UnitedHealth Premium® Designation Program
Case-mix Adjusted Benchmarks with Severity or Risk Adjustment

Overview
For both the quality and cost efficiency measurements, the Premium program compares the physician’s performance to a case-mix adjusted benchmark. Case mix adjustment accounts for variations in the composition of the patients and cases each physician treats. The Premium program also uses severity adjustments for certain quality measures and patient episode cost measurement. The program uses risk adjustment for patient total cost measurement.

Quality
Case-mix Adjusted Benchmark
The benchmark used for quality measure comparison is defined as the case-mix adjusted expected quality measure compliance count. Some recommended interventions may be more or less difficult to accomplish. For example, patients with diabetes are likely to obtain retinal exams at a lower rate than they obtain hemoglobin A1c blood tests because retinal exams take greater effort. Similarly, the rate of adverse reactions to one class of medications might be different from the rate of adverse reactions to another medication. To establish the benchmark for each physician, the Premium program determines the expected compliance count for each measure by unique combinations of:

- Premium specialty
- Patient population
- Condition/procedure
- Severity level (surgical measures only)

The expected compliance count is calculated by multiplying the national compliance rate for each measure by the number of those measures attributed to the physician. Using the expected compliance count for each measure combination takes these patient variations into account.

Resources
- **Phone:** 866-270-5588
- **Website:** UnitedHealthcareOnline.com > Quick Links > UnitedHealth Premium
- **Email:** Use the “Contact Premium Program” tool found on “UnitedHealth Premium” web page
- **Mail:** UnitedHealthcare - UnitedHealth Premium Program – MN017-W700
  9700 Health Care Lane
  Minnetonka, MN 55343

This document should be used in conjunction with the UnitedHealth Premium® Designation Program Methodology document. It is important to review the entire document to understand the Premium program methodology.
Patient Population
A separate benchmark for each measure is established as applicable for the population of patients enrolled in each of the following health plans:

- UnitedHealthcare Commercial
- UnitedHealthcare Medicare Solutions
- UnitedHealthcare Community Plan

Condition/Procedure
A separate benchmark for each measure is established as applicable for each condition/procedure.

Medical Measures
Conditions for medical measures are defined using Symmetry® EBM Connect® (EBM). Conditions are the medical conditions, disease states, or preventive screening categories for which EBM measures have been created. Patients must satisfy certain criteria to be identified as having particular conditions. These criteria, which vary by condition, include: presence of diagnosis or procedure codes submitted on medical claims, patient demographics, etc.

Surgical Measures
Procedures for surgical measures are defined using Symmetry® Procedure Episode Groups® (PEG). Procedures are the major procedure performed, and sub-procedure if applicable. Procedures are further classified using 3M APR DRG (APR DRG) into unique APR DRG combinations (e.g., the Premium program combines some APR DRGs like chest pain and angina).

Severity Level
For surgical measures, severity level accounts for patient differences that might affect the expected compliance count for the measure independent of the actual treatment given. Surgical measures include outcome measures such as complications and redos and therefore it is necessary to account for patient severity. Medical measures do not require severity adjustment because these measures apply regardless of the severity of a patient’s condition. For example, medical evidence indicates that all patients with pharyngitis should be tested for group A streptococcus before antibiotic treatment regardless of the severity of their pharyngitis. In addition, many medical measures account for severity or coexisting conditions through specific clinical exclusions.

Refer to Severity Level – Surgical Episodes in the Cost Efficiency section of the Methodology for an explanation of how severity level is determined for surgical procedures.

Cost Efficiency
Case-mix Adjusted Benchmark
The benchmark used for cost efficiency comparison is defined as the case-mix adjusted expected sum of cost percentile ranks. To establish the benchmark for each physician, the Premium program puts patient episode costs and patient total costs into “treatment sets” by unique combinations of:

- Premium specialty
- Geographic area
- Condition/procedure (patient episode cost only)
- Inclusion of pharmacy cost
- Severity level (patient episode cost only)
- Risk level (patient total cost only)
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Using these comparable treatment sets to establish the benchmark accounts for variations in the composition of the patients and cases each physician treats. The treatment set characteristics vary by cost and/or episode type as shown in the following:

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<th>Characteristics</th>
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<th>Patient Total Cost</th>
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<td>By specialty (All Premium-eligible specialties)</td>
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<td><strong>Geographic Area</strong></td>
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<td><strong>Condition/Procedure</strong></td>
<td>Condition-based episode: Episode Treatment Group (ETG) base class and treatment indicator</td>
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<td><strong>Inclusion of Pharmacy Cost</strong></td>
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<td>Excluded</td>
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<td>By ETG severity level 1-4</td>
<td>By APR DRG severity level 1-4 (inpatient only)</td>
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</table>

**Geographic Area**
A separate benchmark for each measure is established as applicable for each geographic area.

Geographic areas are defined using Core Based Statistical Areas (CBSAs). CBSAs consist of the county or counties associated with at least one core urbanized area or urban cluster of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties associated with the core. Note: not all counties are assigned to a CBSA. In these cases, the county is the geographic area. CBSAs are well suited to economic and social analyses because they represent coherent, functional areas. They are typically large enough to capture the complexity and diversity of the relationships among individuals, households, firms and communities, but small enough to be distinct places.

**Condition/Procedure**
A separate benchmark for each measure is established as applicable for each condition/procedure.

**Medical Episodes**
Medical episodes are defined using Symmetry® Episode Treatment Groups® (ETG), which accounts for differences in patient severity, including variations in complicating conditions, comorbidities, and major surgeries. Conditions are defined using ETG units which differ from one another with respect to resource use. The ETG units used for patient episode cost measurement are condition (ETG base class) and treatment (ETG treatment indicator code which shows with or without surgery/active treatment).

**Surgical Episodes**
Surgical episodes are defined using Symmetry® Procedure Episode Groups® (PEG) anchor procedure, the major procedure performed, and sub-procedure if applicable. Surgical episodes are further classified using 3M™ APR DRG (APR DRG). The APR DRG Classification System assigns each patient a base class for the underlying condition. The patients grouped into each base class are similar in terms of both clinical characteristics and the hospital resources they use. The PEG units used for patient episode cost measurement are PEG anchor procedure and APR DRG rollup (e.g., the Premium program combines some APR DRGs like chest pain and angina).
Inclusion of Pharmacy Cost
Pharmacy cost is included for patient episode cost (medical episodes only) and patient total cost only when sufficient pharmacy claims information is available. When sufficient pharmacy claims information is not available, those episodes and patients are put into separate “without pharmacy” treatment sets. Partial pharmacy cost information, if any, is removed in these situations. Pharmacy costs are not used for surgical episodes.

Severity Level (Patient Episode Cost Only)
The healthcare services required to diagnose, manage and treat a clinical condition can vary significantly across episodes. This variation derives from a number of sources, including differences in the practice of medicine across providers, differences in the price paid for medical services and differences in the underlying clinical characteristics of an episode. Severity adjustments account for the aspect of the variation in cost that can be explained by an episode’s clinical characteristics. Specifically, the expected cost of an episode is based on clinical factors such as disease progression, comorbidities and other patient attributes that correlate with clinical need.

Medical Episodes
ETG is used to account for differences in medical episode severity by assigning a severity score to each episode. A higher severity score for an episode means a higher expected cost relative to other episodes of the same type. The severity score takes the following factors involved in the episode and gives them a weight:

- Patient age and gender (demographic weight)
- Comorbidities associated with the episode (comorbidity weight)
- Condition statuses (condition specificity, disease progression, etc.) associated with the episode (condition status weight)

These weights are episode-specific. For example, a 50 year old male with asthma and congestive heart failure may receive different demographic weights for those two episodes. The episode of asthma with a comorbidity of diabetes can have a different comorbidity weight than the episode of congestive heart failure that also has a comorbidity of diabetes. ETG has separate condition status and comorbidity weights for age 65 and older. The weights are added to produce the overall severity score for the episode.

Based on the severity score, a severity level of 1 to 4 is assigned to each specific episode. The severity level indicates a ranking of the specific episode relative to the population of all episodes of that same type. The value of 1 indicates a less severe episode and the value 4 indicates the most severe episode. The severity levels are determined by analyzing the distribution of episodes using a large nationally representative dataset.

Surgical Episodes
3M APR DRG is used to account for differences in inpatient surgical episode severity. There are four severity of illness levels: 1 - minor, 2 - moderate, 3 - major and 4 - extreme. The underlying clinical principle of APR DRGs is that the patient severity of illness is highly dependent on the patient’s underlying problem and that patients with high severity of illness are usually characterized by multiple serious diseases or illnesses. The assessment of severity is disease-specific. As a result, the significance attributed to complicating or comorbid conditions is dependent on the underlying problem. For example, certain types of infections are considered a more significant problem in a patient who is immunosuppressed than in a patient with a fractured arm. High severity of illness is primary determined by the interaction of multiple diseases.

To determine the patient severity of illness, APR DRG first determines the severity for each secondary diagnosis. Once the severity of each individual secondary diagnosis is established, APR DRG determines patient severity based on all of the patient’s secondary diagnoses. The final patient severity level is determined by incorporating the impact of primary diagnosis, age, operating room procedures, non-operating room procedures, multiple operating room procedures, and combinations of categories of secondary diagnoses. For example, a patient with acute choledocholithiasis (acute gallstone attack) as the highest secondary diagnosis may be considered a major severity of illness (level 3) since there is associated significant organ system dysfunction. If additional, more serious diagnoses are also present, patient severity of illness may increase. For example, if peritonitis is present along with the acute choledocholithiasis, the patient may be considered an extreme severity of illness (level 4).

Outpatient surgical episodes are assigned a severity level 1 because they tend to be the lower-severity procedures, or are performed on patients with a lower burden of illness.
Risk Level (Patient Total Cost Only)
The health care services required to diagnose, manage and treat clinical conditions can vary significantly across patients. This variation derives from a number of sources, including differences in the practice of medicine across providers, differences in the price paid for medical services and differences in the underlying clinical characteristics of a patient’s episodes. Patient risk defines that aspect of the variation in cost that can be explained by the clinical characteristics of a patient’s episodes. In particular, this risk is the expected health care costs or utilization of a patient.

Symmetry® Episode Risk Groups® (ERG) account for differences in patient risk using ETG episodes as markers of risk rather than the diagnoses from individual medical encounters. By using episodes, the focus is placed on the key information describing a patient’s underlying medical condition rather than the individual services provided in its treatment. Risk assessment techniques can vary depending on the characteristics of the patient population being measured. For patient total cost measurement, the models incorporated into ERG are designed for the under 65 commercial patient population. Separate models are developed for each Premium specialty for patients with and without pharmacy costs included to allow risk assessment to be performed using a consistent methodology across all similar patients.

The fundamental building blocks of ERG are a patient's ETG episodes of care which represent the unique occurrences of a medical condition or disease and the health care services involved in diagnosing and managing their treatment. The nature and mix of the included episodes provide a clinical profile for a patient that serve as a marker of his or her current need for medical care. Once the relevant patient episodes are identified (refer to the Patient Total Cost document for an explanation of which patient episodes are used for patient total cost measurement), the ERG risk score is calculated as follows:

1. **Translate ETGs to ERGs:** Episodes for each patient are further categorized into one of 189 ERGs. The ERGs are markers of patient risk and represent ETG episodes of similar clinical and risk characteristics.

2. **Generate ERG Profile:** The mix of ERGs provide a clinical profile for a patient. Patients can be assigned zero, one or more ERGs. Patients with multiple medical conditions would have multiple ERGs.

3. **Calculate ERG Risk Score:** Using predetermined weights for each Premium specialty based on the inclusion or exclusion of pharmacy costs, and the patient’s ERG profile, a risk score is computed. A patient’s risk score is the sum of the weights attached to each ERG observed in the patient’s ERG profile.

Based on the patient’s risk score, a patient’s risk level is determined which indicates a ranking of the patient relative to the population of all patients for the Premium specialty and pharmacy cost status. The number of levels varies by Premium specialty with a value of 1 indicating a lower risk patient. The risk level values are established by analyzing the distribution patient risk scores using a large nationally representative dataset.

Total costs for patients where the average cost (after risk-adjustment) was more than 1.5 times the weighted-average risk-adjusted cost for the Premium specialty are also removed. This is done to account for the impact of very low risk scores on risk-adjusted costs.

**Additional Removal of Low Outliers**
All remaining patient total costs (after risk-adjustment) are ordered from low to high within the treatment set and converted to percentiles. Patient total costs within the treatment set at or below the 2.5th percentile are removed.

**Additional Capping of High Outliers**
High cost outliers are further addressed by the use of percentiles to assess cost efficiency. Converting costs to a uniform scale effectively caps any remaining high outliers, since no cost can have a percentile greater than 99.9999.
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**Important notes about the UnitedHealth Premium® Physician Designation Program**

The information from the UnitedHealth Premium designation program is not an endorsement of a particular physician or health care professional’s suitability for the health care needs of any particular member. UnitedHealthcare does not practice medicine nor provide health care services. Physicians are solely responsible for medical judgments and treatments supplied. A Premium Care Physician or Quality Care Physician designation does not guarantee the quality of health care services members will receive from a physician and does not guarantee the outcome of any health care services members will receive.

Likewise, the fact that a physician has a Quality Not Evaluated or a Does Not Meet Quality designation does not mean that the physician does not provide quality health care services. All physicians in the UnitedHealthcare Network have met certain minimum credentialing requirements. Regardless of whether a physician has received a Premium Care Physician designation, members have access to all physicians in the UnitedHealthcare Network, as described under the member’s benefit plan.

The designation of “Quality Not Evaluated” is given when a physician does not practice in a specialty that is evaluated by the Premium program. It is also given when a physician does not have enough health plan claims data to be evaluated, but it is not an indicator of the total number of patients treated by the physician or the number of procedures performed by the physician. Rather, it reflects the statistical requirements of the Premium program, which includes only health plan claims associated with specific Premium program measures and relevant to the physician’s specialty. In some cases, there may not be enough data to complete the analytic process from a statistical standpoint.

UnitedHealthcare informs members that designations are intended only as a guide when choosing a physician and should not be the sole factor in selecting a physician. As with all programs that evaluate performance based on analysis of a sample, there is a risk of error. There is a risk of error in the claims data used in the assessment, the calculations used in the assessment, and the way the Premium program determined that an individual physician was responsible for the treatment of the patient’s condition. **Physicians have the opportunity to review this data and submit a reconsideration request.** UnitedHealthcare uses statistical testing to compare a physician’s results to expected or normative results. There is a risk of error in statistical tests when applied to the data and a result based on statistical testing is not a guarantee of correct inference or classification. **We also inform our members that they may wish to discuss designations with a physician before choosing him or her, or confer with their current physician for advice on selecting other physicians.**

Employers may also choose to offer their employees a tiered benefit plan, which may offer an enhanced benefit in the form of lower member cost share for using Premium Care Physicians.

The information contained in this Case Mix, Severity and Risk Adjustment document is subject to change.