

November 2015

**Draft Specifications for the Discharge to
Community Quality Measure for Skilled
Nursing Facilities (SNFs), Inpatient
Rehabilitation Facilities (IRFs), Long-
Term Care Hospitals (LTCHs), and Home
Health Agencies (HHAs)**

Public Comment Document

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DRAFT SPECIFICATIONS FOR THE DISCHARGE TO COMMUNITY QUALITY
MEASURE FOR SKILLED NURSING FACILITIES (SNFs), INPATIENT
REHABILITATION FACILITIES (IRFs), LONG-TERM CARE HOSPITALS (LTCHs), AND
HOME HEALTH AGENCIES (HHAs)

RTI International

CMS Contract No. HHSM-500-2013-13015I, Task Order HHSM-500-T0001

Abt Associates

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SECTION 1 PROJECT INFORMATION

1.1 Project Titles

1. *Development and Maintenance of Symptom Management Measures* (RTI International; CMS Contract no. HHSM-500-2013-13015I, Task Order HHSM-500-T0001)
2. *Outcome and Assessment Information Set (OASIS) Quality Measure Development and Maintenance* (Abt Associates; CMS Contract no. HHSM-500-2013-13001I, Task Order HHSM-500-T0002)

1.2 Project Overview

The Centers for Medicare & Medicaid Services (CMS) has contracted with RTI International and Abt Associates to develop a cross-setting discharge to community quality measure in order to meet the mandate of the Improving Post-Acute Care Transformation Act of 2014 (IMPACT Act). The purpose of the two projects is to develop measures reflective of quality of care for post-acute care settings to support CMS quality missions. Care settings included in these measure development projects are skilled nursing facilities (SNFs), inpatient rehabilitation facilities (IRFs), long-term care hospitals (LTCHs), and home health agencies (HHAs). These projects also address the domains required by the IMPACT Act, which mandates specification of cross-setting quality, resource use, and other measures for post-acute care providers. Quality measures are being developed consistent with the three broad aims and six priorities of the National Quality Strategy, and the CMS Quality Strategy.

SECTION 2
MEASURE DESCRIPTIVE INFORMATION

2.1 Measure Name

Discharge to Community

2.2 Measure Type

Cost-Resource Use

2.3 Care Settings

SNFs, IRFs, LTCHs, and HHAs

2.4 Brief Description of Measure

This measure describes the risk-standardized rate of Medicare fee-for-service (FFS) patients/residents/persons who are discharged to the community following a post-acute stay/episode, and do not have an unplanned (re)admission to an acute care hospital or LTCH in the 31 days following discharge to community, and remain alive during the 31 days following discharge to community.

A risk-adjusted discharge to community rate for each facility/agency will be calculated as follows:

Step one: Calculate the standardized risk ratio of the predicted number of patients/residents/persons discharged to the community from the facility/agency (without unplanned (re)admissions or death in the 31-day post-discharge window), divided by the expected number of patients/residents/persons discharged to the community from an average facility/agency (without unplanned (re)admissions or death in the post-discharge window). The magnitude of the risk-standardized ratio is the indicator of a facility's/agency's effect on the discharge to community rate.

Step two: The standardized risk ratio is then multiplied by the mean rate of discharge to community (without unplanned (re)admissions or death in the post-discharge window) in the population (i.e., all Medicare FFS patients/residents/persons included in the measure) to generate the facility-level standardized discharge to community rate. The mean rate of discharge to community in the population is calculated separately for each post-acute care setting.

2.5 Data Sources

Medicare fee-for-service claims and Medicare eligibility files.

SECTION 3 MEASURE JUSTIFICATION

3.1 Measure Priority

The ultimate goals of post-acute care are avoiding institutionalization and returning patients to their previous level of independence and functioning. Discharge to a community-based setting is the primary goal for the majority of patients in post-acute care settings, making it a priority for quality measure development from the patient and family perspective. For patients receiving home health services, the goal is for patients to remain in the home setting at the end of their home health episode. Home is often considered a symbol of independence, privacy and competence.¹ Discharge to community is a valuable outcome because it offers a multi-dimensional view of preparation for community life, including cognitive, physical, and psychosocial elements.^{2,3}

In addition to being important from a patient and family perspective, avoiding institutionalization and promoting discharge to community, when appropriate, are also important from a cost and resource use perspective. Patients discharged to community settings may incur lower costs over the recovery episode, compared with patients discharged to institutional settings.^{4,5}

The importance of examining discharge to community in post-acute care settings is corroborated by the Medicare Payment Advisory Commission (MedPAC). In their 2013-2015 Reports, MedPAC used discharge to community as one of three indicators of quality of care in IRF and SNF settings.⁶⁻⁸ Other researchers have suggested that discrepancies in discharge to community rates may offer an important basis for quality comparisons across settings and facilities, particularly by identifying facilities that may not adequately prepare patients for discharge.⁹

3.2 Performance Gap

There is considerable variation in discharge to community rates within and across post-acute settings. Studies have also reported variation in discharge to community rates based on patients' socioeconomic characteristics (e.g., race and ethnicity), facility geographic location (e.g., regional location, urban vs. rural location), and facility characteristics (e.g., for-profit vs. nonprofit, freestanding vs. hospital-based), with or without adjustment for case-mix.^{2,6,10}

According to the 2015 MedPAC report, the calendar year 2013 nationwide facility-level risk-adjusted rate of community discharge within 100 days of admission was 75.8 percent for IRFs, and 37.5 percent for SNFs.⁶ Discharge to community rates in the IRF setting have been reported to range from about 60 to 80 percent.¹¹⁻¹⁶ Greater variation in discharge to community rates is seen in the SNF setting, with rates ranging from 31 to 65 percent.^{2,17-19} While there is limited literature in the LTCH setting, one multi-center study of 23 LTCHs reported that 28.8 percent of 1,061 patients who were ventilator-dependent on admission, were discharged to home or an assisted living facility.²⁰ There is also limited literature regarding other care settings used by persons following discharge from home health services. One study noted that 64 percent of beneficiaries who were discharged from a home health episode did not use any other Medicare-reimbursed acute or post-acute services in the 30 days after discharge.²¹ However, significant

numbers of beneficiaries were admitted to hospitals (29 percent) and lesser numbers to skilled nursing facilities (7.6 percent), inpatient rehabilitation facilities (1.5 percent), home health (7.2 percent) or hospice (3.3 percent).²¹

The variation in discharge to community rates across providers suggests that there is room for improvement in this important domain. Measuring facility- and agency-level discharge to community rates may help differentiate among facilities with varying performance in this domain.

3.3 Actionability

A discharge to community measure would be an actionable measure, since targeted interventions have successfully increased discharge to community rates in a variety of post-acute settings.^{13,19,22,23} Many of these interventions involve discharge planning or specific rehabilitation strategies, such as addressing discharge barriers and improving medical and functional status.^{13,19,22,23} The effectiveness of these interventions suggests that improvement in discharge to community rates among post-acute patients/residents/persons is possible through modified provider-led processes and interventions.

3.4 Measure Impact

A discharge to community measure for post-acute settings would affect a large proportion of the Medicare population each year. In 2013, 1.7 million Medicare FFS beneficiaries had SNF stays, 338,000 beneficiaries had IRF stays, 122,000 beneficiaries had LTCH stays, and 3.5 million beneficiaries received home health care.⁶

SECTION 4 MEASURE SPECIFICATIONS

4.1 Target Population

4.1.1 For SNF, IRF, LTCH settings

The target population includes all Medicare FFS patients/residents admitted to a SNF, IRF, or LTCH setting within 30 days of discharge from an acute care hospital, with some exclusions applied (see section 4.6).

4.1.2 For HHA setting

The target population includes all Medicare FFS persons admitted to a HHA setting, with some exclusions applied (see section 4.6).

In the HHA setting, an acute care discharge in the 30 days preceding start of the HHA episode is not required. Over half of home health episodes are not preceded by an acute care hospital stay within the past 30 days. Therefore, requiring a prior acute stay in the 30 days preceding the HHA episode would result in exclusion of the majority of the HHA population, and would reduce generalizability of the measure to the larger Medicare FFS home health population.

4.2 Numerator Statement

The numerator is mathematically related to the number of patients/residents/persons in the denominator who are discharged to the community, and do not have an unplanned (re)admission to an acute care hospital or LTCH on the day of discharge or in the 31 days following discharge to community, and remain alive during the 31 days following discharge to community. The measure does not have a simple form for the numerator and denominator—that is, the risk adjustment method used does not make the *observed* number of community discharges the numerator, and a *predicted* number the denominator. Instead, the numerator is the *risk-adjusted estimate* of the number of patients/residents/persons who are discharged to the community, and do not have an unplanned (re)admission to an acute care hospital or LTCH in the 31-day post-discharge observation window, and remain alive during the post-discharge observation window. This estimate includes risk adjustment for patient/resident/person characteristics, and a statistical estimate of the facility/agency effect beyond case mix.

4.3 Numerator Details

The numerator is the risk-adjusted estimate of the number of patients/residents/persons included in the measure who are discharged to the community, and do not have an unplanned (re)admission to an acute care hospital or LTCH on the day of discharge or in the 31 days following discharge to community, and remain alive during the 31 days following discharge to community. The numerator estimate includes risk adjustment for patient/resident/person characteristics, and a statistical estimate of the facility/agency effect beyond case mix. The numerator will use a model estimated on full national data specific to the post-acute setting; it will be applied to the facility's/agency's patients/residents/persons, and will include the estimated effect of that facility or agency.

A favorable outcome for the measure is a discharge to the community, without an unplanned (re)admission to an acute care hospital or LTCH in the 31 days following discharge to community, and without death in the 31 days following discharge to community.

The prediction equation will be based on a logistic statistical model with a 2-level hierarchical structure. The patient stays/episodes in the model will have an indicator of the facility/agency they are discharged from; the effect of the facility/agency will be measured as a positive or negative shift in the intercept term of the equation. The facility effects will be modeled as belonging to a normal (Gaussian) distribution centered at 0, and will be estimated along with the effects of patient/resident/person characteristics in the model. See section 4.11 for details.

4.3.1 Discharge to Community

Discharge to community will be determined based on the “Patient Discharge Status Code” from claims. In SNF, IRF, and LTCH settings, discharge to community will be defined as discharge to home with or without home health services. In the HHA setting, discharge to community will be defined as discharge to home without home health services.

**Table 1
Patient Discharge Status Codes Used to Determine Discharge to Community**

Setting	Discharge Status Codes Indicating Community Discharge
SNF, IRF, LTCH	01 = Discharged to home/self-care (routine discharge)
	06 = Discharged/transferred to home under care of organized home health service organization
	81 = Discharged to home or self-care with a planned acute care hospital readmission
	86 = Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission
HHA	01 = Discharged to home/self-care (routine discharge)
	81 = Discharged to home or self-care with a planned acute care hospital readmission

4.3.2 Unplanned Admissions/Readmissions in the 31-Day Post-Discharge Observation Window

A patient/resident/person who is discharged to the community will be considered to have an unfavorable outcome if they have a subsequent unplanned (re)admission to an acute care hospital or LTCH in a post-discharge observation window, which includes the day of discharge and the 31 days following day of discharge. We will identify unplanned (re)admissions based on the planned readmissions algorithm used in the following post-acute care readmission measures, endorsed by the National Quality Forum (NQF): (i) NQF #2510: Skilled Nursing Facility 30-Day

All-Cause Readmission Measure (SNFRM); (ii) NQF #2502: All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Inpatient Rehabilitation Facilities; (iii) NQF #2512: All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Long Term Care Hospitals; and (iv) NQF #2380: Rehospitalization During the First 30 Days of Home Health.²⁴⁻²⁷ These readmission measures are based on the Hospital-Wide All-Cause Readmission Measure (HWR) (CMS/Yale) (NQF #1789),²⁸ with some additions made for post-acute settings. The planned readmission definition is based on the claim from the readmission having a code for a procedure that is frequently planned; however, if a principal diagnosis in a specified list of acute diagnoses is present, the readmission is reclassified as unplanned. Admissions/readmissions to psychiatric hospitals or units are classified as planned (re)admissions.

Please note that this measure is being developed with ICD-9 procedure and diagnosis codes. The measure will be revised using the ICD-9 to ICD-10 cross-walk.

4.3.3 Death in the 31-Day Post-Discharge Observation Window

Patients/residents/persons who are discharged to the community will also be considered to have an unfavorable outcome if they die in the post-discharge window, which includes the day of discharge and the 31 days following day of discharge. Death in the post-discharge window will be identified based on date of death from Medicare eligibility files.

4.4 Denominator Statement

The denominator is computed with the same model used for the numerator. It is the model developed using all non-excluded facility/agency stays/episodes in the national data. For a particular facility/agency, the model is applied to the patient/resident/person population, but the facility/agency effect term is 0. In essence, it is the number of discharges to community that would be expected for that patient/resident/person population at the average facility/agency. The measure includes all facility/agency stays/episodes in the measurement period that are observed in national Medicare FFS data and do not fall into an excluded category.

4.5 Denominator Details

For the eligible stays/episodes at each facility/agency, the measure denominator is the risk-adjusted expected number of discharges to community (without unplanned (re)admissions or death in the post-discharge observation window). This estimate includes risk adjustment for patient/resident/person characteristics, but with the facility/agency effect is removed. The “expected” number of discharges to community is the predicted number of risk-adjusted discharges to community if the patients/residents/persons were treated at the average facility/agency.

The denominator population, like that for the numerator, is the group of Medicare FFS patients/residents/persons who are not excluded for the reasons listed in section 4.6 below.

4.6 Measure Exclusions

Exclusions for the discharge to community measure are listed below, along with the rationale for each exclusion.

1. *Age under 18 years*

Patients/residents/persons under 18 years of age are excluded for the following reasons:

- a. There is limited literature on discharge destination outcomes in this age group;
- b. Patients/residents/persons in this age group represent a different cohort, likely living with their parents, and may be expected to have higher discharge to community rates compared with the rest of the Medicare population; and
- c. Patients/residents/persons in this age group represent a small proportion of the post-acute Medicare FFS population.

2. *No short-term acute care stay within the 30 days preceding a SNF, IRF, or LTCH admission*

This exclusion applies to SNF, IRF, and LTCH settings only. Acute care claims from the 30 days prior to SNF, IRF, or LTCH admission provide the principal diagnosis and other important patient/resident data for risk adjustment. In SNF, IRF, and LTCH settings, patients/residents without a short-term acute care discharge within the 30 days prior to post-acute admission will be excluded from the measure, because important risk adjustment data will be missing.

3. *Discharges to psychiatric hospital*

Patients/residents/persons discharged to psychiatric hospital are excluded from the measure because they may be potentially inappropriate or unsafe for community living at the time of discharge due to their mental health or psychiatric condition.

4. *Discharges against medical advice*

Patients/residents/persons who discharge themselves against medical advice are excluded because their care plan may not have been fully implemented, and the discharge destination may not reflect the facility's/agency's discharge recommendation. Additionally, patients/residents/persons discharged against medical advice may potentially be at higher risk of post-discharge (re)admissions or death, depending on their medical condition, or due to potential non-adherence or non-compliance with care recommendations.

5. *Discharges to federal hospitals or disaster alternative care sites*

Patients/residents/persons discharged to federal hospitals or disaster alternative care sites are excluded because we will be unable to track them following discharge from the post-acute setting.

6. *Discharges to hospice*

Discharges to hospice represent a very small proportion of the post-acute Medicare FFS population. Patients/residents/persons discharged to hospice are excluded for the following reasons:

- a. Hospice patients are terminally ill, and have very different goals of care compared with non-hospice patients. For non-hospice patients, the primary goal of post-acute care is to return to baseline, independent living in the community; death is an undesirable outcome in the non-hospice population. For patients/residents/persons discharged to hospice, the goal is to provide them the opportunity to die comfortably, at home or in a facility.
- b. A large proportion of hospice patients die in the 31-day window following discharge from the post-acute setting.
- c. The hospice agency, not the post-acute care setting, makes the decision of discharge to hospice-home or hospice-facility.

7. *Patients/residents/persons not continuously enrolled in Part A FFS Medicare for the 12 months prior to the post-acute admission date, and at least 31 days after post-acute discharge date*

Patients/residents/persons not continuously enrolled in Part A FFS Medicare for the 12 months prior to the post-acute stay admission date are excluded because risk adjustment for certain comorbidities requires information on acute inpatient bills for one year prior to post-acute admission. Patients/residents/persons not continuously enrolled in Part A FFS Medicare for at least 31 days after post-acute discharge are excluded because (re)admissions and death must be observable in the 31-day post-discharge period. Patients/residents/persons without Part A coverage or those who are enrolled in Medicare Advantage plans will not have complete inpatient claims in the system.

8. *Patients/residents/persons whose prior short-term acute care stay was for non-surgical treatment of cancer*

This exclusion applies to SNF, IRF, LTCH patients/residents, and to HHA persons with a prior acute stay in the past 30 days. Patients/residents/persons whose prior short-term acute care stay was for non-surgical treatment of cancer are excluded because they have a different trajectory for recovery after discharge, with a high mortality rate. Exclusion of these patients/residents/persons is consistent with the hospital-wide and post-acute readmission measures.

9. *Post-acute stays that end in transfer to the same level of care*

Post-acute stays that end in transfer to the same level of care are excluded from the measure. For a post-acute episode that involves transfer to the same level of care, only the final post-acute provider is included in the measure.

10. Post-acute stays with claims data that are problematic (e.g., anomalous records for stays that overlap wholly or in part, or are otherwise erroneous or contradictory)

This measure requires accurate information from the post-acute stay and prior short-term acute care stay in the elements used for risk adjustment. No-pay post-acute stays involving exhaustion of Part A benefits are also excluded. In the HHA setting, episodes with a missing payment authorization code are excluded.

4.7 Measure Exclusion Details

The measure exclusion criteria are determined by processing Medicare claims and eligibility data to determine whether the individual exclusion criteria in section 4.6 are met. The claims are also analyzed to determine transfers and appropriate patterns of dates. All measure exclusion criteria are based on administrative data.

4.8 Time Period for Data

4.8.1 Time Period for Facility/Agency-Level Measure Calculation

The time period for calculating the facility/agency-level discharge to community measure will be determined by the sample size available for each setting. Smaller setting-specific populations may require data to be collected over a longer time to get robust results.

4.8.2 Look Back Period for Prior Acute Stay in SNF, IRF, and LTCH Settings

For the SNF, IRF, and LTCH settings, patient stays are included in the measure only if they are preceded by an acute care discharge in the 30 days prior to post-acute admission. We will look back 30 days from the date of admission to the SNF, IRF, or LTCH to determine if there was a discharge from an acute care hospital in the 30 days prior to SNF, IRF, or LTCH admission.

The HHA setting measure does not require an acute care discharge in the 30 days prior to start of the HHA episode.

4.8.3 Post-Discharge Observation Window for Unplanned Admissions/Readmissions and Death

After the patient/resident/person is discharged from the post-acute care setting to the community, we will look for unplanned (re)admissions or death on the day of discharge or in the 31 days following discharge. An unplanned (re)admission or death in this post-discharge observation window is considered an unfavorable outcome for the measure.

4.9 Data Dictionary, Code Table, or Value Sets

Please see Appendix A for valid codes and code descriptions for the Patient Discharge Status Code variable.

4.10 Risk Adjustment Type

Statistical risk model

4.11 Statistical Risk Model and Risk Adjustment Variables under Consideration

4.11.1 Statistical Risk Model under Consideration

The statistical risk model under consideration is a hierarchical logistic regression model, predicting the probability of a countable discharge to community without an unplanned (re)admission or death in the 31-day post-discharge window. Risk adjusters will be used as predictor variables in the model. Patient/resident/person characteristics related to each discharge, and a marker for the specific discharging post-acute facility/agency will be included in the equation. The equation will be hierarchical in that both individual patient/resident/person characteristics, as well as clustering of patients/residents/persons into facilities/agencies, will be accounted for. The statistical model will estimate both the average predictive effect of patient/resident/person characteristics across all facilities/agencies, and the degree to which each facility/agency has an effect on the outcome that differs from that of the average facility/agency. The facility/agency effects can be assumed to be randomly distributed around the average (according to a normal distribution). When computing the facility/agency effect, hierarchical modeling accounts for the known predictors of the outcome, on average, such as patient/resident/person characteristics, the observed facility/agency rate, and the number of facility/agency stays/episodes eligible for the measure. The estimated facility/agency effect will primarily be determined by the facility's/agency's own data if the number of discharges is relatively large, as the estimate would be relatively precise. The estimated facility/agency effect will be adjusted toward the average if the number of discharges is small, as small samples yield an estimate of lower precision.

We plan to use the estimated equation twice in the measure. The sum of the probabilities of discharge to community (without post-discharge unplanned (re)admissions or death) of all patients/residents/persons in the facility/agency measure, including both the effects of patient/resident/person characteristics and facility/agency, will be the “predicted number” of discharges to community after adjusting for case mix. The same equation will be used without the facility/agency effect to compute the “expected number” of discharges to community for the same patients/residents/persons at the average facility/agency. The ratio of the predicted-to-expected number of discharges to community will be the measure of the degree to which the discharges to community are higher or lower than what would otherwise be expected. This risk-standardized ratio will then be multiplied by the mean discharge to community rate (without unplanned (re)admissions or death in the post-discharge observation window) for all facility/agency stays/episodes, to obtain the risk-standardized discharge to community rate for each facility/agency.

4.11.2 Risk Adjustment Variables under Consideration

Risk adjustment variables under consideration include patient/resident/person demographic and eligibility characteristics; principal diagnoses; types of surgery or procedures from the prior short-term stay; comorbidities; length of stay and ICU/CCU utilization from the prior short-term stay; and prior acute utilization in the year preceding post-acute admission. Specific risk adjustment variables under consideration for testing include the following:

1. Sociodemographic variables
 - a. Age group
 - b. Sex
2. Disability as original reason for entitlement
3. Medicare-Medicaid dual status
4. Characteristics of the prior acute stay in the past 30 days (for SNF, IRF, LTCH settings, and for HHA persons whose episode is preceded by an acute care stay in the past 30 days)
 - a. Length of stay
 - b. Intensive care use indicator, or intensive care length of stay
5. Ventilator use (in the LTCH setting)
6. Clinical conditions
 - a. Principal diagnosis from prior acute stay in the past 30 days (for SNF, IRF, LTCH settings, and for HHA persons whose episode is preceded by an acute care stay in the past 30 days)
 - b. Comorbidities (based on prior acute stay in the past 30 days, or based on one year look back, depending on the specific comorbidity; in the HHA setting, data from the prior acute stay in the past 30 days will be used when available)
 - c. Surgery, procedures during the prior acute stay in the past 30 days (for SNF, IRF, LTCH settings, and for HHA persons whose episode is preceded by an acute care stay in the past 30 days)
 - d. Dialysis
 - e. IRF Case-Mix Groups (in the IRF setting only)
 - f. Activities of Daily Living (in the HHA setting only)
7. Prior acute care utilization in the past year
 - a. Number of acute care discharges in the past year, not including the hospitalization in the 30 days prior to the post-acute stay, or
 - b. Number of prior hospital days in the past year, not including the hospitalization in the 30 days prior to the post-acute stay
8. Prior post-acute and emergency department utilization in the past year (in the HHA setting only)
 - a. Number of prior SNF, IRF, and LTCH discharges
 - b. Number of prior emergency department visits without hospitalization

4.12 Calculation Algorithm/Measure Logic

The following steps describe the calculation algorithm/measure logic for the discharge to community measure:

- Step one:* Identify patients/residents/persons meeting the criteria for the target population, after applying measure exclusions.
- Step two:* Identify patients/residents/persons meeting the numerator criteria, i.e., discharge to community, no unplanned (re)admissions on the day of discharge or in the 31 days following discharge, and no death on the day of discharge or in the 31 days following discharge.
- Step three:* Identify presence or absence of risk adjustment variables for each patient/resident/person.
- Step four:* Calculate the predicted and expected number of discharges to community for each facility/agency using the hierarchical logistic regression model.
- Step five:* Calculate the standardized risk ratio for each facility/agency, as the ratio of the predicted to expected number of discharges to community.
- Step six:* Calculate the risk-standardized discharge to community rate for each facility/agency.

The standardized risk ratio, or SRR, which is calculated in Step five, is multiplied by the overall national raw discharge to community rate for all facility/agency stays/episodes to produce the facility/agency risk-standardized discharge to community rate. The national raw discharge to community rate is calculated separately for each post-acute setting.

NOTE: Because the statistic described in Step six is a complex function of parameter estimates, re-sampling and simulation techniques (e.g., bootstrapping) may be necessary to derive a confidence interval estimate for the final risk-standardized rate, to characterize the uncertainty of the estimate.

4.13 Type of Score

Continuous variable

4.14 Interpretation of Score

Higher scores indicate better quality

4.15 Level of Analysis

Facility/agency

REFERENCES

1. Chang PF, Ostir GV, Kuo YF, Granger CV, Ottenbacher KJ. Ethnic differences in discharge destination among older patients with traumatic brain injury. *Archives of physical medicine and rehabilitation*. 2008;89(2):231-236.
2. El-Solh AA, Saltzman SK, Ramadan FH, Naughton BJ. Validity of an artificial neural network in predicting discharge destination from a postacute geriatric rehabilitation unit. *Archives of physical medicine and rehabilitation*. 2000;81(10):1388-1393.
3. Tanwir S, Montgomery K, Chari V, Nesathurai S. Stroke rehabilitation: availability of a family member as caregiver and discharge destination. *European journal of physical and rehabilitation medicine*. 2014;50(3):355-362.
4. Dobrez D, Heinemann AW, Deutsch A, Manheim L, Mallinson T. Impact of Medicare's prospective payment system for inpatient rehabilitation facilities on stroke patient outcomes. *American journal of physical medicine & rehabilitation / Association of Academic Physiatrists*. 2010;89(3):198-204.
5. Gage B, Morley M, Spain P, Ingber M. *Examining Post Acute Care Relationships in an Integrated Hospital System Final Report*. RTI International;2009.
6. *March 2015 Report to the Congress: Medicare Payment Policy*. Medicare Payment Advisory Commission;2015.
7. *March 2013 Report to the Congress: Medicare Payment Policy*. Medicare Payment Advisory Commission;2013.
8. *March 2014 Report to the Congress: Medicare Payment Policy*. Medicare Payment Advisory Commission;2014.
9. Silverstein B, Findley PA, Bode RK. Usefulness of the Nursing Home Quality Measures and Quality Indicators for Assessing Skilled Nursing Facility Rehabilitation Outcomes. *Archives of physical medicine and rehabilitation*. 2006;87(8):1021-1025.
10. Reistetter TA, Karmarkar AM, Graham JE, et al. Regional variation in stroke rehabilitation outcomes. *Archives of physical medicine and rehabilitation*. 2014;95(1):29-38.
11. Gagnon D, Nadeau S, Tam V. Clinical and administrative outcomes during publicly-funded inpatient stroke rehabilitation based on a case-mix group classification model. *Journal of rehabilitation medicine*. 2005;37(1):45-52.
12. Galloway RV, Granger CV, Karmarkar AM, et al. The Uniform Data System for Medical Rehabilitation: report of patients with debility discharged from inpatient rehabilitation programs in 2000-2010. *American journal of physical medicine & rehabilitation / Association of Academic Physiatrists*. 2013;92(1):14-27.
13. Kushner DS, Peters KM, Johnson-Greene D. Evaluating Siebens Domain Management Model for Inpatient Rehabilitation to Increase Functional Independence and Discharge Rate to Home in Geriatric Patients. *Archives of physical medicine and rehabilitation*. 2015;96(7):1310-1318.
14. Morley MA, Coats LA, Forgues AL, Gage BJ. Inpatient rehabilitation utilization for Medicare beneficiaries with multiple sclerosis. *Archives of physical medicine and rehabilitation*. 2012;93(8):1377-1383.
15. Reistetter TA, Graham JE, Deutsch A, Granger CV, Markello S, Ottenbacher KJ. Utility of functional status for classifying community versus institutional discharges after inpatient rehabilitation for stroke. *Archives of physical medicine and rehabilitation*. 2010;91(3):345-350.

16. DaVanzo J, El-Gamil A, Li J, Shimer M, Manolov N, Dobson A. *Assessment of patient outcomes of rehabilitative care provided in inpatient rehabilitation facilities (IRFs) and after discharge*. Vienna, VA: Dobson DaVanzo & Associates, LLC;2014.
17. Hall RK, Toles M, Massing M, et al. Utilization of acute care among patients with ESRD discharged home from skilled nursing facilities. *Clinical journal of the American Society of Nephrology : CJASN*. 2015;10(3):428-434.
18. Stearns SC, Dalton K, Holmes GM, Seagrave SM. Using propensity stratification to compare patient outcomes in hospital-based versus freestanding skilled-nursing facilities. *Medical care research and review: MCRR*. 2006;63(5):599-622.
19. Wodchis WP, Teare GF, Naglie G, et al. Skilled nursing facility rehabilitation and discharge to home after stroke. *Archives of physical medicine and rehabilitation*. 2005;86(3):442-448.
20. Scheinhorn DJ, Hassenpflug MS, Votto JJ, et al. Post-ICU mechanical ventilation at 23 long-term care hospitals: a multicenter outcomes study. *Chest*. 2007;131(1):85-93.
21. Wolff JL, Meadow A, Weiss CO, Boyd CM, Leff B. Medicare home health patients' transitions through acute and post-acute care settings. *Medical care*. 2008;46(11):1188-1193.
22. Berkowitz RE, Jones RN, Rieder R, et al. Improving disposition outcomes for patients in a geriatric skilled nursing facility. *Journal of the American Geriatrics Society*. 2011;59(6):1130-1136.
23. Kushner DS, Peters KM, Johnson-Greene D. Evaluating use of the Siebens Domain Management Model during inpatient rehabilitation to increase functional independence and discharge rate to home in stroke patients. *PM&R: the journal of injury, function, and rehabilitation*. 2015;7(4):354-364.
24. NQF #2510: Skilled Nursing Facility 30-Day All-Cause Readmission Measure (SNFRM). www.qualityforum.org/QPS/2510
25. NQF #2502: All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Inpatient Rehabilitation Facilities. www.qualityforum.org/QPS/2502
26. NQF #2512: All-Cause Unplanned Readmission Measure for 30 Days Post Discharge from Long Term Care Hospitals. www.qualityforum.org/QPS/2512
27. NQF #2380: Rehospitalization During the First 30 Days of Home Health www.qualityforum.org/QPS/2380
28. NQF #1789: Hospital-Wide All-Cause Readmission Measure (HWR) (CMS/Yale). www.qualityforum.org/QPS/1789

**APPENDIX A:
PATIENT DISCHARGE STATUS CODES**

The Patient Discharge Status Code is used to indicate the status of the patient as of the claim through date.

Source: <http://www.resdac.org/cms-data/variables/patient-discharge-status-code>

Codes:

CODE	CODE DESCRIPTION
0	Unknown Value (but present in data)
01	Discharged to home/self care (routine discharge).
02	Discharged/transferred to other short term general hospital for inpatient care.
03	Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of covered skilled care -- (For hospitals with an approved swing bed arrangement, use Code 61 - swing bed. For reporting discharges/transfers to a non-certified SNF, the hospital must use Code 04 - ICF.
04	Discharged/transferred to intermediate care facility (ICF).
05	Discharged/transferred to another type of institution for inpatient care (including distinct parts). NOTE: Effective 1/2005, psychiatric hospital or psychiatric distinct part unit of a hospital will no longer be identified by this code. New code is '65'
06	Discharged/transferred to home care of organized home health service organization.
07	Left against medical advice or discontinued care.
08	Discharged/transferred to home under care of a home IV drug therapy provider. (discontinued effective 10/1/05)
09	Admitted as an inpatient to this hospital (effective 3/1/91). In situations where a patient is admitted before midnight of the third day following the day of an outpatient service, the outpatient services are considered inpatient.
20	Expired (did not recover - Christian Science patient).
21	Discharged/transferred to Court/Law Enforcement
30	Still patient
40	Expired at home (hospice claims only)
41	Expired in a medical facility such as hospital, SNF, ICF, or freestanding hospice. (Hospice claims only)

CODE	CODE DESCRIPTION
42	Expired - place unknown (Hospice claims only)
43	Discharged/transferred to a federal hospital (eff. 10/1/03)
50	Hospice - home (eff. 10/96)
51	Hospice - medical facility (eff. 10/96)
61	Discharged/transferred within this institution to a hospital-based Medicare approved swing bed (eff. 9/01)
62	Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital. (eff. 1/2002)
63	Discharged/transferred to a long term care hospitals. (eff. 1/2002)
64	Discharged/transferred to a nursing facility certified under Medicaid but not under Medicare (eff. 10/2002)
65	Discharged/Transferred to a psychiatric hospital or psychiatric distinct unit of a hospital (these types of hospitals were pulled from patient/discharge status code '05' and given their own code). (eff. 1/2005).
66	Discharged/transferred to a Critical Access Hospital (CAH) (eff. 1/1/06)
69	Discharged/transferred to a designated disaster alternative care site (eff. 10/2013)
70	Discharged/transferred to another type of health care institution not defined elsewhere in code list.
71	Discharged/transferred/referred to another institution for outpatient services as specified by the discharge plan of care (eff. 9/01) (discontinued effective 10/1/05)
72	Discharged/transferred/referred to this institution for outpatient services as specified by the discharge plan of care (eff. 9/01) (discontinued effective 10/1/05)
81	Discharged to home or self-care with a planned acute care hospital readmission (eff. 10/2013)
82	Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission (eff. 10/2013)
83	Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission (eff. 10/2013)

CODE	CODE DESCRIPTION
84	Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission (eff. 10/2013)
85	Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission (eff. 10/2013)
86	Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission (eff. 10/2013)
87	Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission (eff. 10/2013)
88	Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission (eff. 10/2013)
89	Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission (eff. 10/2013)
90	Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission (eff. 10/2013)
91	Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission (eff. 10/2103)
92	Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission (eff. 10/2013)
93	Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission (eff. 10/2013)
94	Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission (eff. 10/2013)
95	Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission (eff. 10/2013)