

## MEASURE INFORMATION FORM

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**Project Title:**

Comprehensive Reevaluation – Dialysis Adequacy

**Project Overview:**

The Centers for Medicare & Medicaid Services (CMS) has contracted with the University of Michigan Kidney Epidemiology and Cost Center (UM-KECC) develop measures of dialysis adequacy in ESRD patients. The contract name is ESRD Quality Measure Development, Maintenance, and Support. The contract number is HHSM-500-2013-13017I.

**Date:**

Information included is current on September 25, 2015

**Measure Name:****Descriptive Information:****Measure Name (Measure Title De.2.)**

Measurement of nPCR for Pediatric Hemodialysis Patients

**Measure Type De.1.**

Process

**Brief Description of Measure De.3.**

Percentage of patient months of pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis) with documented monthly nPCR measurements.

**If Paired or Grouped De.4.**

N/A

**Subject/Topic Areas De.5.**

Renal, Renal: End Stage Renal Disease (ESRD)

**Crosscutting Areas De 6.**

N/A

**Measure Specifications:****Measure-specific Web Page S.1.**

N/A

**If This Is an eMeasure S.2a.**

N/A

**Data Dictionary, Code Table, or Value Sets S.2b.**

N/A

**For Endorsement Maintenance S.3.**

N/A

**Numerator Statement S.4.**

Number of patient months in the denominator with monthly nPCR measurements.

**Time Period for Data S.5.**

The entire calendar month.

**Numerator Details S.6.**

The numerator will be determined by counting the patients in the denominator who meet one of the following criteria during the study month: nPCR is populated AND “Date nPCR Collected” is populated, OR “Kt/V Hemodialysis Collection Date” is populated, AND “BUN Pre-Dialysis” is populated, AND “BUN Post-Dialysis” is populated, AND “Pre-Dialysis Weight” is populated, AND “Pre-Dialysis Weight Unit of Measure” is populated, AND “Post-Dialysis Weight” is populated, AND “Post-Dialysis Weight Unit of Measure” is populated, AND “Delivered Minutes of BUN Hemodialysis Session” is populated AND “Interdialytic Time” is populated.

**Denominator Statement S.7.**

Number of all patient months for pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis).

**Target Population Category S.8.**

Children's Health, Populations at Risk

**Denominator Details S.9.**

The duration of hemodialysis treatment will be calculated as the difference between the first “Kt/V Collection Date” and “Date Regular Chronic Dialysis Began”. The denominator will include all in-center hemodialysis patients <18 years old. The patient’s age will be determined by subtracting the patient’s date of birth from the first day of the reporting month. In-center hemodialysis patients are defined as follows: “Admit Date” to the specified facility is prior or equal to the first day of the study period, AND the patient has not been discharged (“Discharge Date” is null or blank), OR “Discharge Date” from the facility is greater than or equal to the last day of the study period AND “Treatment Dialysis Broad Start Date” is prior or equal to the first day of the study period, AND “Dialysis Broad Type of Treatment” = ‘HD’, AND “Primary Dialysis Setting” = ‘Dialysis Facility/Center’ on the last day of the study period, AND “Date Regular Chronic Dialysis Began” is prior to the first day of the study period.

**Denominator Exclusion (NQF Includes “Exception” in the “Exclusion” Field) S.10.**

Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old), all patients who have not been in the facility for the entire reporting month, and all home hemodialysis patients. There are no additional exclusions for this measure

**Denominator Exclusion Details (NQF Includes “Exception” in the “Exclusion” Field) S.11.**

N/A

**Stratification Details/Variables S.12.**

N/A

**Risk Adjustment Type S.13.**

No risk adjustment or risk stratification

**Statistical Risk Model and Variables S.14.**

N/A

**Detailed Risk Model Specifications S.15.**

N/A

**Type of Score S.16.**

Rate/proportion

**Interpretation of Score S.17.**

Better quality = Higher score

**Calculation Algorithm/Measure Logic S.18.**

The duration of hemodialysis treatment will be calculated as the difference between the first “Kt/V Collection Date” and “Date Regular Chronic Dialysis Began”. The denominator will include all in-center hemodialysis patients <18 years old. The patient’s age will be determined by subtracting the patient’s date of birth from the first day of the reporting month. In-center hemodialysis patients are defined as follows: “Admit Date” to the specified facility is prior or equal to the first day of the study period, AND the patient has not been discharged (“Discharge Date” is null or blank), OR “Discharge Date” from the facility is greater than or equal to the last day of the study period AND “Treatment Dialysis Broad Start Date” is prior or equal to the first day of the study period, AND “Dialysis Broad Type of Treatment” = ‘HD’, AND “Primary Dialysis Setting” = ‘Dialysis Facility/Center’ on the last day of the study period, AND “Date Regular Chronic Dialysis Began” is prior to the first day of the study period.

The numerator will be determined by counting the patients in the denominator who meet one of the following criteria during the study month: npCR is populated AND “Date nPCR Collected” is populated, OR “Kt/V Hemodialysis Collection Date” is populated, AND “BUN Pre-Dialysis” is populated, AND “BUN Post-Dialysis” is populated, AND “Pre-Dialysis Weight” is populated, AND “Pre-Dialysis Weight Unit of Measure” is populated, AND “Post-Dialysis Weight” is populated,

AND “Post-Dialysis Weight Unit of Measure” is populated, AND “Delivered Minutes of BUN Hemodialysis Session” is populated AND “Interdialytic Time” is populated.

**Calculation Algorithm/Measure Logic Diagram URL or Attachment S.19.**

No diagram provided

**Sampling S.20.**

N/A

**Survey/Patient-Reported Data S.21.**

N/A

**Missing Data S.22.**

N/A

**Data Source S.23.**

Electronic Clinical Data

**Data Source or Collection Instrument S.24.**

CROWNWeb

**Data Source or Collection Instrument (Reference) S.25.**

No data collection instrument provided

**Level of Analysis S.26.**

Facility

**Care Setting S.27.**

Dialysis Facility

**Composite Performance Measure S.28.**

N/A

# MEASURE JUSTIFICATION FORM

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**Project Title:**

Comprehensive Reevaluation – Dialysis Adequacy

**Project Overview:**

The Centers for Medicare & Medicaid Services (CMS) has contracted with the University of Michigan Kidney Epidemiology and Cost Center (UM-KECC) develop measures of dialysis adequacy in ESRD patients. The contract name is ESRD Quality Measure Development, Maintenance, and Support. The contract number is HHSM-500-2013-13017I.

**Date:**

Information included is current on September 25, 2015

**Measure Name:**

Measurement of nPCR for Pediatric Hemodialysis Patients

**Type of Measure Importance:****1a—Opportunity for Improvement****1a.1. This is a Measure of**

Process: measurement of nPCR

**1a.2. —Linkage****1a.2.1 Rationale**

N/A

**1a.3. —Linkage****1a.3.1. Source of Systematic Review**

Clinical Practice Guideline recommendation – complete sections 1a.4, and 1a.7 Other – complete section 1a.8

**1a.4. —Clinical Practice Guideline Recommendation****1a.4.1. Guideline Citation**

National Kidney Foundation. KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations for 2006 Updates: Hemodialysis Adequacy, Peritoneal Dialysis Adequacy and Vascular Access. Am J Kidney Dis 48:S1-S322, 2006 (suppl 1).

[http://www.kidney.org/PROFESSIONALS/kdoqi/guideline\\_upHD\\_PD\\_VA/index.htm](http://www.kidney.org/PROFESSIONALS/kdoqi/guideline_upHD_PD_VA/index.htm)

**1a.4.2. Specific Guideline**

2006 KDOQI GUIDELINE 8. PEDIATRIC HEMODIALYSIS PRESCRIPTION AND ADEQUACY

8.2.2 Assessment of nutrition status is an essential component of HD adequacy measurement.

nPCR should be measured monthly by using either formal urea kinetic modeling or algebraic

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approximation. (B)

## 2008 KDOQI CPR RECOMMENDATION 1: EVALUATION OF GROWTH AND NUTRITIONAL STATUS

1.1 The nutritional status and growth of all children with CKD stages 2 to 5 and 5D should be evaluated on a periodic basis.

(A) The following parameters of nutritional status and growth should be considered in combination for evaluation in children with CKD stages 2 to 5 and 5D. (B) Dietary intake (3-day diet record or three 24-hour dietary recalls) Length- or height-for-age percentile or standard deviation score (SDS) Length or height velocity-for-age percentile or SDS Estimated dry weight and weight-for-age percentile or SDS BMI-for-height-age percentile or SDS Head circumference-for-age percentile or SDS (=3 years old only). Normalized protein catabolic rate (nPCR) in hemodialyzed adolescents with CKD stage 5D.

### 1a.4.3. Grade

The 2006 KDOQI Guideline 8.2.2 rating strength grade is 'B'. The recommendation for Grade B guidelines states 'It is recommended that clinicians routinely follow the guideline for eligible patients. There is moderate to strong evidence that the practice improves health outcomes.'

### 1a.4.4. Grades and Associated Definitions

The rating system defined in the KDOQI Guidelines was used to grade the strength of the Guideline recommendation. KDOQI defined grades as follows:

Grade A: It is strongly recommended that clinicians routinely follow the guideline for eligible patients. There is strong evidence that the practice improves health outcomes.

Grade B: It is recommended that clinicians routinely follow the guideline for eligible patients. There is moderately strong evidence that the practice improves health outcomes.

Grade CPR: It is recommended that clinicians consider following the guideline for eligible patients. This recommendation is based on either weak evidence or on the opinions of the Work Group and reviewers that the practice might improve health outcomes.

### 1a.4.5. Methodology Citation

National Kidney Foundation: DOQI Clinical Practice Guidelines for Vascular Access, Appendix 1. Methods for Evaluating Evidence. Update 2006.

[http://www.kidney.org/Professionals/kdoqi/guideline\\_upHD\\_PD\\_VA/index.htm](http://www.kidney.org/Professionals/kdoqi/guideline_upHD_PD_VA/index.htm)

### 1a.4.6. Quantity, Quality, and Consistency

No → report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7

## 1a.5. —United States Preventative Services Task Force Recommendation

### 1a.5.1. Recommendation Citation

N/A

### 1a.5.2. Specific Recommendation

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N/A

**1a.5.3. Grade**

N/A

**1a.5.4. Grades and Associated Definitions**

N/A

**1a.5.5. Methodology Citation**

N/A

**1a.6. —Other Systematic Review of the Body of Evidence**

**1a.6.1. Review Citation**

N/A

**1a.6.2. Methodology Citation**

N/A

**1a.7. —Findings from Systematic Review of Body of the Evidence Supporting the Measure**

**1a.7.1. Specifics Addressed in Evidence Review**

N/A

**1a.7.2. Grade**

N/A

**1a.7.3. Grades and Associated Definitions**

N/A

**1a.7.4. Time Period**

N/A

**1a.7.5. Number and Type of Study Designs**

N/A

**1a.7.6. Overall Quality of Evidence**

N/A

**1a.7.7. Estimates of Benefit**

N/A

**1a.7.8. Benefits Over Harms**

N/A

**1a.7.9. Provide for Each New Study**

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N/A

## **1a.8. —Other Source of Evidence**

### **1a.8.1. Process Used**

In the 2006 Kidney Disease Outcomes Quality Initiative (KDOQI) Guidelines, Clinical Practice Guideline for pediatric hemodialysis adequacy (Guideline 8.2.2) specifies nPCR should be measured monthly. The 2008 KDOQI Clinical Practice Guideline Update for nutrition in children with CKD Recommendation 1.1 states that the nutritional status and growth of all children with CKD stages 2-5 be evaluated on a periodic basis.

Recommendation 1.2 states that nPCR should be evaluated in hemodialyzed adolescents. Small scale observational studies have shown an association between nPCR and nutritional status among malnourished adolescent patients who achieved target spKt/V levels [1,2]. Additionally, in adolescent patients, nPCR levels < 1 gram/kg/day were found to be an earlier and more sensitive marker than serum albumin levels in predicting malnutrition and sustained weight loss [3]. In May 2014, an additional literature search was performed. A recent comprehensive review on the subject [4] is included in the citations below as a result of that search. This review continues to be supportive of the concept of monitoring nPCR as part of evaluation of Protein Energy Wasting (PEW) in children/adolescents on dialysis.

### **1a.8.2. Citation**

1. Goldstein, Baronette, et al. nPCR assessment and IDPN treatment of malnutrition in pediatric hemodialysis patients. *Pediatric Nephrology* (2002) 17:531-534.
2. Orellana P, Juarez-Congelosi M, Goldstein SL. Intradialytic parenteral nutrition treatment and biochemical marker assessment for malnutrition in adolescent maintenance hemodialysis patients. *J Ren Nutrition* 2005 Jul;15(3):312-7.
3. Juarez-Congelosi M, Orellana P, Goldstein SL: Normalized protein catabolic rate versus serum albumin as a nutrition status marker in pediatric patients receiving hemodialysis. *J Ren Nutr* 17:269-274, 2007.
4. Mastrangelo A, Paglialonga F, Edefonti A. Assessment of nutritional status in children with chronic kidney disease and on dialysis. *Pediatr Nephrol*. 2014 Aug;29(8):1349-58. doi: 10.1007/s00467-013-2612-7. Epub 2013 Sep 5.

## **1b.—Evidence to Support Measure Focus**

### **1b.1. Rationale**

nPCR provides an estimate of dietary protein intake and has been shown to provide additional information to spKt/V. Studies have shown that in adolescent patients who achieved target spKt/V levels, nPCR was associated with nutritional status. Furthermore, there is evidence that nPCR < 1 gram/kg/day is predictive of malnutrition and sustained weight loss among adolescent patients.

### **1b.2. Performance Scores**

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Among the 30 facilities that have at least 11 eligible pediatric patients, we generated the following statistics of their performance scores using the January – December 2013 (i.e., calendar year 2013) CROWNWeb clinical data: mean (SD) = 80.4% (34.0%), min = 0%, max = 100%, 25th percentile = 68.9%, 50th percentile = 99.1%, and 75th percentile = 100%.

### **1b.3. Summary of Data Indicating Opportunity**

N/A

### **1b.4. and 1b.5. Disparities**

Given that the number of facilities included in the calculation in 1b.2 is only 13, the sample was determined to be too small to display useful disparities data.

### **1c.—High Priority**

#### **1c.1. Demonstrated High-Priority Aspect of Health Care**

Frequently performed procedure, Severity of illness

#### **1c.3. Epidemiologic or Resource Use Data**

In the pediatric population, the assessment of dialysis adequacy requires an evaluation of both small solute clearance and nutritional status [1, 2]. This is because both adequate solute clearance and nutrition are essential for growth and visceral weight gain. Whereas there are several potential measures of nutritional status, these are outside the scope of hemodialysis adequacy measures with the exception of nPCR (normalized protein catabolic rate), a value that is a fundamental component of and already readily available from urea kinetics. This allows the use of nPCR along with spKt/V as measures of dialysis adequacy.

nPCR provides an estimate of dietary protein intake and has been shown to provide additional information to spKt/V. In malnourished adolescent patients who achieved target spKt/V levels, nPCR, but not serum albumin, was associated with nutritional status [3, 4]. In adolescent patients, nPCR levels < 1 gram/kg/day were found to be an earlier and more sensitive marker than serum albumin levels in predicting malnutrition and sustained weight loss [5]. Additionally, monitoring of nPCR continues to be recommended as part of evaluation of Protein Energy Wasting (PEW) in children on dialysis [6]. There is currently no evidence that supports specific nPCR targets, although age-specific protein intake targets exist. The same data needed for Kt/V calculation can be used for nPCR calculation. Thus, nPCR can be monitored monthly along with Kt/V to follow up protein intake for a particular patient.

#### **1c.4. Citations**

1. Clinical Practice Guidelines for Hemodialysis Adequacy: KDOQI Guideline 8. Pediatric Hemodialysis Prescription and Adequacy: 2006.
  2. Clinical Practice Guideline for Nutrition in Children with CKD: 2008 Update, Recommendation 1.
  3. Goldstein, Baronette, et al. nPCR assessment and IDPN treatment of malnutrition in pediatric hemodialysis patients. *Pediatric Nephrology* (2002) 17:531-534.
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4. Orellana P, Juarez-Congelosi M, Goldstein SL. Intradialytic parenteral nutrition treatment and biochemical marker assessment for malnutrition in adolescent maintenance hemodialysis patients. J Ren Nutrition 2005 Jul;15(3):312-7.

5. Juarez-Congelosi M, Orellana P, Goldstein SL: Normalized protein catabolic rate versus serum albumin as a nutrition status marker in pediatric patients receiving hemodialysis. J Ren Nutr 17:269-274, 2007.

#### **1c.5. PRO-PM**

N/A

#### **Scientific Acceptability:**

##### **1.—Data Sample Description**

##### **What Type of Data was Used for Testing?**

Measure Specified to Use Data from: (must be consistent with data sources entered in S.23) clinical database/registry. Measure Tested with Data From: clinical database/registry

##### **1.1. Identify the Specific Dataset**

Clinical database/registry (CROWNWeb)

##### **1.2. What are the Dates of the Data Used in Testing?**

January – December 2013

##### **1.3. What Levels of Analysis Were Tested?**

Measure Specified to Measure Performance of: (must be consistent with levels entered in item S.26) hospital/facility/agency. Measure Tested at Level of: hospital/facility/agency

##### **1.4. How Many and Which Measured Entities Were Included in the Testing and Analysis?**

The measured entities used in testing and analysis include reported nPCR and the necessary data elements needed for calculating nPCR for 455 in-center hemodialysis (ICH) pediatric patients from 30 dialysis facilities with at least 11 eligible pediatric patients across all regions of the United States.

Public reporting of this measure on DFC or in the ESRD QIP would be restricted to facilities with at least 11 eligible patients for the measure. We have applied this restriction to all the reliability and validity testing reported here.

Facilities vary in size, and include anywhere from 11 to 28 eligible ICH pediatric patients. The data elements include “nPCR” or the combination of “Kt/V hemodialysis collection date”, “BUN pre-dialysis”, “BUN post-dialysis”, “pre-dialysis weight”, “pre-dialysis weight unit of measure”, “post-dialysis weight”, “post-dialysis weight unit of measure”, “delivered minutes of BUN hemodialysis session”, and “interdialytic time.”

##### **1.6. How Many and Which Patients Were Included in the Testing and Analysis?**

Testing was performed on all Medicare and non-Medicare pediatric, ICH patients available in CROWNWeb

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from 2013. The sample included 455 patients from 225 facilities. The table below shows the number and percent of pediatric ICH patients by race, sex, and Hispanic ethnicity.

<b>Race/Sex/Ethnicity</b>	<b>Frequency</b>	<b>Percent</b>
<b>Race</b>		
Asian	23	5.05%
Black	147	32.31%
White	274	60.22%
Native American	5	1.10%
Pacific Islander	4	0.88%
Mid East Arabian	1	0.22%
Other/Multi-racial	1	0.22%
<b>Sex</b>		
Female	202	44.40%
Male	253	55.60%
<b>Ethnicity</b>		
Hispanic	163	35.82%
Non-Hispanic	292	64.18%

### 1.7. Sample Differences, if Applicable

N/A

## 2a.2—Reliability Testing

### 2a2.1. Level of Reliability Testing

Performance measure score (e.g., signal-to-noise analysis)

### 2a2.2. Method of Reliability Testing

January 2013 – December 2013 CROWNWeb data were used to calculate the inter-unit reliability (IUR) for the overall 12 months to assess the reliability of this measure. The NQF-recommended approach for determining measure reliability is a one-way analysis of variance (ANOVA), in which the between and within facility variation in the measure is determined. The inter-unit reliability (IUR) measures the proportion of the measure variability that is attributable to the between-facility variance. The yearly based IUR was estimated using a bootstrap approach, which uses a resampling scheme to estimate the within facility variation that cannot be directly estimated by ANOVA. We note that the method for calculating the IUR was developed for measures that are approximately normally distributed across facilities. Since this measure is not normally distributed, the IUR value should be interpreted with some caution.

### 2a2.3. Statistical Results from Reliability Testing

The overall IUR was 0.985, which indicates that about 98.5% of the variation in the measure can be attributed to the between facility differences and 1.5% to within facility variation.

### 2a2.4. Interpretation

The IUR suggests this measure is reliable. However, since the distribution of performance scores is skewed, the IUR value should be interpreted with some caution.



## **2b2—Validity Testing**

### **2b2.1. Level of Validity Testing**

Performance measure score. Empirical validity testing. Systematic assessment of face validity of performance measure score as an indicator of quality or resource use (i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance).

### **2b2.2. Method of Validity Testing**

Concurrent validity was used as a method for testing the association between facility percentage of patients with nPCR data elements and mean serum albumin. Although serum albumin is not a gold standard for nutritional assessment, it is a strong indicator of patient health and mortality in dialysis patients.

Using calendar year 2013 CROWNWeb data, average facility-mean albumin was compared between the two groups using a two-sided two-sample t-test, using facility percent of patients with nPCR data elements and mean serum albumin. Facilities were then categorized into one of two groups:

- 1) Facilities with 100% reporting of nPCR among their pediatric patients;
- 2) Facilities with less than 100% reporting of nPCR among their pediatric patients

nPCR values outside the range of [0.2, 1.8] were excluded.

This measure was also reviewed and approved by a Clinical TEP in 2010.

### **2b2.3. Statistical Results from Validity Testing**

Among facilities with at least 11 eligible pediatric patients with recorded nPCR values, facilities with 100% reporting of recorded nPCR values had a mean serum albumin of 3.77, while facilities with less than 100% reporting of recorded nPCR values had a mean serum albumin of 4.0. Using a t-test, these values were statistically significant (p-value 0.02).

### **2b2.4. Interpretation**

These findings are somewhat unexpected, and in the opposite direction of analyses previously conducted. This difference may have resulted from a larger sample utilized for the current analyses (previous analyses were conducted over a limited timeframe). We speculate that the observed findings may have resulted if facilities are more likely to collect necessary data elements for nPCR assessment in patients for which nutritional concerns exist. These results therefore do not necessarily contradict the importance of evaluating nPCR.

## **2b3—Exclusion Analysis**

### **2b3.1. Method of Testing Exclusion**

N/A

### **2b3.2. Statistical Results from Testing Exclusion**

N/A

### **2b3.3. Interpretation**

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N/A

**2b4—Risk Adjustment or Stratification**

**2b4.1. Method of controlling for differences**

No risk adjustment or stratification

**2b4.2. Rationale why Risk Adjustment is not Needed**

The measure evaluates the process of tracking a marker for nutrition, which is nPCR. There is no clinical basis nor evidence in the literature that suggests evaluation of nutritional status is less important in certain patient demographic or clinical profiles.

**2b4.3. Conceptual, Clinical, and Statistical Methods**

N/A

**2b4.4. Statistical Results**

N/A

**2b4.5. Method Used to Develop the Statistical Model or Stratification Approach**

N/A

**2b4.6. Statistical Risk Model Discrimination Statistics (e.g., c-statistic,  $R^2$ )**

N/A

**2b4.7. Statistical Risk Model Calibration Statistics (e.g., Hosmer-Lemeshow statistic)**

N/A

**2b4.8. Statistical Risk Model Calibration—Risk decile plots or calibration curves**

N/A

**2b4.9. Results of Risk Stratification Analysis**

N/A

**2b4.10. Interpretation**

N/A

**2b4.11. Optional Additional Testing for Risk Adjustment**

N/A

**2b5—Identification of statistically significant and clinically meaningful differences**

**2b5.1. Method for determining**

Differences in measure performance were evaluated separately for each facility using patient level analyses. The proportion of patients with yearly based percent of patients with reporting of nPCR was compared between one facility and the overall national distribution, and repeated for each individual facility.

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Note that the monthly based measure is a simple average of binary outcomes across individuals in the facility, for which the binary outcome equals to 0 (failure) if the value is less than the threshold or if the value is missing. The differences in proportions can be compared using Fisher’s Exact tests or its normal approximation. The yearly based measure, however, is not a simple average of binary outcomes and we instead used a re-sampling based exact test, with re-sampling generated from the population distribution of the patient level outcomes. More details for the testing method are provided in Appendix. Due to non-symmetric of the measure distributions, one-sided test with significance level 0.025 is used (corresponding to cutoff=0.05 in two-sided test). To calculate the p-value, we assess the probability that the facility would experience a number of events more extreme than that observed if the null hypothesis were true.

**2b5.2. Statistical Results**

Proportion of facilities with significant p-values (0-as expected; 1-worse than expected; cutoff=0.025) is shown as follows:

	# of Facilities	Percent of facilities	Median Performance Score
As Expected/Better than Expected	23	76.67%	100.00%
Worse than Expected	7	23.33%	24.49%

**2b5.3. Interpretation**

Significance testing identifies 7 facilities (23.3%) with worse than expected performance at a median of 24.5% of patients with reporting of nPCR data elements. The clear separation in measure performance between facilities identified with worse than expected performance versus those with as expected or better than expected performance provides support for the ability to identify clinically important differences in performance on this measure through significance testing.

**2b6—Comparability of performance scores**

**2b6.1. Method of testing conducted to demonstrate comparability**

N/A

**2b6.2. Statistical Results**

N/A

**2b6.3. Interpretation**

N/A

**Feasibility:**

**3a.1. How are the data elements needed to compute measure scores generated**

generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition

**3b.1. Are the data elements needed for the measure as specified available electronically**

ALL data elements are in defined fields in electronic clinical data (e.g., clinical registry, nursing

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home MDS, home health OASIS)

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment**

N/A

**3c.1. Describe what you have learned or modified as a result of testing**

N/A

**3c.2. Describe any fees, licensing, or other requirements**

N/A

**Usability and Use:**

**4.1—Current and Planned Use**

**4a.1. Program, sponsor, purpose, geographic area, accountable entities, patients**

N/A

**4a.2. If not publicly reported or used for accountability, reasons**

This measure was originally time-limited endorsed due to lack of testing data. The measure received full endorsement on April 9, 2014.

**4a.3. If not, provide a credible plan for implementation**

CMS will consider whether to implement this measure in future public reporting programs.

**4b.1. Progress on improvement**

N/A

**4b.2. If no improvement was demonstrated, what are the reasons**

This measure is not currently publically reported, so data on performance improvement is not currently available. Given that small scale observational studies have shown an association between nPCR and nutritional status among malnourished adolescent patients who achieved target spKt/V levels, we would expect that public reporting of this measure would encourage facilities to better monitor the nutrition status of their pediatric patients.

**Related and Competing Measures:**

**5—Relation to Other NQF-Endorsed Measures**

**5.1a. The measure titles and NQF numbers are listed here**

N/A

**5.1b. If the measures are not NQF-endorsed, indicate the measure title**

**5a—Harmonization**

**5a.1. Are the measure specifications completely harmonized**

N/A

**5a.2. If not completely harmonized, identify the differences rationale, and impact**

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N/A

**5b—Competing measures**

**5b.1 Describe why this measure is superior to competing measures**

N/A

**Additional Information:**

**Co.1. —Measure Steward Point of Contact**

**Co.1.1. Organization**

Centers for Medicare & Medicaid Services

**Co.1.2. First Name**

Corette

**Co.1.3. Last Name**

Byrd

**Co.1.4. Email Address**

corette.byrd@cms.hhs.gov

**Co.1.5. Phone Number**

410-786-1158

**Co.2. —Developer Point of Contact (indicate if same as Measure Steward Point of Contact)**

**Co.2.1. Organization**

University of Michigan Kidney Epidemiology and Cost Center

**Co.2.2. First Name**

Casey

**Co.2.3. Last Name**

Parrotte

**Co.2.4. Email Address**

parrotte@med.umich.edu

**Co.2.5. Phone Number**

734-763-6611

**Ad.1. Workgroup/Expert Panel Involved in Measure Development**

N/A

**Ad.2. Year the Measure Was First Released**

N/A

**Ad.3. Month and Year of Most Recent Revision**

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02, 2015

**Ad.4. What is your frequency for review/update of this measure?**

Annually

**Ad.5. When is your next scheduled review/update for this measure?**

02, 2016

**Ad.6. Copyright Statement**

N/A

**Ad.7. Disclaimers**

N/A

**Ad.8. Additional Information/Comments**

N/A

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