

Calculating Hospitalization Rates

Overview

- Tracking, trending, and benchmarking specific quality measures are fundamental to any quality improvement program.
- Unless clearly and consistently defined measures are used, it is not possible to benchmark or compare your measures with other facilities, or with state, regional, or national data.
- CMS is currently developing a quality measure and specifications for calculating 30-day readmission rates from SNFs, which will be submitted to NQF for review and approval early in 2013. The information below will be updated as needed in order to be consistent with the CMS-defined quality measure

This INTERACT tool is designed to provide **clear definitions** of several measures related to rates of hospital transfers, hospitalizations, and hospital readmissions that are **consistent with** evolving definitions used by CMS and other national organizations. In addition, the INTERACT Quality Improvement Program has two tools available to assist in calculating these measures:

1. The Acute Care Transfer Log is a paper and pencil tool that can assist in collecting data to track the basic measures outlined below.
2. The Hospitalization Rate Tracking Tool is an Excel workbook with formulae embedded in it that calculate rates for key measures. Facilities may input census data and information on transfers, and generate a variety of summary reports. Dropdown lists and other features facilitate logging admissions from hospitals and transfers to hospitals. A similar tool is available the Advancing Excellence Campaign in America's Nursing Homes at: www.nhqualitycampaign.org

Basic Hospitalization Rates

Four basic hospitalization rates can be calculated. As shown in the **Figure** below, 30-day readmission rates, which are receiving the most attention at present because of the financial penalties associated with them, are a subset of the overall unplanned hospitalization rate. In addition, two additional measures are important because of their potential for adverse effects on residents and families, as well as on the costs of care.

1. **Unplanned Hospitalization Rate:** Frequency of all-cause unplanned hospitalizations from the entire facility.
 - a. This rate includes only those residents who are admitted to the hospital on **inpatient status** (as opposed to observation status). If you are uncertain of the status, or if the resident is admitted initially under observation and changed to inpatient, they should count towards this rate.
 - b. Examples of **planned admissions** that should not be counted include a resident who is scheduled for a non-emergency surgical procedure or revision of a surgical procedure, blood transfusions, or chemotherapy.
 - c. The count has to be **adjusted for census** and the number of days in the month so that rates can be benchmarked and compared among facilities of different sizes.

Hospitalization rates are often expressed in terms of 1,000 resident days. Each day a resident spends in the nursing home contributes one resident day for the month. To calculate the total resident days in a month, multiply the average daily census (ADC) by the number of days in the month. To create the denominator for your transfer rates, multiply the ADC by the number of days in the month and then divided by 1000. This creates a useful metric, as illustrated by this example:

Example: A nursing home with an ADC of 100 will have 3000 resident days in a 30-day month. If that nursing home had 9 admissions during the month, the hospitalization rate would be 3 per 1000 resident days, or 3 admissions every 10 days.

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Calculating Hospitalization Rates (cont'd)

- 2. 30-Day Readmission Rate:** This rate is calculated by identifying individual residents admitted to the facility after an inpatient hospital stay during a given period of time, usually calculated on a monthly basis, and following them for 30 days.
- The denominator for this calculation is the number of residents admitted to the facility who have had an inpatient hospital stay during the month. The numerator is the number of inpatient hospitalizations among these residents that occur within 30-days of admission to your facility after an inpatient hospital stay.
 - Residents sometimes have two (or even more) 30-day readmissions in a 30 day period. Each admission after an inpatient stay should be counted in the denominator, and inpatient hospitalizations within 30-days of the most recent admission to the facility after an inpatient hospital stay should be counted in the numerator. Thus, one resident could contribute two or more times to the 30-day readmission rate.
 - The earliest you can calculate the readmission rate for a given month is 30 days after the end of the month, because a resident admitted on the last day of the month is at risk of a 30-day readmission for the 30 day period following admission.
 - There are some commonly asked questions about this calculation:
 - 1. What if the resident is discharged before their 30-day risk period is over?** As a practical matter, it is difficult for a facility to follow up to determine if a 30-day readmission occurred, so the rate can be contingent upon the resident being in the facility. However, the current version of the CMS definition for 30-day readmissions from SNFs does include the entire 30-day period of risk of readmission.
 - 2. What if the resident went home or was admitted to another SNF, LTAC, or other post-acute facility before being admitted to your facility?** This occurs in less than 10% of Medicare fee-for-service patients admitted to SNFs from hospitals. The current version of the CMS definition for 30-day readmissions from SNFs does include the entire 30-day period of risk of readmission after hospital discharge.
 - 3. What if the resident is readmitted, but to observation status?** They do not count in the numerator. Observation status is considered outpatient care by CMS, so these stays do not count as readmissions.
- Example: Your census in January was 110, in February 112, and in March 108. During these 3 months you had 66 admissions from your local hospital, and through April 30, you transferred a total of 40 residents to the hospital. Of these 40, one was directly readmitted for a planned revision of a colostomy, a second for a scheduled replacement of a displaced artificial hip, and one for monthly chemotherapy. Five residents were admitted into observation status. What was your 30-day readmission rate for this quarter? The answer is 33%. The denominator is 66. The numerator is 32 (40 minus the 3 residents with planned readmissions, and the five admitted into observation status).*
- 3. Emergency Room Visits Only:** This measure is the number of all-cause ER visits that do not result in an inpatient hospital admission or an observation stay, adjusted for the number of residents you have this month and the number of days in the month (as described above under **Unplanned Hospitalization Rate**).
- Emergency room visits are important because they cause discomfort and risk of adverse events for residents, may cause anxiety for the resident and family, create considerable work for your staff, and they are expensive.
 - Residents who die in the ambulance or in the ER should be counted in the numerator for this measure.

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Calculating Hospitalization Rates (cont'd)

- 4. Transfers Resulting in Observation Stays:** This measure is the number of transfers to the hospital that result in observation stays (that do not get changed to inpatient status), adjusted for the number of residents you have this month and the number of days in the month (as described above under Unplanned Hospitalization Rate).
- Observation stays are important because they cause discomfort and risk of adverse events for residents, are costly, and have financial implications for the resident, the nursing home, and the hospital.
 - From a quality improvement standpoint, observation stays are important when looking for potentially preventable transfers. By definition, residents who are admitted to observation status were not sick enough (at least initially) to be admitted to the hospital as an inpatient. Thus, it is useful to conduct root cause analyses on these transfers to determine, in retrospect, whether something could have been done to prevent the transfer. **The INTERACT Quality Improvement Tool** is designed for this purpose.

Additional Measures

Each of the rates defined above can be tracked and trended in different ways. For example, each rate can be calculated for the entire facility, and separately for post-acute unit(s) and long stay unit(s). When combined with data from the **Quality Improvement Tool**, a variety of additional measures can be tracked, such as reasons for transfer, time and day of the week or transfer, primary care clinician ordering the transfer, etc... for quality improvement purposes.

The Figure on the next page is from: Maslow, K and Ouslander, JG: Measurement of Potentially Preventable Hospitalizations. White Paper prepared for the Long Term Quality Alliance, 2012. Available at: www.ltqa.org

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All Acute Care Transfers

