

KIDNEY CARE QUALITY ALLIANCE

KCQA POST-DIALYSIS WEIGHT ABOVE OR BELOW TARGET WEIGHT MEASURE CALCULATION ALGORITHM

Data are collected and scores for each facility are calculated on a monthly basis; scores are then averaged over the 12-month reporting period to obtain the facility's annual score.

Scores are calculated using the following algorithm:

1. Build the *"Month 1 Raw Denominator Population"*

For the Month 1 calculation period*, identify all patients in the facility during the reporting month whose:

- a. *Primary Type Treatment/Modality* (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis
- b. *Primary/Current Dialysis Setting* (RQMT _791, _1355, and/or _1414) = In-center
- c. *Date of Birth* (RQMT_1310) = ≥ 18 years prior to treatment date

* The calculation period is defined as the same week that the monthly Kt/V is drawn. If more than one Kt/V is drawn in a given month, the last draw for the month will be used to define the data collection period (i.e., these data elements will be collected during the week that the final Kt/V value of the month is drawn).

2. Remove patients with exclusions to define the *"Month 1 Final Denominator Population"*

For all patients meeting all of the Step 1 requirements, identify all patients meeting any of the following exclusion criteria and remove from the denominator population:

- a. *Date Patient Started Chronic Dialysis at Current Facility* (RQMT_1360) = ≥ 30 days prior to treatment date
- b. *Transient Status* (RQMT_356) = Not transient OR patients with < 7 hemodialysis treatments in the facility during the month.
- c. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month
- d. Kidney transplant recipients with a functioning graft

3. Identify the *"Month 1 Numerator Data Elements"*

For all patients remaining in the denominator after Step 2, collect each of the following data elements for each dialysis session (including supplemental sessions) delivered during the Month 1 calculation period:

- a. *Post-Dialysis Target Weight for Session* (RQMT_1052)
- b. *Post-Dialysis Weight for Session* (RQMT_1323)
- c. *Session Date*

4. Build the “Month 1 Numerator Population”:

For each patient, for all dialysis sessions included in the final Month 1 *Numerator Data Set*:

- a. Calculate the difference between the patient’s post-dialysis weight and prescribed target weight for each dialysis session (including supplemental sessions) included in the Month 1 *Numerator Data Set*:

Patient’s Post-Dialysis and Prescribed Target Weight Difference for Session =
Session X Post-Dialysis Weight – Session X Prescribed Target Weight

- b. Take the sum of the differences calculated in 4.a.:

Sum of Patient’s Post-Dialysis and Prescribed Target Weight Differences =
Session 1 Difference + Session 2 Difference +..... + Session Y Difference

- c. Divide the value obtained in 4.b. by the patient’s number of sessions (including supplemental sessions) in the Month 1 calculation period to find the patient’s average weight difference:

Patient’s Average Post-Dialysis and Target Weight Difference = Sum of Patient’s
Post-Dialysis and Prescribed Target Weight Differences ÷ Number of Patient’s
Dialysis Sessions in Calculation Period

- d. For each facility, include in the Month 1 numerator all patients whose average dialysis session post-dialysis and target weight difference (4.c. value) was **+/- ≥1 kg**.

5. Calculate the facility’s Month 1 performance score:

Month 1 Performance Score = Month 1 Numerator Population ÷ Month 1 Denominator Population

6. Repeat Steps 1 through 5 for each of the remaining 11 months of the reporting year.

7. Calculate the facility’s annual performance score:

Facility’s Average Annual Performance Score = (Facility’s Month 1 Score + Month 2 Score +..... + Month 12 Score) ÷ 12

KCQA MEASURE SPECIFICATIONS TABLE:
POST-DIALYSIS WEIGHT ABOVE OR BELOW TARGET WEIGHT

MEASURE TITLE	DESCRIPTION	NUMERATOR	DENOMINATOR	EXCLUSIONS
Post-Dialysis Weight Above or Below Target Weight	Percentage of patients with an average post-dialysis weight ≥ 1 kg above or below the prescribed target weight.	<p>Number of patients¹ from the denominator with an average post-dialysis weight ≥ 1 kg above or below the prescribed target weight during the calculation period.</p> <p>Interpretation of Score: Lower score = better quality</p> <p>Additional Information: The average post-dialysis and prescribed target weight difference is calculated for the treatments received in the calculation period. The calculation period is defined as the same week that the monthly Kt/V is drawn.</p>	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.	<ol style="list-style-type: none">1. Patients <18 years of age.2. Home dialysis patients.3. Patients in a facility <30 days.4. Patients with <7 hemodialysis treatments in the facility during the reporting month.5. Patients without a completed CMS Medical Evidence Form (Form CMS-2728).6. Kidney transplant recipients with a functioning graft.7. Facilities treating <XX adult in-center hemodialysis patients during the reporting period.²

¹ To address the fact that patients may contribute varying amounts of time to the annual denominator population, results are reported using a “patient-month” construction.

² KCQA agreed to determine the appropriate minimum number of patients empirically during testing; this work is ongoing and will be reported when available.

KCQA TESTING DATA ATTACHMENT POST-DIALYSIS WEIGHT ABOVE OR BELOW TARGET WEIGHT

This document provides tables containing the data generated by the three participating dialysis organizations during testing of the KCQA performance measure, *Post-Dialysis Weight Above or Below Target Weight*. To preserve anonymity, data are presented as coming from Organization A, B, and C. This nomenclature is random and is scrambled throughout the measure submission documents such that Organization A in one section might become Organization B or C in another section. The information in these tables pertains to all sessions each month.

Table 1: Facility Information by Organization

ORGANIZATION	NUMBER OF FACILITIES INCLUDED IN TESTING	RANGE OF FACILITY SIZES (I.E., NUMBER OF PATIENTS AT FACILITY)	MEAN FACILITY SIZE
A	212	1-188	54.81
B	1,993	1-664	113.91
C	2,047	1-487	64.25
TOTALS	4,252	1-664	84.11

Nine facilities operating in 2013 were excluded:

COUNT	REASON
1	Had only one adult patient in 2013
1	Had on average one patient per month in 2013
1	Had one patient during two months in 2013
1	Was organization clinic only during once month in 2013
5	All patients received <7 treatments in any given month in 2013

Table 2: Patient Information by Dialysis Organization (across all months of testing)

ORG.	TOTAL NUMBER OF PATIENTS IN TESTING	RANGE OF PATIENT AGES	MEAN PATIENT AGE	PERCENT MALE	PERCENT FEMALE	PERCENT WHITE	PERCENT BLACK/AFRICAN AMERICAN	PERCENT HISPANIC (independent of race)	PERCENT AMERICAN INDIAN/ALASKA NATIVE	PERCENT ASIAN	PERCENT NATIVE HAWAIIAN / OTHER PACIFIC ISLANDER	PERCENT OTHER/DECLINE TO STATE/MISSING
A		18.01-84.93	62.24	56.30	43.70	59.58	36.24	14.30	0.87	1.93	0.42	0.96
B		18.01-100.01	61.90	56.27	43.73	47.25	43.59	6.73	2.39	2.21	0.29	2.79

C		18.01-104.00	61.15	56.25	43.75	38.31	35.89	17.32	1.32	3.62	0.91	0.09
TOTAL	412,522	18.01-104.00	61.66	56.26	43.74	52.37	36.33	15.60	1.16	2.82	0.67	0.57

Table 3: Information on Missing Data (monthly and annual counts, across all facilities, by dialysis organization)

All facilities remained in the analysis, regardless of the magnitude of missing data; however, participating dialysis organizations were instructed to remove individual dialysis sessions from the analysis with any missing data elements:

		DIALYSIS SESSIONS EXCLUDED ACROSS ALL FACILITIES (TOTAL NUMBER / AVERAGE PER FACILITY / FACILITY RANGES)												TOTAL
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Missing/incomplete data	Org. A	T=1,984 A=9.36 R=(0-323)	1,679 7.92 (0-288)	1,853 8.74 (0-209)	1,701 8.02 (0-152)	3,572 16.85 (0-214)	1,437 6.78 (0-113)	1,554 7.33 (0-146)	1,638 7.73 (0-156)	1,517 7.16 (0-136)	1,580 7.45 (0-136)	1,629 7.68 (0-186)	1,518 7.16 (0-187)	T=21,662 A=102.18
	B	2,969 1.49 (0-19)	2,372 1.19 (0-6)	2,790 1.40 (0-8)	2,950 1.48 (0-9)	2,870 1.44 (0-10)	2,910 1.46 (0-15)	3,169 1.59 (0-16)	3,408 1.71 (0-14)	3,149 1.58 (0-17)	2,651 1.33 (0-12)	2,571 1.29 (0-11)	3,009 1.51 (0-24)	34,818 17.47
	C	1,494 0.73 (0-21)	1,392 0.68 (0-20)	1,433 0.70 (0-13)	1,494 0.73 (0-40)	1,617 0.79 (0-49)	1,576 0.77 (0-280)	1,781 0.87 (0-53)	1,617 0.79 (0-54)	1,616 0.79 (0-34)	1,556 0.76 (0-27)	1,494 0.73 (0-36)	1,638 0.80 (0-23)	18,708 9.14
TOTAL SESSIONS EXCLUDED		T=6,447 A=1.52 R=(0-323)	5,443 1.28 (0-288)	6,076 1.43 (0-209)	6,145 1.45 (0-152)	8,059 1.90 (0-214)	5,923 1.39 (0-280)	6,504 1.53 (0-146)	6,663 1.57 (0-156)	6,282 1.48 (0-136)	5,787 1.36 (0-136)	5,694 1.34 (0-186)	6,165 1.45 (0-187)	T=75,188 A=17.68
MONTHLY AVERAGE PER ORGANIZATION		6,266 dialysis sessions with missing data per organization per month												
MONTHLY AVERAGE PER FACILITY		1.47 dialysis sessions with missing data per facility per month across all organizations												

Table 4: Information on Exclusions (monthly and annual counts, across all facilities, by dialysis organization)

		PATIENTS EXCLUDED ACROSS ALL FACILITIES TOTAL NUMBER / AVERAGE PER FACILITY / FACILITY RANGES												TOTAL PATIENT- MOS
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Age <18 years	Org. A	T=24 A=0.11 R=(0-6)	29 0.14 (0-6)	31 0.15 (0-6)	30 0.14 (0-6)	30 0.14 (0-7)	45 0.21 (0-18)	30 0.14 (0-7)	30 0.14 (0-7)	30 0.14 (0-6)	28 0.13 (0-6)	25 0.12 (0-6)	28 0.13 (0-7)	T=360 A=1.70
	B	143 0.07 (0-27)	143 0.07 (0-26)	143 0.07 (0-27)	143 0.07 (0-30)	143 0.07 (0-28)	143 0.07 (0-29)	143 0.07 (0-30)	164 0.08 (0-31)	164 0.08 (0-30)	164 0.08 (0-29)	143 0.07 (0-27)	143 0.07 (0-27)	1,779 0.87
	C	2,631 1.32 (0-6)	2,551 1.28 (0-7)	2,770 1.39 (0-7)	2,671 1.34 (0-5)	2,491 1.25 (0-5)	2,551 1.28 (0-4)	2,362 1.19 (0-4)	2,332 1.12 (0-5)	2,272 1.14 (0-7)	2,392 1.20 (0-8)	2,432 1.22 (0-8)	2,491 1.25 (0-8)	29,946 15.03
In facility <30 days	A	23,172 11.32 (0-162)	16,806 8.21 (0-163)	16,970 8.29 (1-161)	17,420 8.51 (0-254)	18,505 9.04 (0-250)	18,096 8.84 (0-108)	20,941 10.23 (0-126)	19,590 9.57 (0-130)	17,338 8.47 (0-127)	17,338 8.47 (0-176)	17,277 8.44 (0-178)	17,707 8.65 (0-182)	221,160 108.06

	B	751 3.54 (0-14)	751 3.54 (0-15)	853 4.02 (0-46)	826 3.90 (0-21)	811 3.83 (0-46)	791 3.73 (0-22)	852 4.02 (0-17)	800 3.77 (0-16)	799 3.77 (0-14)	789 3.72 (0-13)	886 4.18 (0-34)	817 3.85 (0-27)	9,726 45.88
	C	5,899 2.96 (0-35)	5,720 2.87 (0-41)	6,677 3.35 (0-48)	6,816 3.42 (0-47)	6,896 3.46 (0-53)	7,195 3.61 (0-55)	8,411 4.22 (0-89)	7,872 3.95 (0-73)	6,557 3.29 (0-59)	6,597 3.31 (0-58)	7,394 3.71 (0-41)	6,497 3.26 (0-39)	75,974 38.12
Home hemodialysis patient	A	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	15,741 7.69 (0-274)	15,475 7.56 (0-265)	15,680 7.66 (0-273)	15,741 7.69 (0-269)	15,823 7.73 (0-271)	15,885 7.76 (0-272)	16,008 7.82 (0-264)	15,967 7.80 (0-271)	15,905 7.77 (0-268)	16,069 7.85 (0-281)	16,008 7.82 (0-286)	16,008 7.82 (0-288)	190,309 92.97
	C	143 0.68 (0-9)	122 0.58 (0-6)	166 0.78 (0-10)	171 0.81 (0-9)	198 0.93 (0-10)	222 1.05 (0-22)	268 1.26 (0-14)	215 1.01 (0-15)	231 1.09 (0-8)	185 0.87 (0-9)	213 1.01 (0-12)	202 0/95 (0-9)	2,336 11.02
Received <7 HD treatments in facility during reporting month	A	11,320 5.53 (0-104)	10,849 5.30 (0-75)	11,074 5.41 (0-143)	10,931 5.34 (0-128)	11,218 5.48 (0-96)	12,180 5.95 (0-114)	12,937 6.32 (0-129)	12,159 5.94 (0-150)	11,381 5.56 (0-115)	10,849 5.30 (0-176)	11,914 5.82 (0-139)	11,606 5.67 (0-120)	138,418 67.62
	B	606 2.86 (0-12)	752 3.55 (0-24)	628 2.96 (0-17)	640 3.02 (0-19)	636 3.07 (0-47)	630 2.97 (0-18)	595 2.81 (0-19)	603 2.84 (0-12)	651 3.07 (0-13)	621 2.93 (0-13)	706 3.33 (0-15)	625 2.95 (0-20)	7,693 36.29
	C	15,426 7.74 (0-117)	16,980 8.52 (0-178)	16,402 8.23 (0-255)	15,067 7.56 (0-131)	15,346 7.70 (0-163)	16,522 8.29 (0-98)	16,622 8.34 (0-93)	17,439 8.75 (0-186)	15,167 7.61 (0-146)	14,350 7.20 (0-187)	15,486 7.77 (0-99)	14,688 7.37 (0-119)	189,495 95.08
No completed CMS-2728 Form in reporting month	A	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	0	0	0	0	0	0	0
	C	2,730 1.37 (0-13)	2,790 1.40 (0-12)	2,770 1.39 (0-12)	2,750 1.38 (0-14)	2,770 1.39 (0-12)	2,730 1.37 (0-12)	2,691 1.35 (0-12)	2,631 1.32 (0-12)	2,531 1.27 (0-12)	2,511 1.26 (0-13)	2,611 1.31 (0-14)	2,571 1.29 (0-13)	32,086 16.10
Kidney transplant recipient with functioning graft	A	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	0	0	0	0	0	0	0
	C	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL MONTHLY EXCLUSIONS BY DO	A	14,111 7.08 (1-117)	15,480 7.77 (1-178)	15,367 7.71 (1-255)	14,268 7.16 (1-131)	14,647 7.35 (1-163)	15,766 7.91 (1-98)	15,892 7.97 (1-93)	16,535 8.30 (1-186)	14,582 7.32 (1-146)	13,979 7.01 (1-187)	15,284 7.67 (1-99)	14,765 7.67 (1-119)	T=180,676 A=90.66
	B	40,490 19.78 (0-274)	35,372 17.28 (0-265)	35,188 17.19 (0-273)	35,556 17.37 (0-269)	36,478 17.82 (0-271)	36,764 17.96 (0-272)	38,954 19.03 (0-264)	37,726 18.43 (0-271)	35,843 17.51 (0-268)	35,638 17.41 (0-281)	35,904 17.54 (0-286)	36,559 17.86 (0-288)	440,473 215.18
	C	1,118 5.27 (1-19)	1,279 6.03 (1-36)	1,305 6.16 (1-47)	1,241 5.85 (1-25)	1,199 5.66 (1-50)	1,254 5.92 (1-22)	1,264 5.96 (1-24)	1,218 5.75 (1-21)	1,254 5.92 (1-21)	1,235 5.83 (1-23)	1,356 6.40 (1-34)	1,226 5.78 (1-27)	T=14,949 A=70.51
TOTAL MONTHLY EXCLUSIONS ACROSS ALL 3 DIALYSIS ORGANIZATIONS		T=55,719 A=13.10 R=(0-274)	52,131 12.26 (0-265)	51,834 12.19 (0-273)	51,056 12.01 (0-269)	52,324 12.31 (0-271)	53,784 12.65 (0-272)	56,110 13.20 (0-264)	55,479 13.05 (0-271)	51,679 12.15 (0-268)	50,852 11.96 (0-281)	52,544 12.36 (0-286)	52,550 12.36 (0-288)	T=636,098 A=149.53

Table 5: Facility Performance Scores and Statistical Significance of Differences in Performance

	A	B	C	AVERAGE ACROSS ALL PARTICIPATING DIALYSIS ORGANIZATIONS
MEAN SCORE ACROSS ALL FACILITIES	25.13%	21.72%	17.91%	23.13%
95% CONFIDENCE INTERVAL	24.62-25.63	20.69-21.58	16.45-19.38	22.18-23.45
RANGE OF SCORES ACROSS ALL FACILITIES*	0.00-100.00%	0.00-100.00%	0.93-62.50%	0.00-100.00%
STANDARD DEVIATION	11.56	10.18	10.81	10.56
STANDARD ERROR				0.16
MEDIAN				22.56%
MODE				25.00%
INTERQUARTILE RANGE				14.08

* Participating organizations noted that scores of 100% (lower scores are better) were secondary to low census and are currently analyzing the data to determine whether these facility-months would be removed from the denominator were a census criterion incorporated into the measure specifications.

Table 6: Reliability Testing Results (SAS Analysis)

ORGANIZATION	A		B		C	
COVARIANCE PARAMETER ESTIMATES						
	Intercept (between facilities)	Residual (within facility)	Intercept (between facilities)	Residual (within facility)	Intercept (between facilities)	Residual (within facility)
Estimate	0.01132	0.003346	0.0958075	0.0727917	123.60	49.21
Standard Error	0.001134	0.000098	X	X	4.13	0.49
Z Value	9.98	34.02	X	X	29.92	100.82
Pr>z	<0.0001	<0.0001	<0.001	<0.001	<0.0001	<0.0001
FIT STATISTICS						
-2 Res Log Likelihood	-6440.0	X	X	X	X	X
AIC	-6436.0	X	X	X	X	X
AICC	-6436.0	X	X	X	X	X
BIC	-6429.3	X	X	X	X	X
SOLUTION FOR FIXED EFFECTS						
Estimate	0.1790		X		X	
Standard Error	0.007398		X		X	
DF	211		X		X	
T Value	24.19		X		X	
Pr>Z	<0.0001		X		X	
OTHER VALUES						
ICC	X		0.63401		X	
F	X		20.98		X	
Standard Error	X		0.00797		X	
p	X		<0.001		X	

Table 7: Validity Testing Results (Pearson's Correlation Analysis)

	KCQA Measure: Post-Dialysis Weight Above or Below Target Weight	2013 SHR (single year)	2013 HOSPITALIZATION RATE FROM DFR, IF AVAILABLE	2013 SMR
Org. A	Pearson's Correlation (r) = 1.0	Pearson's Correlation (r) = 0.17 Sig (2-tailed) = 0.0169	Pearson's Correlation (r) = 0.17 Sig (2-tailed) = 0.0169	Pearson's Correlation (r) = 0.25 Sig (2-tailed) = 0.0002
B	Pearson's Correlation (r) = 1.0	Pearson's Correlation (r) = 0.23 Sig (2-tailed) < 0.001	Not available	Pearson's Correlation (r) = 0.19 Sig (2-tailed) < 0.001
C	Pearson's Correlation (r) = 1.0	Pearson's Correlation (r) = 0.16 Sig (2-tailed) <0.0001	Pearson's Correlation (r) = 0.19 Sig (2-tailed) <0.0001	Pearson's Correlation (r) = 0.10 Sig (2-tailed) <0.0001