The MDS 3.0 Rehospitalization Measure (PointRight® Pro 30™provided to AHCA by PointRight) is found on the LTC Trend Tracker report builder screen "AHCA Rehospitalization" report.

The summary below describes how the 30-day skilled nursing facility (SNF) risk-adjusted rehospitalization measure is calculated for each nursing center and how you can interpret your results. Note that all numbers and values used in this document are hypothetical and are for illustrative purposes only.

30-Day Risk-Adjusted SNF Rehospitalization Measure

Numerator: number of individuals sent back to any hospital (excluding ER only visits) from your center within 30 days of admission, as indicated on the MDS discharge assessment (discharge)

Denominator: all residents who were admitted from an acute hospital to your center and had an MDS admission assessment during the prior 12 months

Data Source: MDS 3.0 data submitted to CMS over a 12-month period, using admission assessments (either 5-day SNF PPS or the 14 day OBRA Admission assessment) for the denominator and risk adjustment information and discharge assessments for the numerator

Clinical characteristics included in the risk adjustment: 33 different demographic and clinical variables are included in the adjustment model (see Table 1 below). Some characteristics that may also be associated with an increased risk of rehospitalization are not contained in this list. That is because when combined with the listed characteristics, they do not add to the accuracy of the model. For example "continued use of oxygen" captures individuals with moderate to severe pulmonary diagnoses such as COPD, pulmonary hypertension, etc. These diagnoses are by themselves associated with increased risk of rehospitalization, but when combined with "continued use of oxygen," they do not add any additional risk or help to explain any more variation than is already captured.

Table 1. Characteristics Included in the Risk Adjustment

Demographic
- Age $\geq$65
- Male
- Medicare as Primary Payor

Functional Status
- Total Bowel Incontinence
- Eating Dependent
- Needs 2 person assistance in ADLs
- Cognitive impairment (Dementia)

Prognosis
- End Stage prognosis poor
- Recently rehospitalized
- History of respiratory failure
- Receiving Hospice Care

Clinical Condition
- Daily Pain
- Pressure Ulcer Stage (4 variables)
- Venous arterial ulcer
- Diabetic foot ulcer

Diagnoses
- Anemia
- Asthma
- Diabetes
- History of heart failure
- History of sepsis
- History of viral hepatitis
- History of internal bleeding

Services & Treatments
- Dialysis
- Insulin prescribed
- Ostomy Care
- Cancer chemotherapy
- Receiving radiation therapy
- Continue to receive IV medication
- Continue to receive oxygen
- Continued tracheostomy care

Actual rehospitalization rate: is calculated by dividing the number of individuals sent back to any acute care hospital within 30 days of admission to the center by the total number of admissions to the center from acute hospitals. For example, if a center (Brook Creek SNF) admitted 200 individuals to the center from hospitals in the prior 12 months and 50 of them returned to any acute care hospital within 30 days of admission, the center's actual rehospitalization rate would be 50 ÷ 200 = 25.0%. No adjustment is made for any patient characteristics.

Expected rehospitalization rate: logistic regression uses the characteristics listed in Table 1 to calculate the average risk of rehospitalization for patients with similar profiles across the country. For example, hypothetically, women who are >65, with dementia, diabetes, and on insulin and oxygen may have an average rehospitalization rate of 20.6% while men who are ≤65 with a pressure ulcer, who need 2 person assist with ADLs and have a history of sepsis and heart failure may have an average rehospitalization rate of 29.4%. Logistic regression calculates the risk of rehospitalization for each resident based on their risk profile and then sums together each individual's risk to create an expected rehospitalization risk for the center based on the profiles of all its residents. If Brook Creek SNF, for example, has just two residents, each with the clinical characteristics described above (a >65 y.o. women with an average risk of 20.6% and a <65 y.o. man with average risk of 29.4%), the center's expected rehospitalization rate would be (20.6% + 29.4%)/2 = 25.0%.

Risk adjustment method: we use logistic regression (a statistical method that can adjust for multiple clinical characteristics (e.g. age and gender) at the same time. To calculate a center's risk-adjusted rehospitalization rate, their actual rehospitalization rate is divided by their expected rehospitalization rate and the result is multiplied by the national average:

$$\left(\frac{\text{Actual Rehospitalization}}{\text{Expected rehospitalization}} \right) \times \frac{\text{National}}{\text{Average}} = \frac{\text{Risk}}{\text{Adjusted Rate}}$$

This is the same method used by CMS to calculate adjusted staffing for the Five Star rating as well as several of the Quality Measures on Nursing Home Compare. This method has been endorsed by the National Quality Forum (NQF) and is used to calculate the rehospitalization rate that CMS uses to assess payment penalties to hospitals.

Using the example above and a national rehospitalization rate of 18.2%, the adjusted rehospitalization rate for Brook Creek SNF would be 18.2%.

Actual rehospitalization rate ÷ expected rehospitalization rate = (25.0% ÷25.0%) X 18.2 = 18.2

NOTE:

- Using the above formula may not yield the same risk-adjusted rate reported in LTC Trend Tracker due to rounding of the values for your actual, expected, and national average reported in LTC Trend Tracker.

- Risk-adjusted rates are not reported for centers with < 30 admissions in the denominator

National average: The national average is calculated at the national level as the sum of all rehospitalizations divided by the sum of all admissions from hospitals during a calendar year. For example, assume there are only three centers in the country with 100, 200, and 300 admissions respectively (or 600 total admissions) and 10, 20 and 30 rehospitalizations respectively (or 60 total rehospitalizations). The national average would be 60/600 or 10.0%. This average rehospitalization rate is used in the formula above. For example, the second quarter 2012 actual to expected ratio will be multiplied by the 2011 national average. The 2012 national average will be used when the first quarter 2013 actual to expected ratio is reported.

How to Interpret Your Data

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

When your actual rehospitalization rate is *greater* than your expected rate, that means you had more rehospitalizations than expected based on your case mix (i.e., the profile of patients in your center) and the average rehospitalization 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 rehospitalization rate is *less* than your expected rate, that means you had fewer rehospitalizations than expected based on your case mix (i.e., the profile of patients in your center) and the average rehospitalization 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.

Data completeness: We also examine if data on final discharge status is available for all admissions. If discharge status data is routinely missing in a center, their rehospitalization rate may not be accurate. The completeness rate is calculated as the percentage of admission assessments that have either a discharge assessment or a quarterly, annual or change of status assessment within 120 days of admission. If a particular admission is missing a discharge or quarterly assessment within 120 days, that record is considered incomplete and is dropped from the measure. Overall, the average data completeness rate is 98.5%. The adjusted rehospitalization rate for a center is not reported if the completeness rate is < 95%, since the adjusted rate may not be sufficiently accurate or stable.