use a Wheelchair

The CMS mobility measures include the wheelchair mobility items as part of the performance measure to reflect that some patients use a wheelchair as their primary method of mobility. We note that the Competing Measure NQF #2321 as well as the Related Measures #2612, #2774 and #2778 also include wheelchair mobility in their quality measure calculation.

#### Feasibility, Usability and Use Considerations

##### 1. Use of Data

The functional assessment data used to calculate this measure will be used by CMS to determine Prospective Payment rates for Medicare Part A patients treated in IRFs beginning in October 1, 2019. This data collected for quality measurement are also used for payment. There are no costs associated with fees, licensing or other requirements associated with the measure data elements or risk model. All providers have access to a free Java-based software application to collect and maintain their facility's IRF-PAI information. Facilities are able to enter and subsequently export their data from the application for submission to the appropriate national data repository.

##### 2. Interpretability of Performance Score

The performance measure score is presented publicly on IRF Compare as a mean change in mobility score that is a continuous number and the typical method that IRFs report data. This makes the score more interpretable and transparent to stakeholders and end users. Feedback from Technical Experts in the development of the measures indicated their support for a summed raw item score with the importance of transparency of calculating the quality measure and the ease of data interpretation.

##### 3. Confidential Reports for Providers

Free reports were made available to IRFs through the Certification and Survey Provider Enhanced Reports (CASPER) system starting in 2017. These reports contain feedback on providers' measure performance for internal quality improvement efforts and on national measure scores for quality benchmarking. More details about these reports and what measure data they contain is available in Section 4a2.1.2. under Usability and Use.

##### 4. Public Availability of Measure Data

All measures reported in the IRF QRP serve two purposes: to reflect IRF provider performance by publicly disseminating data about quality of care, which help consumers' and family members' decision making, and to support providers in improving the quality of care they provide to patients. Public reporting on IRF Compare for the functional outcome measures will begin in fall 2020 (on discharges from January 1, 2019 through December 31, 2019).

##### 5. Support for Interpretation and Calculation of Performance Scores

To assist providers to collect accurate data for this measure, CMS has offered multiple in-person and on-line training opportunities since May 2015. In addition, several help desks are available to answer provider questions regarding data collection, and feedback reports, and "Q & A" documents are posted on the CMS website.

To assist providers with calculating their facility's performance score internally, the publicly available IRF QRP Measure Calculations

and Reporting User's Manual presents measure specifications and calculations for each measure included in the IRF QRP, including this measure.

To assist consumers, such as family members and patients, with viewing and interpreting the measures posted on the public IRF Compare website, an IRF Public Reporting help desk is available. Individuals can submit questions or comments to CMS at any time and in this way, CMS provides real-time support to patients, families and caregivers seeking additional information or clarification on measures.

#### References:

Ash, A.S., Shwartz M., Pekoz, E.A., & Hanchate, A.D. Chapter 12: Comparing outcomes across providers. In: Iezzoni L, ed. Risk adjustment for measuring health care outcomes, 4th ed. Chicago, IL: Health administration Press; 2012:335-378.

Avlund K, Kreiner S, Schultz-Larsen K. Construct validation and the Rasch model: functional ability of health elderly people. Scand J Soc Med. 1993;21:233-246.

Coster, W. J., Haley, S. M., Ludlow, L. H., Andres, P. L., & Ni, P. S. (2004). Development of an applied cognition scale to measure rehabilitation outcomes. Archives of physical medicine and rehabilitation, 85(12), 2030-2035.

Glenny, C., & Stolee, P. (2009). Comparing the functional independence measure and the interRAI/MDS for use in the functional assessment of older adults: a review of the literature. BMC geriatrics, 9(1), 52.

Mukamel, D. B., Dick, A., & Spector, W. D. (2000). Specification issues in measurement of quality of medical care using risk adjusted outcomes. Journal of Economic and Social Measurement, 26(3, 4), 267-281.

Thomas VS, Rockwood K, McDowell I. Multidimensionality in instrumental and basic activities of daily living. J Clin Epidemiol. 1998;51:315-321.

## Appendix

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

**Attachment Attachment:** [IRF\\_Detailed\\_Function\\_QM\\_Specifications\\_2634\\_01-07-2019.docx](#)

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** Centers for Medicare & Medicaid Services

**Co.2 Point of Contact:** Helen, Dollar-Maples, [Helen.Dollar-Maples@cms.hhs.gov](mailto:Helen.Dollar-Maples@cms.hhs.gov), 410-786-7214-

**Co.3 Measure Developer if different from Measure Steward:** RTI International

**Co.4 Point of Contact:** Anne, Deutsch, [adeutsch@rti.org](mailto:adeutsch@rti.org)

## Additional Information

### Ad.1 Workgroup/Expert Panel involved in measure development

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

This quality measure was developed with significant and ongoing input by several Technical Expert Panels (TEPs). Expert panel members provided input on status quality metrics, including the performance score, the target population, risk adjustment and exclusion criteria. Some expert panel meetings focused on measuring functional status across post-acute care settings, and other meetings focused on functional assessment and functional outcomes for Inpatient Rehabilitation Facility (IRF) patients.

Most recently, RTI International, on behalf of the Centers for Medicare & Medicaid Services (CMS), convened a Technical Expert Panel (TEP) to seek expert input on the Development and Maintenance of Performance Measures for the Inpatient Rehabilitation

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Facilities Quality Reporting Program (IRF QRP). An all-day, in-person TEP meeting was held on March 27, 2017 in Baltimore, MD. The objectives of the TEP meeting were to obtain input on IRF QRP performance measures adopted into the program and obtain guidance and recommendations for future measures. The following experts participated in this TEP:

Mary Ellen DeBardeleben, MBA, MPH, CJCP, Director of Quality at HealthSouth

Karen Green, PT, DPT, Director of Rehabilitation at Cleveland Clinic

Brigid Greenberg, PT, MHS, Business Development Advisor, Manager of Post Discharge Services and Appeals at Uniform Data System for Medical Rehabilitation

Kurtis Hoppe, MD, IRF Medical Director at Mayo Clinic

Cristina Huerta, CRRN, MBA-HCM, Vice President-Rehab Operations, HCA, Inc., Association of Rehabilitation Nurses

Steven Lichtman, EdD, MAACVPR, Patient representative, Director, Cardiopulmonary Outpatient Services, Rehabilitation Research; Research Scientist at Helen Hayes Hospital

Stephanie Nadolny, TRS, MHA, Vice President of Hospital Operations at Spaulding Rehabilitation Hospital Cape Cod

Pam Roberts, PhD, MSHA, OTR/L, SCFES, FAOTA, CPHQ, FNAP, FACRM, Director and Professor Physical Medicine and Rehabilitation and Academic and Physician Informatics at Cedars-Sinai Health System

Mary Van de Kamp, MS/CCC-SLP, Senior Vice President of Quality at Kindred Healthcare

Alan Zaph, PT, Coordinator at Carolinas Rehabilitation – Patient Safety Organization

Previous TEP meetings:

The first expert panel meeting, held as part of a project titled Analysis of Crosscutting Medicare Quality Metrics Using the Uniform Assessment Tool Developed and Tested as Part of the CMS Post-Acute Care Payment Reform Demonstration, was funded by the Assistant Secretary for Planning and Evaluation. The expert panel meeting was held on August 15, 2012, in Washington, DC, with the following expert panel members:

James Farrell, CNO, Healthsouth

David Gifford, MD, MPH, Senior Vice President for Quality & Regulatory Affairs at American Health Care Association

Eileen Bach, PT, M.Ed., DPT, Compliance Specialist, Director Quality and Patient Safety at Visiting Nurse Service of New York

Linda Resnik, PhD, PT, Associate Professor of Health Services, Policy and Practice at Brown University

Trudy Mallinson, PhD, OT, Assistant Professor at University of Southern California, Department of Occupational Science and Occupational Therapy

Margaret Stineman, MD, Professor of Physical Medicine and Rehabilitation, Vice Chair & Director, Research, Department of Physical Medicine & Rehabilitation at University of Pennsylvania

Margaret Rogers, PhD, Chief Staff Officer for Science & Research at American Speech-Language-Hearing Association

Pam Roberts, PhD, OTR/L, CPHQ, FAOTA Manager at Cedars-Sinai Medical Center

Bruce Gans, MD Executive Vice President and Chief Medical Officer at Kessler Institute

William Pesce, DO, Chief of Physical Medicine & Rehabilitation at Hospital for Special Care

Roger Herr, PT, MPA, COS-C, Vice President Quality Management at Independence Care System

A second expert panel meeting was held on February 8, 2013, as part of a project entitled Symptom Management Measure Development. The following IRF experts were included on this panel:

Alfred Chiplin, JD, Senior Policy Attorney at Center for Medicare Advocacy

Dexanne Clohan, MD, Senior Vice President and Chief Medical Officer at HealthSouth

Cathy Ellis, PT, Clinical Director at National Rehabilitation Hospital, AVP Clinical Services, Spinal Cord Program

Bruce Gans, MD, Executive Vice President and Chief Medical Officer at Kessler Institute

Terrence O'Malley, MD, Medical Director, Non-Acute Care Services

Pamela Roberts, PhD, Manager at Cedars-Sinai Medical Center

Elliot Roth, MD Medical Director, Brain Injury Medicine and Rehabilitation Program at Rehabilitation Institute of Chicago

M. Elizabeth Sandel, MD, Physician

Karen Kloter, Medical Rehab Resource Specialist CARF International

Sharon Sprenger, MPA, RHIA, CPHQ, Senior Advisor, Measurement Outreach, Division of Healthcare Quality Evaluation at The Joint Commission

Suzanne Snyder, MBA, PT, CPUM, Director of Rehabilitation Utilization and Compliance at Carolinas Rehabilitation

Margaret Stineman, MD, Professor of Physical Medicine and Rehabilitation, Vice Chair & Director, Research, Department of Physical Medicine & Rehabilitation, University of Pennsylvania

A third expert panel meeting was held in Baltimore, MD, on September 9, 2013, as part of a project titled Symptom Management

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**Measures.** The following experts served on this panel:

Lawrence Miller, MD, Clinical Professor of Medicine at University of California, Los Angeles

Richard Black, MD, Corporate Rehabilitation Consultant at HCR Manor Care

Mary Van de Kamp, MS, CCC-SLP, Senior Vice President of Quality and Care Management at Kindred

Timothy Reistetter, PhD, OTR, Associate Professor at University of Texas Medical Branch

Ellen Strunk, PT, MS, GCS, Consultant at Rehab Resources & Consulting, Inc.

Saad Naaman, MD, MS, Clinician at Physiatry (Physical Medicine & Rehabilitation) Practice

Linda Ladesich, MD, Medical Director Sunflower State Health

Paulette Niewczyk, MPH, PhD, Director of Research at the Uniform Data System for Medical Rehabilitation

Camille Haycock, RN, MS, Vice President, Care Continuum at Catholic Health Initiatives

Elizabeth Newman, OTD, OT/L, Director of Occupational Therapy, Rehabilitation Engineering and Clinical, Informatics at Medstar National Rehabilitation Hospital

Karon Cook, PhD, Research Associate Professor at Northwestern University

Richard Riggs, MD, Chairman and Medical Director for Cedars-Sinai Medical Center

Michelle Camicia, MSN, RN, Director of Operations at Kaiser Foundation Rehabilitation Center

Jill Bolte Taylor, PhD, Author: My Stroke of Insight.

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** 2015

**Ad.3 Month and Year of most recent revision:** 12, 2017

**Ad.4 What is your frequency for review/update of this measure?** annually

**Ad.5 When is the next scheduled review/update for this measure?** 04, 2019

**Ad.6 Copyright statement:** Not applicable

**Ad.7 Disclaimers:** Not applicable

**Ad.8 Additional Information/Comments:** Not applicable