

The Discharge to Community Measure determines the percentage of all new admissions from a hospital who are discharged back to the community and remain out of any skilled nursing center for the next 30 days. The measure is based on MDS 3.0 data. This document describes how the Discharge to Community measure is calculated and how to interpret your results.

DATA DEFINITIONS

Discharge to Community Measure: the percentage of all new SNF admissions from a hospital who are discharged back to the community alive and remain out of a skilled nursing center for the next 30 days, based on MDS 3.0 data. The measure reported is based on a rolling 12-month average, updated quarterly.

The measure is calculated by:

$$\frac{\text{number of **Discharges to Community, defined as individuals who are discharged back to the community alive (i.e., private home, apartment, board/care, assisted living, or group home, as indicated on the MDS discharge assessment form) from a skilled nursing center within 100 days of admission and remain out of any skilled nursing center for at least 30 days**}}{\text{all **Post-Acute Admissions, defined as individuals, regardless of payor source, admitted from an acute hospital to the skilled nursing center over the prior 12 months who did not have a stay in any nursing center in the 100 days prior to this SNF admission.**}}$$

The numerator (Discharges to Community, as defined above) is based on MDS item “A2100 Discharge Status” being coded as “01 community”. The denominator (Post-Acute Admissions, as defined above) is based on MDS item “A1800 Entered From” being coded as “03 Acute Care Hospital”.

The following individuals are excluded from this measure:

- Anyone less than 55 years of age,
- Anyone with missing data for the “entered from” or “discharge status” MDS items (A1800 or A2100)
- Anyone with a stay in any nursing home for any reason during the 100 days prior to this admission
- Anyone with no available risk adjustment data (clinical and demographic characteristics listed in table below) on any MDS assessment within 18 days of SNF admission.

Individuals are NOT excluded from the measure if they have interruptions in their SNF stay (e.g. hospital admission) or changes in payor status. If they are readmitted to the same center following the event and discharged back to the community within 100 days of their initial admission to that center, they are counted in the Discharge to Community measure. Individuals who die are not counted as a discharge in the numerator, but are included in the denominator if they meet all of the other criteria defined above.

Actual Discharge to Community Rate: divide the total number of Discharges to Community from your center by the total number of Post-Acute Admissions to your center.

For example, a center (Brook Creek SNF) admitted 225 individuals from hospitals in the prior 12 months, but 25 of them had a prior nursing center stay within 100 days of admission. Therefore, the denominator is 200 (i.e., $225 - 25 = 200$). If 130 of these individuals were discharged back to the community, but 30 of them were readmitted to a skilled nursing center within 30 days following discharge, the numerator would be 100 (i.e., $130 - 30 = 100$). Therefore, the center’s actual Discharge to Community rate would be 50.0% (i.e., $100 \div 200 = 50.0\%$). This rate does not adjust for any of the clinical characteristics of the individuals in the center.

Expected Discharge to Community Rate: We use a logistic regression model (a statistical method that can adjust for multiple characteristics [e.g., age and gender] at the same time) to calculate the expected rate for each center. The model uses all the clinical and demographic characteristics listed in the table beginning on page 3 to calculate the average likelihood of each person being discharged back to the community, based on the Discharge to Community rate for individuals with a similar profile of characteristics in SNFs across the country.

For example, hypothetically, women who are older than 65, with dementia, diabetes, and on oxygen may have an average Discharge to Community rate of 25.6%. Meanwhile, men who are 65 or younger who need 2 person assist with ADLs and have a history of heart failure may have an average Discharge to Community rate of 74.4%.

Logistic regression calculates the likelihood of Discharge to Community for each person based on their profile and then sums up each individual's likelihood to create an expected Discharge to Community rate for the center, based on the profiles of all the individuals in the center who meet the criteria for inclusion in the measure described above.

If Brook Creek SNF, for example, has just two admissions, each with the characteristics described above (a woman older than 65 with an average likelihood of discharge of 25.6% and a man younger than 65 with average likelihood of 74.4%), the center's expected Discharge to Community rate would be 50.0% $[(25.6\% + 74.4\%) \div 2 = 50.0\%]$.

National Average: The national average is the sum of Discharges to the Community in the nation by the sum of all Post-Acute Admissions in the nation.

For example, assume there are only three centers in the country with 100, 200, and 300 Post-Acute Admissions respectively (600 total admissions) and 60, 120 and 180 Discharges to the Community, respectively (360 total discharges to the community). The national average would be 60.0% $(360 \div 600 = 60.0\%)$. This average national discharge to community rate is used when calculating a center's risk adjusted rate.

Risk-Adjusted Discharge to Community Rate: to obtain the risk-adjusted rate for any center, the actual rate is divided by the expected rate, which is then multiplied by the national average.

$$\frac{\text{Actual Rate}}{\text{Expected Rate}} \times \text{National Rate} = \text{Risk Adjusted Rate}$$

Data Source: MDS 3.0 data submitted to CMS over a 12 month period, using all admission assessments (either 5-day SNF PPS or 14-day OBRA Admission) for the denominator and the characteristics used in the risk adjustment. If an item needed is not available on the admission assessment, then it is taken from the next earliest MDS assessment, as long as it is within 18 days of admission. Data for the numerator comes from MDS 3.0 discharge assessments.

Data Completeness: AHCA checks to see if follow-up MDS data is available on all admissions. If discharge status data is routinely missing in a center, their Discharge to Community measure may not be accurate. We calculate a "completeness rate," which is the percentage of admission assessments that have a discharge, quarterly, annual or change of status assessment within 120 days of admission. Any admission record without one of these follow up assessments within 120 days is considered an incomplete record and is dropped from the calculation of the measure. The national average data completeness rate is 98.5%. The adjusted Discharge to Community rate is not reported for any center with a completeness rate less than 95%, since the measure may not be accurate or stable for those centers.

Minimum Sample Size: A center must have at least 30 people in the denominator (Post-Acute Admissions) in the 12 month period for their data to be reported.

HOW TO INTERPRET YOUR DATA

When your actual Discharge to Community rate is **equal** to your expected rate, that means you had the proportion of discharges to the community that was expected based on your case mix (i.e., the profile of people in your center) and the average rate across the country for a similar case mix. Therefore, your risk-adjusted rate will equal the national average.

When your actual Discharge to Community rate is **greater** than your expected rate, that means you had more discharges to the community than expected based on your case mix (i.e., the profile of people in your center) and the average rate across the country for a similar case mix. Therefore, your actual to expected ratio will be greater than 1.0, and your adjusted rate will be higher than the national average.

When your actual Discharge to Community rate is **less** than your expected rate, that means you had fewer discharges to the community than expected based on your case mix (i.e., the profile of people in your center) and the average rate across the country for a similar case mix. Therefore, your actual to expected ratio will be less than 1.0 and your adjusted rate will be lower than the national average.

CHARACTERISTICS USED IN RISK ADJUSTMENT

The measure is risk adjusted using 59 variables in six domains: demographic, functional status, prognosis, clinical conditions, clinical treatments, and clinical diagnoses (see table below). Only data available from the MDS are used in this model. When data are missing on the admission MDS assessment, information from the next available MDS of any type (except discharge) is used, as long as that MDS was completed within 18 days of admission to the center.

Initially, AHCA explored the relationship to being discharged back to the community of many more variables than those listed in the table below. All those that increased or decreased the likelihood of being discharged to the community were included in a logistic regression model. Those characteristics that continued to show an association independent of other characteristics in the model were retained, while those that did not have an independent statistical relationship were dropped. A measure of the prediction accuracy of the risk adjustment model (called the Receiver Operator Characteristics (ROC) curve) was very high, at 0.8147.

The final list of characteristics included in the model, along with their corresponding MDS item(s), is shown in the table below.

Characteristics Included in the Final Risk Adjustment Model of Discharge to Community Measure

Variable Description (with MDS item #)	
DEMOGRAPHICS	Age
	Gender (A0800)
	Marital Status (A1200)
FUNCTIONAL STATUS	Vision: grouped as adequate vs. impaired vs. moderately/highly/severely impaired (B1000)
	Makes self-understood: grouped as understood, usually understood, sometimes/rarely/never understood (B0700)
	Ability to understand: grouped as understands, usually understands, sometimes/rarely/never understands (B0800)
	Cognitive impairment based on BIMS scale grouped as— mild, – moderate, and severe, Staff assessed ¹ (C0500)
	Any Sign/Symptoms of Delirium (C1300A-D)

Variable Description (with MDS item #)	
	Major Depression (combined into a single item) According to CMS quality measure definition using MDS items (D0200A2, B2; D0300; D0500A2, B2; D0600)
	Behavior Codes (combined into a single item) for any yes on: Hallucination (E0100a) Delusion (E0100b) Physical Behavior (E0200a) Verbal Behavior (E0200b) Other Behavior (E0300c)
	Any Rejection of Care (E0800)
	Medicare RUG IV Hierarchical Group: Collapsed into 12 categories depending on levels of nursing and therapy ²
	Activities of Daily Living (each coded separately) ³ Bed mobility (G0110A1) Transfer (G0110B1) Walk in Corridor (G0110D1) Locomotion (G0110E1) Eating (G0110H1) Personal Hygiene (G0110J)
	ADL summary ⁴ : Combination of bed mobility, transfer, locomotion, dressing, eating, toilet use, and hygiene
	ADL*Cognitive impairment: Interaction term
	Bathing grouped as independent, supervised, physical help limited to transfer only, physical help in part of bathing activity, total dependence/activity did not occur (G0120)
	Balance (each coded separately) ⁵ Moving from seated to standing (G0300A) Walking (G0300B) Turning around and facing the opposite direction (G0300C) Moving on and off toilet (G0300D) Steady at all times Not steady, but able to stabilize without staff assistance Not steady, only able to stabilize with staff assistance Activity did not occur
	Urinary incontinence rated as Always continent/occasionally incontinent, frequently/always incontinent, not rated (catheter, ostomy, no urine output) (H0300)
	Bowel incontinence rated as Always continent/occasionally incontinent, frequently/always incontinent, not rated (ostomy, no bowel movement) (H0400)
PROGNOSIS	Any acute hospitalization within 30 days of admission (A2100)
	Special Treatments/Programs: Hospice Post-admit (O0100K2)
CLINICAL CONDITIONS	Shortness of Breath With Exertion (J1100A)
	Shortness of Breath When Sitting (J1100B)
	Shortness of Breath When Lying Flat (J1100C)
	Any Swallowing Disorder (K0100A-D)
	Weight loss (K0300)
	Pressure ulcer (M0300B1-D1)
	Wound Infection (I2500 Active Diagnoses)

Variable Description (with MDS item #)	
	Hemiplegia (I4900 Active Diagnoses)
	Paraplegia (I5000 Active Diagnoses)
CLINICAL TREATMENTS	Oxygen Post-admit (O0100C2)
	Tracheostomy Post-admit (O0100E2)
	Ventilator Post-admit (O0100F2)
	Dialysis Post-admit (O0100J2)
	Max # injections (N0300 or N0350a)
	Antipsychotic use (N0400a or N0410a)
CLINICAL DIAGNOSES	Anemia (I0200 Active Diagnoses)
	Heart Failure (CHF) (I0600 Active Diagnoses)
	Hypertension (I0700 Active Diagnoses)
	Pneumonia (I2000 Active Diagnoses)
	Septicemia (I2100 Active Diagnoses)
	Urinary Tract Infection (UTI) (I2300 Active Diagnoses)
	Viral Hepatitis (I2400 Active Diagnoses)
	Diabetes Mellitus (I2900 Active Diagnoses)
	Hyperkalemia (I3200 Active Diagnoses)
	Hyperlipidemia (I3300 Active Diagnoses)
	Hip Fracture (I3900 Active Diagnoses)
	Other Fracture (I4000 Active Diagnoses)
	Alzheimer's Disease (I4200 Active Diagnoses)
	Stroke (CVA or TIA or Stroke) (I4500 Active Diagnoses)
	Dementia (I4800 Active Diagnoses)
	Huntington's (I5250 Active Diagnoses)
	Malnutrition (I5600 Active Diagnoses)
	Anxiety Disorder (I5700 Active Diagnoses)
	Depression (I5800 Active Diagnoses)
	Manic Depression (I5900 Active Diagnoses)
Psychotic (I5950 Active Diagnoses)	
Schizophrenia (I6000 Active Diagnoses)	
Asthma, COPD, Chronic Lung Disease (I6200 Active Diagnoses)	

¹staff assessed means that the resident was not given a BIMS self-assessed score because they (a) chose not to participate in the BIMS, (b) 4 or more items were coded 0 because the resident chose not to answer or gave a nonsensical response, or (c) any of the BIMS items were coded with a dash.

² Medicare RUG IV Hierarchical Group: Collapsed into 12 categories depending on levels of nursing and therapy as follows (individual categories listed in TABLE 4—RUG-IV CASE-MIX ADJUSTED FEDERAL RATES AND ASSOCIATED INDEXES URBAN, p.46220 of Federal Register/ Vol. 77, No. 149 / Thursday, August 2, 2012):

Group1: low nursing, no therapy (CE2, CE1, CD2, CD1, CC2, CC1, CB2, CB1, CA2, CA1, BB2, BB1, BA2, BA1, PE2, PE1, PD2, PD1, PC2, PC1, PB2, PB1, PA2, PA1)

Group2: moderate/high nursing, no therapy (ES3, ES2, ES1, HE2, HE1, HD2, HD1, HC2, HC1, HB2, HB1, LE2, LE1, LD2, LD1, LC2, LC1, LB2, LB1)

Group3: very low nursing and therapy (RLA, RHA, RMA)

Group4: lower nursing, therapy, but have both (RHC, RHB, RMC, RMB, RLB)

Group5: moderate nursing, moderate/high therapy (RVA)

Group6: moderate nursing, moderate/high therapy (RVB)
Group7: moderate nursing, moderate/high therapy (RVC)
Group8: moderate nursing, moderate/high therapy (RUA)
Group9: moderate nursing, high therapy (RUB)
Group10: moderate nursing, high therapy (RUC)
Group11: high nursing, low therapy (RHX, RHL, RMX, RML, RLX)
Group12: high nursing, high therapy (RUX, RUL, RVX, RVL)

³ Activities of Daily Living (each coded separately). Each activity was coded 0 (independence); 1 (supervised), 2 (limited assistance); 3 (extensive assistance) or 4 (total dependence/only did activity once or twice/doesn't do activity). Responses were then dummied and entered as categorical variables into the model, using 'independence' as the reference group.

⁴ ADL summary: Response categories for each activity ranging from 0 to 4 were added together across 7 activities for a possible score ranging from 0 to 28.

⁵ Balance (each coded separately): Each category was coded from 0 (steady at all times) to 3 (activity did not occur). Responses were then dummied and entered as categorical variables into the model, using 'steady at all times' as the reference group.