UnitedHealth Premium
Efficient quality care evaluation example

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Overview

Premium uses a 5-step process to evaluate the physician's efficient quality care performance.

1	2	3	4	5
Count patients or episodes	**Establish minimum score benchmark**	**Determine performance**	**Calculate score**	**Determine evaluation result**

We've provided an example for a fictional Dr. Smith to help you understand how each step in the process works.

Step 1: Count patients or episodes

A. Put patient annual costs or patient episode costs into treatment sets according to the same type of patients or episodes.

B. Count the total number of patients or episodes attributed to the physician. A minimum of 10 patients or episodes is required.

In this example, Dr. Smith has 5 attributed patients out of 13 total patients representing 2 treatment sets.

For illustrative purposes, this example contains fewer than the required minimum number of patients.

Treatment set 1	
Premium specialty	Cardiology
Patient population	Commercial
Product/network	Choice Plus
Geographic area	Columbus, Ohio
Inclusion of pharmacy cost	Not included
Risk level	1
Patients (ranks) attributed to Dr. Smith	2
Total patients (ranks) in treatment set	6

Treatment set 2	
Premium specialty	Cardiology
Patient population	Medicare
Product/network	Medicare Advantage
Geographic area	Columbus, Ohio
Inclusion of pharmacy cost	Included
Risk level	3
Patients (ranks) attributed to Dr. Smith	3
Total patients (ranks) in treatment set	7

Step 2: Establish minimum score benchmark

Establish the minimum score benchmark at the 75th percentile.

A Calculate the median rank.
Formula: Median rank = (number of total ranks + 1)/2.
In this example, the median rank is (6 + 7 + 1)/2 = 7.

B Calculate the expected sum of ranks.
Formula: Expected sum of ranks = median rank * physician ranks.
In this example, the expected sum of ranks is 7 *(2 + 3) = 35.

C Calculate the standard deviation (SD).
Formula: SD = √ (((physician ranks * (total ranks – physician ranks)) * (median rank * 2))/12).
In this example, the SD is √ (((5 *(13 – 5) * (7 * 2))/12) = 6.8313.

D Calculate the minimum score benchmark by adding the applicable proportion of a SD to the expected sum of ranks.
Formula: Minimum score benchmark = expected sum of ranks + (SD coefficient for 75th percentile * SD).
In this example, the minimum score benchmark is 35 + (0.6745 * 6.8313) = 39.61.

Step 3: Determine performance

A Calculate the expected cost for each treatment set, including those where the physician does not have an attributed patient or episode. This is done by capping the costs within the treatment sets at the 95th percentile (for patient annual cost, this is done using unadjusted costs). Costs are summed and divided by the number of patients or episodes within the treatment set.

In this example, **treatment set 1** has an expected cost of:
($1,500 + 600 + 1,700 + 1,000 + 500 + 700)/6 = $1,000.
Treatment set 2 has an expected cost of**:**
($2,000 + 2,300 + 2,500 + 3,400 + 900 + 1,300 + 1,600)/7 = $2,000.

Treatment set 1		
Patient	**Attributed physician**	**Unadjusted capped cost**
Patient 1	Physician 1	$1,500
Patient 2	Physician 2	$600
Patient 3	Physician 2	$1,700
Patient 4	Physician 3	$1,000
Patient 5	Dr. Smith	$500
Patient 6	Dr. Smith	$700
Expected cost		**$1,000**

Treatment set 2		
Patient	**Attributed physician**	**Unadjusted capped cost**
Patient 7	Physician 1	$2,000
Patient 8	Physician 2	$2,300
Patient 9	Physician 3	$2,500
Patient 10	Physician 4	$3,400
Patient 11	Dr. Smith	$900
Patient 12	Dr. Smith	$1,300
Patient 13	Dr. Smith	$1,600
Expected cost		**$2,000**

B Determine treatment set weight. Identify the treatment set with the lowest expected cost irrespective of Premium specialty, patient population, product/network and geographic area. This treatment set receives a weight of 1. All other treatment sets receive a weight, rounded to the nearest whole number, equal to the treatment set's expected cost divided by the expected cost of the lowest cost treatment set.

In this example, treatment set 1 has the lowest expected cost and receives a weight of 1. Treatment set 2 receives a weight of $2,000/1,000 = 2.

C Convert costs to percentiles.

i. For each treatment set with a weight greater than 1, duplicate the costs by the number of times equal to the treatment set's weight.

ii. Order the costs from low to high.

iii. Convert costs to percentiles.
Formula: Cost percentile = 1/(N+1) with N representing the total patient ranks in the treatment set.

In this example, the ordered costs and cost percentiles are shown in the following table.

Treatment set 1			
Patient	**Attributed physician**	**Cost**	**Cost percentile**
Weight = 1			
Patient 5	**Dr. Smith**	**$500**	**14.3**
Patient 2	Physician 2	$600	28.6
Patient 6	**Dr. Smith**	**$700**	**42.9**
Patient 4	Physician 3	$1,000	57.2
Patient 1	Physician 1	$1,500	71.4
Patient 3	Physician 2	$1,700	85.7

Treatment set 2			
Patient	**Attributed physician**	**Cost**	**Cost percentile**
Weight = 2			
Patient 11	**Dr. Smith**	**$900**	**12.5**
Patient 11 (duplicated)	**Dr. Smith**	**$900**	**12.5**
Patient 12	**Dr. Smith**	**$1,300**	**25.0**
Patient 12 (duplicated)	**Dr. Smith**	**$1,300**	**25.0**
Patient 13	**Dr. Smith**	**$1,600**	**37.5**
Patient 13 (duplicated)	**Dr. Smith**	**$1,600**	**37.5**
Patient 7	Physician 1	$2,000	50.0
Patient 7 (duplicated)	Physician 1	$2,000	50.0
Patient 8	Physician 2	$2,300	62.5
Patient 8 (duplicated)	Physician 2	$2,300	62.5
Patient 9	Physician 3	$2,500	75.0
Patient 9 (duplicated)	Physician 3	$2,500	75.0
Patient 10	Physician 4	$3,400	87.5
Patient 10 (duplicated)	Physician 4	$3,400	87.5

Premium uses normalized costs for the efficient quality care evaluation. Normalized cost is a standardized fee schedule designed to assign uniform, consistent, nationally based costs to service lines to remove inherent unit cost variation. For illustrative purposes, this example uses the same costs pre- and post-adjustment.

D Assign a rank to each cost percentile.

i. Combine the cost percentiles from both weighted treatment sets to create the physician's combined weighted treatment set. The combined weighted treatment set contains the cost percentiles for the physician as well as his/her peers.

ii. Order the cost percentiles from low to high.

iii. Assign a rank from 1 (lowest) to N (highest). For costs with the same percentile, the rank is the average of the ordinal ranks divided by the number of items with the same percentile.

In this example, the ordered cost percentiles, ordinal ranks and assigned ranks are shown in the following table.

Dr. Smith's combined weighted treatment set					
Patient	**Attributed physician**	**Treatment set 1 cost percentile**	**Treatment set 2 cost percentile**	**Ordinal rank**	**Assigned rank**
Patient 11	**Dr. Smith**		**12.5**	**1**	**1.5**
Patient 11 (duplicated)	**Dr. Smith**		**12.5**	**2**	**1.5**
Patient 5	**Dr. Smith**	**14.3**		**3**	**3**
Patient 12	**Dr. Smith**		**25.0**	**4**	**4.5**
Patient 12 (duplicated)	**Dr. Smith**		**25.0**	**5**	**4.5**
Patient 2	Physician 2	28.6		6	6
Patient 13	**Dr. Smith**		**37.5**	**7**	**7.5**
Patient 13 (duplicated)	**Dr. Smith**		**37.5**	**8**	**7.5**
Patient 6	**Dr. Smith**	**42.9**		**9**	**9**
Patient 7	Physician 1		50.0	10	10.5
Patient 7 (duplicated)	Physician 1		50.0	11	10.5
Patient 4	Physician 3	57.2		12	12
Patient 8	Physician 2		62.5	13	13.5
Patient 8 (duplicated)	Physician 2		62.5	14	13.5
Patient 1	Physician 1	71.4		15	15
Patient 9	Physician 3		75.0	16	16.5
Patient 9 (duplicated)	Physician 3		75.0	17	16.5
Patient 3	Physician 2	85.7		18	18
Patient 10	Physician 4		87.5	19	19.5
Patient 10 (duplicated)	Physician 4		87.5	20	19.5

E Sum the physician's assigned ranks in the combined treatment set.

In this example, Dr. Smith's sum of ranks is 1.5 + 1.5 + 3 + 4.5 + 4.5 + 7.5 + 7.5 + 9 = 39.

F Create the adjustment factor. The adjustment factor back-transforms the physicians' sum of ranks to the original confidence intervals.

i. Calculate the median rank for the combined weighted treatment set.
Formula: Median rank = (number of total ranks + 1)/2.
In this example, the median rank is (20 +1)/2 = 10.5.

ii. Calculate the expected sum of ranks for the combined weighted treatment set.
Formula: Expected sum of ranks = median rank * physician ranks.
In this example, the expected sum of ranks is 10.5 * 8 = 84.

iii. Calculate the standard deviation (SD) for the combined weighted treatment set.
Formula: SD = √ (((physician ranks * (total ranks − physician ranks)) * (median rank * 2))/12).
In this example, the SD is √ (((8 * (20 − 8)) * (10.5 * 2))/12) = 12.9615.

iv. Adjust the expected sum of ranks for the combined weighted treatment set to the 75th percentile by adding the applicable proportion of a SD to the expected sum of ranks.
Formula: Adjusted sum of ranks = expected sum of ranks + (SD coefficient for 75th percentile level * SD).
In this example, the adjusted sum of ranks at the 75th percentile for the combined weighted treatment set is 84 + (0.6745 * 12.9615 from step F iii above) = 92.74.

v. Calculate the adjustment factor.
Formula: Adjustment factor = minimum score benchmark/adjusted sum of ranks.
In this example the adjustment factor is 39.61/92.74 = 0.4271.

G Determine performance.
Formula: Performance = sum of ranks * adjustment factor.
In this example, Dr. Smith's performance is 39 * 0.4271 = 16.7.

Step 4: Calculate score

Physicians whose performance is not statistically different than the minimum score benchmark receive an efficient quality care score of 25. Physicians whose performance is statistically different than the minimum score benchmark receive the score corresponding to the lowest or highest percentile level at which the physician's performance is statistically lower or higher than the adjusted sum of ranks at that level.

A Calculate the adjusted expected sum of ranks for each percentile from 5 to 95 (from column I in the grid on the following page) by adding the applicable proportion of a SD to the expected sum of ranks at the 50th percentile.
Formula: Adjusted expected sum of ranks = expected sum of ranks + (SD coefficient for percentile level * SD).
In this example, 35 from step 2B + (coefficient from column II in the grid on the following page* 6.8313 from step 2C) = column III in the grid on the following page.

B Determine if performance is statistically different than the adjusted expected sum of ranks with 90% confidence by calculating the z-score.
Formula: Z-score = (performance – adjusted expected sum of ranks)/SD.
In this example, (16.7 from step 3G – value from column III in the following grid)/6.8313 from step 2C = column IV in the following grid.

Performance is statistically different than the adjusted expected sum of ranks when the z-score is greater than 1.2816 (statistically higher) or less than -1.2816 (statistically lower).

In this example, the lowest percentile at which Dr. Smith's performance is statistically lower than the adjusted expected sum of ranks is 10. Therefore, Dr. Smith's efficient quality care score (from column V below) = 95.

Dr. Smith's combined weighted treatment set				
I	**II**	**III**	**IV**	**V**
Percentile	**Proportional SD coefficient**	**Adjusted expected sum of ranks**	**Dr. Smith's z-score**	**Total cost of care score**
5	-1.6449	23.76	-1.0335	100
10	-1.2816	26.25	-1.3980	95
15	-1.0364	27.92	-1.6424	90
20	-0.8416	29.25	-1.8371	85
25	-0.6745	30.39	-2.0040	80
30	-0.5244	31.42	-2.1548	75
35	-0.3853	32.37	-2.2939	70
40	-0.2533	33.27	-2.4256	65
45	-0.1257	34.14	-2.5530	60
50	0	35.00	-2.6788	55
55	0.1257	35.86	-2.8047	50
60	0.2533	36.73	-2.9321	45
65	0.3853	37.63	-3.0638	40
70	0.5244	38.58	-3.2029	35
75	0.6745	39.61	-3.3537	20 or 25 or 30[1]
80	0.8416	40.75	-3.5206	15
85	1.0364	42.08	-3.7153	10
90	1.2816	43.75	-3.9597	5
95	1.6449	46.24	-4.3242	0

[1]If performance is not statistically different than the 75th percentile, the score is 25. If 75th percentile is the lowest level at which performance is statistically lower, the score is 30. If 75th percentile is the highest level at which performance is statistically higher, the score is 20.

Step 5: Determine evaluation result

The physician meets the efficient quality care criteria when the physician's score is 25 or higher.

In this example, Dr. Smith's score is 95. Therefore, Dr. Smith's evaluation result is "Meets Criteria."

Important notes about UnitedHealth Premium

The information from UnitedHealth Premium is not an endorsement of a particular physician or health care professional's suitability for the health care needs of any member. UnitedHealthcare does not practice medicine nor provide health care services. Physicians are solely responsible for medical judgments and treatments.

A Premium Care Physician designation does not guarantee the quality or the outcome of any health care services members receive. The fact that a physician does not have a Premium Care Physician designation does not mean 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 in the member's benefit plan.

There are various reasons why a physician may not be designated as a Premium Care Physician. A physician may not receive a designation because that physician has not been evaluated. This occurs when a physician does not practice in a specialty or market that is evaluated by Premium, or the physician's evaluation is in process. This also occurs when there are not enough measures, patients, and or episodes attributed to the physician for evaluation. This is not an indicator of the total number of patients treated by the physician, or the number of procedures performed by the physician.

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. Members are encouraged to discuss designations with a physician before choosing them or consult with their current physician(s) for advice on selecting other physicians.

As with all programs that evaluate performance based on evaluation of a sample, there is a risk of error. There is a risk of error in the claims data used and in the way patient care is attributed to physicians. UnitedHealth Premium uses statistical testing to compare a physician's performance to benchmarks. 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. Physicians have the opportunity to review the data and evaluation results and may submit requests for changes and or corrections.

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