



Sam Ho, M.D.,  
Chief Medical Officer  
UnitedHealthcare

5995 Plaza Drive  
CA112-0533  
Cypress, CA 90630

January 27, 2012

Janet M. Corrigan, PhD, MBA  
President and CEO  
National Quality Forum  
601 Thirteenth Street, NW  
Suite 500 North  
Washington DC 20005

RE: UnitedHealthcare Comments on NQF All-Cause Readmissions Expedited Review

Dear Janet,

Thank you for prioritizing the need and urgency to expedite the review of credible measures of hospital readmissions. I am writing to provide further context intended to supplement our responses on the National Quality Forum link [http://www.qualityforum.org/Comments\\_By\\_Project.aspx?projectID=98&ActivityID=312](http://www.qualityforum.org/Comments_By_Project.aspx?projectID=98&ActivityID=312), as well as provide a response to the discussion and questions raised at the December 5, 2011 Steering Committee meeting of the Patient Outcomes: All-Cause Readmissions Expedited Review Project co-chaired by Drs. Kaplan and Lazar. Specifically, I would like to address steering committee concerns about demonstrated scientific testing and risk-stratification of the proposed UHC measure as well as amplify our concerns about the recommended measures put forth by Yale/CMS and NCQA. I appreciate your thoughtful consideration of the items outlined below and would welcome further discussion.

The UHC proposal for all-cause, all-condition readmission rate utilizes the diagnosis and procedure information from the index admission to predict the likelihood of a resulting readmission. This is done by creating factors for over 170 index admission diagnosis and procedure category groups. The CMS proposal only discriminates on 5 clinical categories of index admission; they rely much more heavily on the prior 12 month clinical history of the member to generate their predictor. Our findings demonstrate that both methods produce approximately the same predictive results as shown by the comparable C-statistic in the attached documentation. However, the UHC method can be implemented at any level of aggregation (hospital, group practice, health plan, geography, etc...) and because it uses only information readily available on the index admission any provider can calculate their results for any time period. Therefore, this maximizes the transparency and utility of the UHC readmission measure. Conversely the CMS indicator can only be implemented by an entity with access to inpatient admissions, outpatient, and professional claims history for all members, such as CMS, a health plan, and potentially an ACO.

The all-cause, all-condition readmission rate accounts for 100% of all readmissions, which is best for patients as well as for physicians and hospitals to help them measure and manage their performance. There is no systematic method for determining that a readmission was planned. The UHC method adjusts for this explicitly by finely categorizing based on the index admission diagnosis and procedure. For example, the index admission category "Maintenance Chemotherapy" has an expected readmission rate of approximately 65%, more than 7 times higher than average. Using our model even cancer hospitals can compare their performance against their peers. However, if you explicitly exclude categories like "Maintenance Chemotherapy" which have high readmission rates you are withholding a quality improvement opportunity from those facilities providing these types of services, which may have results that deviate substantially from the norm. If the decision is made that because there is too much variability in any single diagnosis/procedure category when performing a specific measurement

those index admissions can be excluded at that time. In order to maximize opportunities for quality improvement and the management of population health, the measure selected should minimize the index admission explicit exclusions.

Over the past 17 years, this measure and its direct methodological precursor, NQF #0329, have been intentionally coupled with the risk-adjusted Average Length of Stay measure by UHC, since they counter-balance under and over-utilization, so that, together, they comprise an effective pair of measures that indicate appropriate inpatient utilization. For example, a hospital could lower readmit rates by simply keeping patients unnecessarily longer in the hospital during the index admission. UHC is the only measure developer that pairs the two important outcome measures together to ensure appropriate inpatient care utilization, and it supports NQF's policy that paired measures need to be developed and submitted by the same measure developer.

From a clinical management perspective, UHC has been using the original measure 0329 for many years as one of our foundational measures to improve the rate of appropriate inpatient utilization and have demonstrated a readmission reduction of approximately 7% in the Medicare Advantage population and of 3% in the commercial population. It is simply one of the most important measures we have of both quality and cost-effectiveness because it highlights quality defects in hospital discharges, post-hospital care coordination and subsequent readmissions. By improving discharge planning, patient education, transitional case management, coordination of care, and early access to ambulatory care follow-up, we have been able to improve the quality and appropriateness of care for thousands of patients. The other proposed measures with their extensive categorical exclusions, would substantially limit health plans and care providers from identifying at-risk members and, therefore, from delivering these benefits to as many of our members as possible.

We have incorporated the all-cause, all-condition readmission rate and the risk-adjusted average length of stay measure as cornerstone metrics in our value-based contracting framework to determine compensation for hospitals, large physician organizations/medical groups, and integrated delivery systems. This links our clinical management programs with provider incentive programs to align improved quality and cost outcomes on behalf of our membership. Furthermore, this integrated approach is also included in our value-based insurance design as well, since all-cause, all-condition readmission rates are a foundational metric to assess quality and cost-effectiveness of our provider network. Therefore, consumer incentives and benefit design are also based, in part, on the readmission rates of the providers selected in their benefit plan design.

I hope this has been helpful in clarifying the rationale for our submission and I am prepared to answer any further questions your staff or the committee may have in its review of this critical topic. Thank you for your consideration and I look forward to your reply.

Sincerely,



Sam Ho, M.D.

Chief Medical Officer

Attachment

Cc:

Sherrie Kaplan, PhD, MPH, Steering Committee Co-Chair, Readmissions Project

Eliot Lazar, MD, MBA, Steering Committee Co-Chair, Readmissions Project

Helen Burstin, MD, MPH, SVP Performance Measures, NQF

## **NQF Readmission Measure – Summary as of 1/18/2012**

### **Overview of Three Methods:**

#### ***UHC:***

The UHC method creates approximately 175 categories based on the condition of the stay and any procedures that are performed during the stay. For each of the age 0-64 and age 65+ populations the average readmission rate is calculated using UHC claims data. The readmission rate within each category for an age group is then divided by the overall readmission rate for the age group to come up with a readmission factor. A readmission factor of  $>1$  means that that particular category has a higher than average readmission rate while a factor of  $<1$  means that the particular category has a lower than average readmission rate. Using these scores an adjustment score can be created to normalize results when comparing across facilities, geographic regions, time or other measurement elements. To do so the average factor is calculated for the population in question and then the readmission rate for the population is divided by this factor to come up with the adjusted rate. By doing this for each population the condition mix of the two populations are controlled for and will not influence the comparison. This model does not incorporate any historical member specific information so it may be calculated using nothing more than the claims information for the admits being included in the measure and the reference table of factors published by UHC. As a result these measures can be calculated with a minimal delay after the end of the measurement period.

The only condition based exclusion used in the UHC model is the exclusion of members hospitalized for mental health disorders or substance abuse treatment.

#### ***Yale/CMS:***

The Yale/CMS model was built using Medicare FFS claims and has not been tested on a commercial population. The model is actually five different logistic regression models combined, one model for each of five different condition categories based on the condition of the discharge: surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology. For each of these five categories a logistic regression is run which ultimately results in an expected readmission rate based on patient level demographics and characteristics which include past inpatient claims history. The variables used in each of these five models are the same but the coefficients for each of the variables will vary between models. To create a hospital level result the results from each of the five models are combined in an average weighted by the number of admits the hospital has within each clinical category.

The following types of cases are excluded from the Yale/CMS model (reason for exclusion):

- Admissions for patients without 30 days of post-discharge data

- Admissions for patients lacking a complete enrollment history for the 12 months prior to admission (This is necessary to capture historical data for risk adjustment.)
- Admissions for patients discharged against medical advice (Hospital had limited opportunity to implement high quality care.)
- Admissions for patients to a PPS-exempt cancer hospital (These hospitals care for a unique population of patients that is challenging to compare to other hospitals.)
- Admissions for patients with medical treatment of cancer (These admissions have a very different mortality and readmission profile than the rest of the Medicare population, and outcomes for these admissions do not correlate well with outcomes for other admissions. Patients with cancer who are admitted for other diagnoses or for surgical treatment of their cancer remain in the measure.)
- Admissions for primary psychiatric disease (Patients admitted for psychiatric treatment are typically cared for in separate psychiatric or rehabilitation centers which are not comparable to acute care hospitals.)
- Admissions for “rehabilitation care; fitting of prostheses and adjustment devices” (These admissions are not for acute care or to acute care hospitals.)

Because of the complexity of the analysis required to create and generate results from the models the scores would not be available until 12-18 months after the end of the measurement period.

#### ***NCQA:***

NCQA built its model using commercial data for members 18-64 years old and Medicare data for members 65 or more years old. The model does not attempt to measure readmission at the facility level, but rather at the health plan level. The model is based on a logistic regression which includes the following elements: an age-gender cohort; an indicator of the presence of major surgery during the stay; the clinical condition of the discharge; the presence of various comorbid conditions in the member’s past 12 months of claim history. The NCQA does not exclude members who do not have 12 months of history, those members simply do not have a comorbid component to their risk score. The NCQA model does not attempt to exclude planned readmissions (though they are going to test the impact of excluding planned readmissions, using the Yale/CMS criteria, on the outcome of the model as part of the harmonization phase). The only condition based exclusions from the NCQA model are for pregnancy and perinatal based admissions. This model is currently in use as an element in the 2012 HEDIS measures.

#### **Approach to Comorbidities:**

Yale/CMS and NCQA methods both include approaches to adjust for comorbidities. The UHC method does not. Is the added cost and complexity of having to gather data on historical claims for the members who were admitted worth the added predictive value created by including those historical claims to the model? It is UHC’s contention that the Yale/CMS model and the NCQA model do not add enough in accuracy to overcome the

added cost and complexity inherent in adding historical member level information to those models.

**Approach to planned readmission exclusions:**

Yale/CMS (see 2a1.3):

The measure uses an algorithm to identify “planned readmissions” in claims data that will not count as readmissions in the measure. The algorithm is based on two main principles:

- 1- “Planned” readmissions are those in which one of a pre-specified list of procedures took place (which will be described in detail below), or those for maintenance chemotherapy, organ transplant, or rehabilitation.
- 2- Admissions for acute illness or for complications of care are not “planned.” Even a typically planned procedure performed during an admission for an acute illness would not likely have been planned. We can identify readmissions as acute or non-acute by considering the principal discharge condition.

The algorithm developed to identify planned readmissions uses procedure codes and discharge diagnosis categories for each readmission. The HWR measure defines planned readmissions as any readmission that was either:

A non-acute readmission in which one of 35 typically planned procedures occurs; or a readmission for maintenance chemotherapy, organ transplant, or rehabilitation.

NCQA: Planned readmissions are included

UHC: Planned readmissions are included

Comment:

Yale/CMS’s definition of a “planned readmission” boils down to a combination of diagnosis and procedure – the same method of categorization used in the UHC methodology. In the UHC methodology, these planned readmissions are not excluded, but rather segmented in their own category where those results can be compared between hospitals such that a facility that does a good job of avoiding readmits in a category with a high likelihood of having a planned readmission is rewarded.

**Comparative Accuracy of the 3 Methods:**

*C-Statistic of the various models:*

Yale/CMS:

Commercial: none provided

Medicare FFS Validation sample: 0.613-0.675

CPDD Sample : 0.661-0.725

NCQA:

Commercial (18-64 only): 0.730

Medicare and SNP (65+ only): 0.666

UHC:

Age 0-64 (commercial & Medicare): 0.753

Age 65+ (commercial & Medicare): 0.609

Comments:

All are roughly comparable with the UHC measure being better on the younger population (though Yale/CMS does not report a commercial measure) and the Yale/CMS and NCQA measured being better on an older population. Therefore the question becomes whether the added accuracy of the Yale/CMS and NCQA is worth the added complexity of their measures.

**Concerns with Yale/CMS and NCQA Recommended Method:**

CMS/Yale:

- Which data were used to test the commercial population? Was it representative of the nation?
- Requirement for 12 months of continuous enrollment to check for comorbidities – could there be something different about the readmit pattern of those who don't have continuous enrollment?
- Untimely data (1-2 years old at time of reporting) – by the time outcomes are measured, the real-time issues faced by the facility may be different.
- Method excludes planned readmissions - does this mean planned readmits are not in dataset to be used as index events for readmissions?
- Is this method overly complex such that a facility could not calculate it for themselves?
- Admits for behavioral health diagnoses are excluded – also a limitation of the UHC method.

NCQA:

- Outcome measure is reported at a health plan level, not hospital level.
- Pregnancy/Maternity cases are excluded - does this mean planned readmits are not in dataset to be used as index events for readmissions?

**Overall concerns:**

Without harmonization, the two recommended measures are sufficiently different from each other to cause confusion. From the meeting notes, it would appear that they have been offered a year to harmonize.

**Benefits of UHC Method:**

- Easy to understand and implement
- Requires no statistical software
- Timely - Allows for real time comparison
- Reporting at any level of aggregation

**Responses to the committee's rationale for non endorsement of UHC's measure:**

- *The measure had a very broad age range, 0 to 65.*

UHC would be happy to resubmit a revised version of its model (as Yale/CMS and NCQA were allowed to do) that includes more age granularity.

- *The measure did not have an appropriate risk adjustment or stratification approach.*

In their submission the authors of the Yale/CMS model note that “In theory, estimating a single model for each of the 285 condition categories would provide the best discrimination of readmission risk at the patient level. However, if we did so, many hospitals would not be included in most such models; for all but the most common discharge condition categories, many hospitals would not have an index admission in that category during a given year. In addition, most other hospitals would have only very small numbers of index admissions in each discharge condition category, meaning that the model would contribute very little to their overall measurement “ [2b4.2] What UHC has done is to create individual “models” for each of 175 condition & procedure categories, but these models do not include any variables other than the age group (0-64 and 65+). We feel that the added accuracy of having finely detailed condition & procedure categories outweighs the benefit in Yale’s model of looking at historical utilization for a member in a smaller number of categories. We have not seen any evidence that adding elements to adjust for risk beyond condition and procedure level actually add any predictive power to the model.

- *The developers did not include sufficient validity testing.*

UHC would be happy to resubmit further validity testing its model (as Yale/CMS and NCQA were allowed to do).

- *This measure does not adjust for any comorbidity.*

Adjusting for comorbidity is not a requirement of the model and no one has presented any evidence that adjusting for comorbidity adds sufficient predictive

power to a non-comorbidity adjusted model to account for the added cost in terms of ease of use and timeliness of results.